

**EVALUATING THE IMPACT OF CONSTRUCTION PROJECT MANAGEMENT
AND STAKEHOLDER INVOLVEMENT ON EDUCATION INFRASTRUCTURE**

DEVELOPMENT IN UGANDA:

CASE STUDY OF MBALE DISTRICT LOCAL GOVERNMENT

BY

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DECLARATION

I, Mukuru Silverio, certify that I wrote this dissertation entirely on my own and that I have never submitted it in full or in part for any other degree application. This work is exclusively mine unless it is specifically stated otherwise by reference or acknowledgement.

Signature:

Date:

APPROVAL

This is to certify that we, the undersigned, have read and hereby recommend this dissertation titled “ *Evaluating the Impact of Construction Project Management and Stakeholder Involvement on Education Infrastructure Development in Uganda: Case Study of Mbale District Local Government,*” for acceptance by Kyambogo University in fulfilment of the requirements for the award of the Master of Science in Construction Technology and Management of Kyambogo University.

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DEDICATION

This dissertation is dedicated to my family members who supported me emotionally, logistically and physically throughout the entire process of conducting this research.

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LIST OF ABBREVIATIONS

APL	Adaptable Public Lending
CCM	Construction Contract Management
CoEs	Centers of Excellence
DLG	District Local Government
LG	Local Government
MDLG	Mbale District Local Government
MoFPED	Ministry of Finance, Planning and Economic Development
GPE	Global Partnership in Education
PPDA	Public Procurement and Disposal of Public Assets Authority
SDG	Sustainable Development Goals
SFG	School Facilities Grant
SPSS	Statistical Package for Social Sciences
UgIFT	Uganda Inter-governmental Fiscal Transfer
UPE	Universal Primary Education
UPOLET	Uganda Post O'level Education and Training
USDP	Uganda Skills Development Program
USE	Universal Secondary Education
UTSEP-GPE	Uganda Teachers and School Effectiveness Project-Global Partnership in Education
FY	Financial Year

ABSTRACT

Despite public spending, education infrastructure in Uganda has remained poor and inadequate. Poor educational infrastructure impedes the achievement of the SDGs and prosperity for all, which slows socio-economic growth in any given society. This study evaluated the impact of construction project management in education infrastructure development where key actors in contract administration of education infrastructure in Mbale District Local Government were targeted. A cross-sectional survey design was adopted and both qualitative and quantitative research methods were used. A questionnaire, interview guide and document reviews were used to collect both primary and secondary data from a sample of 108 respondents determined by Krejcie and Morgan's table. While SPSS was used for quantitative data analysis, qualitative data were analyzed in the form of themes. The study established that construction project management has a positive influence on education infrastructure development (Adjusted $R^2 = 0.918$, $P < 0.05$). Specifically, it was revealed that contract management practices (Adjusted $R^2 = 0.892$, $P < 0.05$) and stakeholder involvement (Adjusted $R^2 = 0.917$, $P < 0.05$) have a significant effect on education infrastructure development. As a result, the study concluded that construction project management plays a vital role in enhancing education infrastructure development and a methodology derived to help local governments to achieve sustainable education infrastructure development. Therefore, the study recommended that Local Governments should carry out construction needs assessment before any project is undertaken. There should be a sound management team in place and there should be adherence to good contract management principles and practices, sound monitoring and supervision systems and a thorough assessment of contractors' capability should be done before contract award.

Keywords: *Contract management, infrastructure development, stakeholders, principles and practices.*

CHAPTER ONE

INTRODUCTION

1.1 Back Ground to the Study

Contract management is a very essential aspect if the intended goal of any construction project is to be achieved. According to Komakech (2020), inefficiency in contract management can cause substantial losses, thus low value for money. Effective infrastructure in education institutions on the other hand is very vital, as there is overwhelming proof that, in addition to other advantages, it promotes excellent learning, enhances student outcomes, and lowers dropout rates (Janssen, Jeremie and Gresham, 2017).

The United Nations Sustainable Development Goals (SDGs) number 4 provides that nations should ensure there is easy access to quality education for all by the year 2030 and this can be achieved by providing a conducive learning environment for all (Barret *et al.*, 2019). Countries are, therefore, trying hard to upgrade their education facilities to attain the SDGs. In Sub-Saharan Africa, approximately US\$30 billion will be needed by the year 2030 to overcome this challenge (Leathes *et al.*, 2015). Mathe *et al.* (2016) observed that low-income countries face the challenges of substandard education infrastructure that should be addressed to serve the learners population better.

At a 3.0% annual growth rate, Uganda's population, which is currently estimated to be 47 million, will increase to 71.4 million by 2040 (NPC, 2021). Consequent to this rapid population growth and high demand for education, learners' enrollment at all levels is forecasted to double by the year 2025 in comparison to earlier years (Mathe *et al.*, 2016).

In Uganda, policies to improve and achieve quality education commenced in the mid-'90s and throughout the 2000s, with the introduction of Universal Primary Education (UPE) in

1997, Universal Post Primary Education and Training (UPPET/USE) in 2007 and Universal Post 'O' Level Education and Training (UPOLET) in 2012. These policies aimed at increasing access to free and quality education for all Ugandans, reducing education inequalities and poverty to improve economic development and achieve prosperity for all (Bategeka and Okurut, 2006). This led to a high enrollment of learners in educational institutions. According to Tushabomwe-Kazooba and Mutabaruka (2017), primary school enrolment increased from approximately 2.5 million learners to 8.2 million learners in 2015 after the introduction of UPE.

This created a high demand for infrastructure in Uganda's education institutions and in 2001 a Construction Management Unit (CMU) in the Ministry of Education and Sports was created to manage the construction of infrastructure in all schools in the country. Accordingly, different construction programs and projects have since been undertaken by the government. These include; School Facilitation Grant (SFG), a US\$ 18 million per year (1998-2006) program that was launched to construct new buildings in primary schools and complete those that had been started by communities (parents) and government (Wokadala *et al.*, 2019), Adaptable Program Lending (APL₁), a US\$150 million project in support of the first phase of the Uganda post primary education and training program (UPPET) (Busingye and Nakayima, 2011), Uganda Teacher and School Effectiveness (UTSEP-GPE), a US\$100 million Project; part of which money was for construction of structures in primary schools (World Bank, 2020), Uganda Intergovernmental Fiscal Transfers (UgIFT), a US\$ 200 million for construction of 232 secondary schools and 285 health centers (MoFPED, 2020), Uganda Skills Development program (USDP), a 4-year (2017-2021) US\$100 million Program, 62.2% of which seeks to develop infrastructure in four technical colleges to become Centers of excellence (CoEs) and 12 public feeder Vocational Training

Institutes. Other programs include Secondary School Development Program, Emergency Construction Program, Presidential Pledges Program and many more. While some of these projects have been executed others are on-going.

Despite high investment in physical infrastructure in schools and institutions, the education sector still faces the challenge of poor quality and insufficient infrastructure like classrooms, laboratories, dormitories, sanitary facilities and teachers' houses due to poor construction project management (Mayeku, 2021). Mayeku (2021) indicated that the construction of structures in education institutions still faces the challenge of shoddy works that don't meet the required standards in addition to delays in project completion, leading to loss of government funds. He continues to indicate that more funds are usually allocated to evaluate, supervise and monitor education infrastructure projects but still, structures are of poor quality as compared to work where no funds are set aside for such activities. This, therefore, suggests that funds are not adequately put to use where the government undertakes construction work.

Similarly, Ntayi *et al.*, (2013) found that in Uganda, funds get wasted due to ineffective and inefficient structures, procedures and policies in which management is part of the leakages. Regulatory oversight on contract management in Uganda by the Public Procurement and Disposal of Public Assets Authority (PPDA), continuously shows that contract management is an area with a performance marked by poor delivery of services, uncompleted works, extended contract periods and corruption in the last ten years without proper justification (Muhwezi and Ahimbisibwe, 2018). This trend is threatening and if the situation does not improve, delivery of services and infrastructure development will remain poor amidst heavy annual budgets and expenditures.

Therefore, this study aimed at evaluating the effect of construction project management in the development of education infrastructure in Uganda. For depth of study and better analysis of variables, Mbale District Local Government was selected as a case study.

1.2 Statement of the Problem

In Uganda, particularly in Mbale District Local Government, despite significant public spending, the standard of infrastructure in academic institutions remains persistently poor. This is largely prevalent in Universal Primary Education (UPE) and Universal Secondary Education (USE) institutions (See summary of sample projects in Table 1.1) (Mbale District Local Government Education Report, 2022). Many of the education infrastructures such as buildings constructed since 2001 exhibit substandard quality, with a high rate of deterioration shortly after completion. Structural flaws (See Appendix 5) such as structural cracks, plaster peeling, and collapsed latrines are prevalent, leading to the abandonment of some structures or their inability to serve their intended purpose (Mayeku, 2021).

Whereas there is a presence of a large number of stakeholders responsible for overseeing project lifecycle stages, including initiation, implementation, supervision, and monitoring, there is widespread dissatisfaction with the quality of constructed facilities in Mbale District Local Government. This inefficiency in infrastructure development not only results in the misallocation of government funds but also compromises the long-term benefits and sustainability of educational investments. The continued state of poor education infrastructure poses a significant obstacle to achieving Sustainable Development Goals (SDGs) and inhibits national prosperity and economic growth.

Moreover, as many projects are donor-funded, failure to address this issue may jeopardize future donor support, intensifying the challenge of infrastructure inadequacy in the education sector and burdening future generations with the consequences of present neglect.

Therefore, there was an urgent need for research to understand the underlying causes of poor infrastructure quality in academic institutions and propose effective strategies to address this critical issue in Mbale District Local Government, ensuring that educational investments contribute to sustainable development and societal advancement in Uganda.

1.3 Research Objectives

1.3.1 Main Objective of the Study

The main objective of the study was to evaluate the impact of construction project management and stakeholder involvement on the development of education infrastructure in Mbale District Local Government.

1.3.2 Specific Objectives

Specific objectives of the study were;

- (i) To establish construction project management practices employed in the development of education infrastructure in Mbale District Local Government;
- (ii) To establish the impact of construction project management practices on the development of education infrastructure by Mbale District Local Government;
- (iii) To evaluate the role of stakeholders' involvement in the lifecycle of education infrastructure projects in Mbale District Local Government,
- (iv) To develop an appropriate methodology to improve the delivery of education infrastructure in Uganda

1.4 Research Questions

- i) What are the construction project management practices employed by Mbale District Local Government in the development of education infrastructure?
- ii) What is the impact of construction project management practices in the development of education infrastructure in Mbale District Local Government?
- iii) What is the role of stakeholder involvement in the lifecycles of education infrastructure projects in Mbale District Local Government?
- iv) What are the appropriate methods to improve the delivery of education infrastructure in Uganda?

1.5 Justification of the Study

Aware of the fact that good infrastructure enhances exceptional learning, improves student achievements, and reduces dropout rates (Janssen *et al.*, 2017), there is huge public spending on the construction of infrastructure in educational institutions in Uganda. For example; a UGX 1.4 trillion UGIFT program has been in place since fiscal year 2018/2019 to date, implemented by the Ugandan government in conjunction with the World Bank (Parliamentary Committee of Education Report, 2023). This money is for only the construction of facilities for lower secondary education in 117 seed schools and the upgrading of 331 health centre IIs to health center IIIs countrywide. The primary school sector, post-primary and tertiary institutions have incurred and continue to incur similar costs. Stakeholders, whose role is to supervise and ensure standards and value for money, consume part of the construction budgets. Despite the high investment, infrastructure in educational institutions has remained inadequate and of poor quality. The learning environment in these academic institutions has remained unattractive and thus public outcry. Classroom blocks become dilapidated after a few years (Mayeku, 2021). In other cases,

plaster has peeled off and structural fissures have formed in the floors and walls of new structures, suggesting a lack of value for money and therefore stagnation of economic growth and prosperity for citizens.

The research, therefore, was important to give a measure of the importance of efficient contract management concerning public education infrastructure development in Uganda and also a need to investigate this state of affairs to find a solution and reverse the status quo for current and future generations to benefit from government investment in education infrastructure.

1.6 Significance of the Study

The research will help district officials of Mbale Local Government and other practitioners to understand better the significance of construction project management on education infrastructure development. The research will also help to provide important inputs to construction project management for efficient and effective delivery of construction projects' goals. Study findings will be used as empirical literature for other researchers who may carry out related studies, especially on construction project management and education infrastructure development. Also, completion of this study, to the researcher, is important for partial fulfilment of the requirements for the award of a Master of Science degree in Construction Technology and Management of Kyambogo University.

1.7 Research Scope

1.7.1 Geographical scope

The study was conducted in Mbale district local government located in eastern Uganda and focused on education infrastructure development projects supervised by the district staff and monitors from MoE&S and MoFP&ED. Just like any other district in the country, Mbale

has very many governments aided schools and educational institutions that have benefited from government construction projects. The district currently has 130 government-aided primary schools (Ministry of Education and Sports, 2019) and 15 government-aided secondary schools (UNEB, 2022), among other educational institutions like technical institutes and medical schools. To better regulate education management, the government continues to take over control of the private schools in the district that are proliferating. The majority of these institutions, both old and new, lack the adequate infrastructure necessary for student's educational success. There is, therefore, a great need for the construction of new structures and renovation of the many existing but dilapidated buildings in schools in the district to take in the ever-growing numbers of learners. Despite the heavy capital investment, the learning environment in schools in the Mbale district still leaves a lot to be desired.

1.7.2 Content scope

The study was limited to construction project management as the independent variable and education infrastructure development as the dependent variable. The independent variable had three dimensions; contract management as a whole, service delivery practices and roles of stakeholders involved in project implementation. The dependent variable was based on three major indicators; quality of work, timely delivery of projects and stakeholder satisfaction. These indicators were prompted by the clear fact that some of the ongoing construction projects and the infrastructure already in existence in public educational institutions fall short of providing adequate learning environments necessary to attract attention and focus for both learners and their instructors. While some of the projects have stalled at different levels of construction and others take longer to be completed, some of those completed have exhibited shoddy quality hence public outcry. The study considered

construction projects that were executed in the past five years between financial years 2017/18 and 2022/2023

Table 1.1: Sample projects with issues related to research variables

School/Year	Project Scope & Contract Sum	Issue
Bubentsye Seed Secondary School	Construction of; <ul style="list-style-type: none"> • 3No 2-classroom blocks • 3 No twin teachers' Houses • 2No 5-stance VIP Latrine • 2-room laboratory block • ICT/Laboratory block • Multipurpose Hall • Football pitch • Furniture for all buildings above (Contract Sum = 2,063,273,250/=)	Due to a lack of capacity to execute big contracts, the project which commenced in May 2019 is not completed to date; suggesting a lack of technical and financial capacity of the contractor to execute big projects
Bubentsye Seed Secondary School	Construction of Retaining Walls (Contract Sum = 688,309558/=)	Despite the failure to complete the above project, the contractor was awarded more work at the same school; suggesting poor contract management practices
Butiru Demonstration primary school	Construction of; <ul style="list-style-type: none"> • 2No 5-stance VIP latrine • 1No 2-stance VIP latrine • Rehabilitation of 4 classrooms (Contract Sum = 218,132,663/=)	Many latrines were not the school's immediate need because there were functional existing ones. The need was more classrooms given the pupils' enrolment; suggesting a lack of end-user involvement at the planning stage
Primary schools of: Nasyera Lwabooba Bubenstye Naiku Busoba	Construction of a 5-stance VIP latrine block at each school (Contract Sum = 115,613,880)	<ul style="list-style-type: none"> • The 5 school sites were lotted to make one project/contract. • The contractor abandoned the sites at different levels and to date, no construction at any of the schools is completed, thus project failure. This suggests a lack of technical and financial capacity of the contractor to execute big projects and an indication that lotting is not a good practice

Source: District Engineer's Report. Mbale DLG, FY 2022/23

1.7.3 Time scope

The research was conducted in one year, starting with a research proposal in May 2022 up to when the dissertation was approved by my supervisors in June 2023.

1.8 Conceptual Framework of the Study

The conceptual framework was created to clearly show how the independent and dependent variables in this study relate to one another. The framework below relates the construction project management efficiency of Mbale District Local Government and the development of education infrastructure.

The framework suggests that effectiveness and efficiency in contract management greatly aid in the achievement of time, cost and quality performance expectations. The reverse of a poorly managed contract affects project performance negatively. However, the relationship may be affected by intervening variables of natural hazards, government and donor restrictions; although these variables are not examinable by the study.

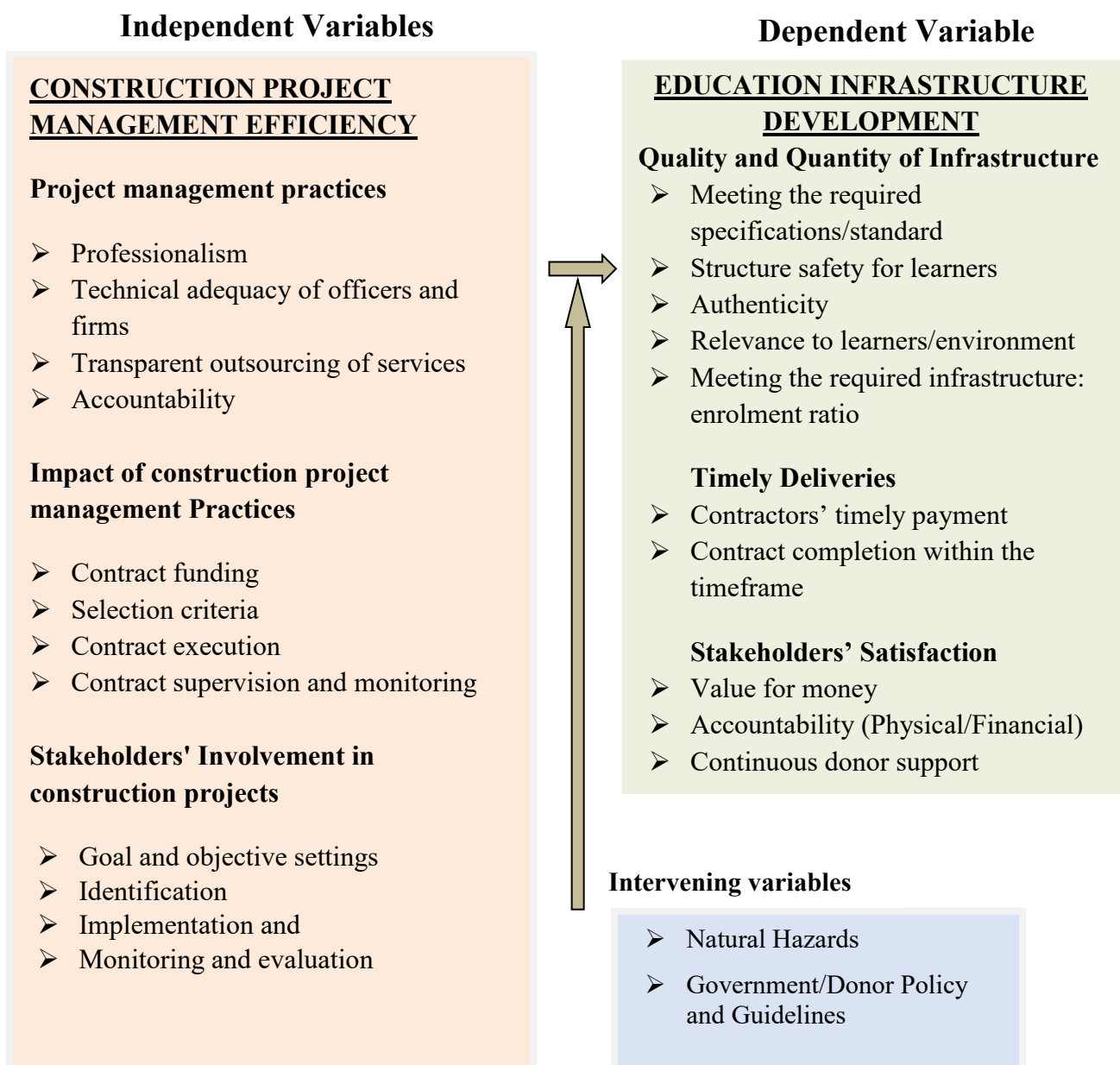


Figure 1.1: Conceptual Framework of the Study

1.10 Chapter Summary

This chapter introduced the topic and elaborates on who, what, where and how the research was conducted. The objectives of the study, the content aspects and the methods of how these objectives were achieved are all explained in this chapter. In addition, the chapter explains the justification and significance of conducting this research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature review is presented in this chapter in accordance with the research and it identifies and analyses issues concerning the problem of study. The literature sources include books, periodicals, journals and reports. While some of these sources are primary others are secondary. The chapter has both theoretical and literature reviews critiquing the views and ideas of different scholars on the effect of construction project management efficiency on education infrastructure development. The information was reviewed in accordance with study objectives and lessons learned and areas for improvement from the literature review are stated in the conclusion section of this chapter. In the theoretical review, the Principal-Agent theory guided the study.

2.2 Theoretical review

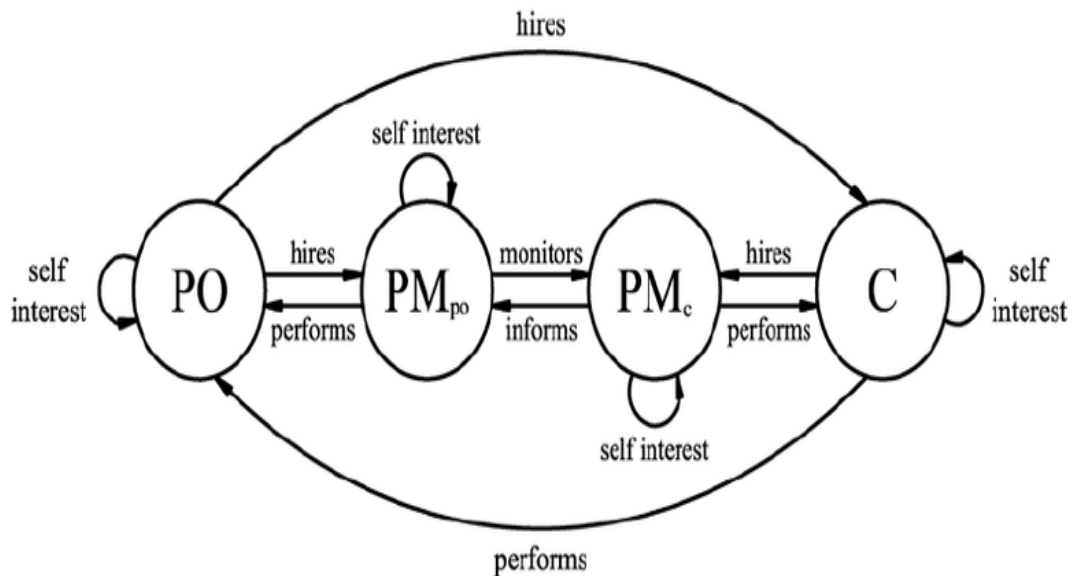


Figure 2.1: Principal-agent theory framework for construction projects

Source: Ceric, (2014)

Where;

PO is the project owner;

C is the contractor;

PM_{po} is the project manager hired by the project owner and

PM_c is the project manager hired by the contractor

This research was based on the Principal-Agent theory by Jensen and Meckling, (1976) that names the two parties involved in a transaction. In construction, the principal is the owner of the works that intends to arrange the delivery of products or services but lacks the required specialist expertise, abilities, or resources. The principal takes on an agent (contractor) to carry out construction tasks to complete the project and transfers some control to that party in the process (Jensen and Meckling, 1976). Both the client and the contracting firm in turn hire project managers and other representatives who are delegated to do most of the tasks. Altogether these can be called the four parties to a project (Ceric, 2014). According to the principal-agent theory, agents' actual decisions frequently differ from their stated intentions and the choices that optimize the principal's advantages and anticipated results, including quality. This discrepancy results from the fact that agents consider their self-interest while making decisions. The principal must implement strategies, measures, and rules that encourage the agent to behave properly (Jensen and Meckling, 1976).

This theory underpins the study, as it suggests, in the context of contracts for education infrastructure development works. Mbale District Local Government action on behalf of the government (principal) should exercise control over the Agents' (contractors) opportunistic behaviours. Using contract execution planning, the establishment of a contract supervision structure with well-defined responsibilities and roles, and the associated contract evaluation management are mechanisms that may be employed to ensure project performance.

However, the theory does not show the principal (MLG) and the agent's (Contractors) interest in the components that the principal noticed, which include ensuring effectiveness and efficiency, timely delivery and customer satisfaction.

2.3 Related literature

The related literature is reviewed chronologically based on the study objectives.

2.3.1 Contract management practices employed in the development of education infrastructure

Contract management plays a crucial role in the successful execution of construction projects, particularly in the development of education infrastructure. Effective contract management practices ensure that projects are delivered within budget, on schedule, and to the required quality standards. This literature review explores various aspects of contract management practices employed in the development of education infrastructure, focusing on their impact on project outcomes and overall effectiveness.

According to Komakech (2020), contract management is a pillar to guarantee that value-for-money and intended gains from the project are realized. A study by Waiswa (2018) showed that the performance of a project is related to the contract implementation procedures. Contract monitoring and controls positively relate to the performance of a project. In a similar view, Oluka and Basheka (2014) revealed that effective and proper contract management enhances work quality and reduces procurement costs, hence quality services, timely deliveries and cost-effectiveness, as three broad goals are achieved. They further found out that the effectiveness of contract management is determined by clear project definitions; accurate definitions of roles of parties to the agreement and contract management plans, roles of contract managers and supervisors, well-laid project processes

and appropriate communication methods for capturing important lessons from the contract management process.

According to Chathampilly (2012) promotion of transparency as a contract management practice encourages greater competition in public procurement and ensures that decision-makers can be held accountable. Therefore, before the start of the procurement process, governments should promptly make information about the method of the award and the selection criteria available and upon contract award, a thorough justification against the established criteria must be made.

Effective contract management is required to close any gaps that could endanger the success of construction projects, and additionally make certain that each contracting parties comply with their obligations (Gunduz and Elsherbeny, 2020). This suggests that an indication of inadequate contract administration is when parties to a contract fail to fulfil their contractual obligations. In contrast, inefficient construction management leads to inefficient construction operations.

Gunduz and Elsherbeny (2020) give a variety of domains that entail improper management of building contracts. Based on their research, bad construction project management could mean inadequate planning, ineffective coordination and communication, absence of systems, processes not understood, insufficiently qualified staff, undefined roles, insufficient training, and absence of performance evaluation matrices. Therefore, effective construction project administration necessitates using the aforementioned domains.

Successful contract management activities affect how quickly building projects move forward (Byaruhanga and Basheka, 2017). This is achievable because contractors can satisfy the requirements of their clients and perform the projects given to them within the

anticipated parameters. It is therefore crucial, for the success of any construction project, to hire qualified contract administrators. Several of the challenges faced in contract implementation and purchasing are where the award of contracts is given to unqualified contractors who neglect to oversee and assess jobs and have difficulties when administering contracts. Appraisal systems must therefore deal with limitations and inexperienced professionals that are placed in charge of construction projects to avoid managerial challenges.

Bartsiotas (2014) in a UN joint inspection report adds that most of the time, post-award contract management duties and tasks are not sufficiently allocated or specified in detail. However, a successful contract-management system depends on the explicit transferring of power and duty to those handling contracts after award. Lack of such delegation increases the likelihood of inefficiencies and lack of accountability. Byaruhanga and Basheka (2017) recommend the use of technologies that can evaluate contractors and their managers, as well as stringent compliance measures. This necessitates upholding the norms and guidelines specified in a contract, frequently conducting periodic evaluations of an existing contract to assess compliance with policies and procedures and looking for any deviations.

On communication during the implementation of construction contracts, (Oke *et al.*, 2016) found out that site meetings ensure that projects run well from the beginning to the end, to reduce disagreements that might postpone project completion.

Meanwhile, the major constraints are inadequate political commitment to oversee the progress of contracts, insufficient ability and absence of honesty. Furthermore, Njau and Omwenga (2019) in their study about the impact of project management techniques on the efficient execution of building development projects in Kenya, concluded that resource

allocation (financial, human, material and time resource planning), top management support, communication and monitoring, have a positive effect and significantly influence effective and successful execution of projects.

The success of projects within set goals is greatly influenced by effective and quality supervision. Inequality supervision leads to poor productivity of craftsmen and this causes cost and time overruns in projects (Emmanuel *et al.*, 2020). Nevertheless, the failure of a supervisor to arrange direct activity and dialogue with employees very well and sufficiently, greatly affects the quality of the construction product. According to Dalibi (2016), One of the main reasons for re-doing the work is inadequate supervision. It is therefore important to note that supervisors with experience and training have a big role in reducing the amount of work re-done during construction due to construction defects (Alwi, Hampson and Mohamed, 2001). Poor and inadequate supervision lead to defective buildings. This does not merely contribute to the escalation of the price of the building, but also for upkeep costs that might be significant.

Monitoring contractors' progress regularly is so important in the construction of education structures. The monitoring may differ, but a monitoring system must be present to maintain work quality and also record data for future use and reference (Komakech, 2020). This conforms with Oluka and Basheka (2014) study which found that a lack of regular follow-up lead to none compliance with the established deadline. Similarly, Musiimenta (2019) discovered a strong, positive significant correlation between monitoring/tracking and the effectiveness of procurement. He noted that value for money and internal customers' happiness attained with the purchase of health care, mostly depends on adequate collection of contract data plus reporting on contract performance. (Alzahrani, 2013) in his thesis on how attributes of contractors affect the performance of construction projects, concluded that

the financial, managerial, experience, and technical skills of contractors, among other qualities, have a significant impact on projects' success.

Doreen (2015) in a study on infrastructure projects in the education sector that use contract management: a specific instance of chosen secondary schools in the central area, revealed that building performance is defined in three areas to explain infrastructure developments in the educational sector and these are a program, infrastructure, and workforce. Infrastructure should have the ability to perform well by default once construction project management is well handled. This includes making sure that structures are weatherproof, stable in construction, possess low operational costs, and are effective in both space and resources. Infrastructure must successfully accommodate the activities that it is necessary to support. For illustration, the present curriculum and the chosen teaching and learning methods should be well accommodated in school structures. The environment should be comfortable for users, wholesome and effective and ought to fulfil users' fundamental requirements. Additionally, it should ensure that human rights are upheld.

Since contracts do not enforce themselves, contract management is crucial to resolving disputes promptly (Linsley, 2020), decreasing conflicts (Abotaleb, 2018) controlling changes (Islam *et al.*, 2019), reconciling any ambiguities or contradictions between the various contract documents (Hamie and Abdul-Malak, 2018), maintain the rights of entities (Oluka and Basheka, 2014) and minimize hazards (Joyce, 2014). In addition, it's critical to keep an eye on and manage contract execution, addressing issues unique to the construction sector, guaranteeing that the project's goals are met and that the project is being followed, roles and responsibilities are managed and the main stakeholders' financial, social-political and other interests are protected.

In conclusion, effective contract management practices are essential for achieving successful outcomes in the development of education infrastructure. By focusing on transparent procurement processes, clear contract negotiations, stakeholder engagement, and proactive risk management, project stakeholders can enhance project quality, control costs, and ensure timely delivery of infrastructure projects. However, addressing challenges such as legal compliance, communication barriers, and risk mitigation requires proactive measures and collaborative efforts from all parties involved.

2.3.2 The impact of construction contract practices on the development of education infrastructure

The development of education infrastructure is crucial for fostering societal progress and economic growth, with construction contract practices playing a pivotal role in shaping the outcomes of infrastructure projects. This study explores various literature review on the impact of construction contract practices on the development of education infrastructure, drawing insights from existing research and scholarly discourse.

Effective construction contract practices encompass mechanisms for quality assurance and compliance with regulatory standards. Research by Smith et al. (2019) emphasizes the importance of incorporating stringent quality control measures within construction contracts to ensure the delivery of durable and safe infrastructure facilities. Compliance with building codes and regulatory requirements is essential for mitigating risks and safeguarding the long-term viability of education infrastructure projects (Jones, 2018).

Time is one of the resources in construction where the focus must be put. Schedulers aim to ensure the successful completion of projects within the estimated time frame, which will boost the contractor's reputation and enable the client to earn revenue from the project

(Nouban and Ghaboun, 2017). Thus, to avoid delays and complete the project on schedule, within budget, and with the expected level of quality, proper scheduling of construction projects is an essential component of construction management.

Value-for-money will not be realized if accountability systems are weak. Delivering services effectively is all about providing services that are in line with the most effective and efficient ways to meet users' needs. Van Doeveren (2011) identifies a convergence of common ideas as good governance, these being rule of law, participation, transparency and openness, efficiency, effectiveness and accountability. Effective, productive and well-functioning public services are essential factors for good governance (Mdee and Thorley, 2016).

On the other hand, 'bad' governance is full of random decision-making, unaccountable government agencies and unfair legal frameworks, the misuse of executive authority and uninvolved civil society and pervasive corruption (Gisselquist, 2012). Even in situations where institutional capacity is severely constrained, this notion of good governance has led to the creation of policies based on these fundamental principles (Booth, 2012). Khahro *et al* (2023) revealed that delays in making decisions offer a significant barrier to building initiatives. Lack of technical expertise, incomplete paperwork, bad leadership, coordination and communication problems have an impact on the early decision-making process.

Regarding social responsibility, citizens may sometimes struggle to hold duty-bearers accountable since they are unsure of the services they should receive. Additionally, social conventions and patronage links prohibit people from holding leaders accountable. Understanding where accountability lies in practice as opposed to theory consequently requires examining power structures and the political system of a nation (Booth, 2012).

According to Booth (2012), mobilizing civil society with aid money is insufficient for accountability to have any real impact on local social institutions.

The unfolding of Local Economic Development (LED) as one of the foundational elements of de-centralization, necessitates the facilitation, preparation, and adaptation of District Local Government Development Plans to align them with the National Development Plan and the aspirations of the country as outlined in the National Vision 2040, thus achieving harmony between top-down and bottom-up planning approaches (NPA, 2014).

Strategic and comprehensive partnerships between various entities that provide services are necessary for the successful development of infrastructure (Development Bank of South Africa, 2023). Therefore, it is crucial to facilitate and coordinate the development of public infrastructure, which is crucial for a country's economy or social stability. Public infrastructure needs to be planned in a way that makes it easier to manage it throughout its life cycle. The development of infrastructure is dependent on a wide range of other elements, including land acquisition, geography location, architectural considerations, management of risks, project costs, environmental issues and more.

Thus, Local Governments have a critical duty in contextualizing national imperatives and aligning them to the specificities of each province and integrating with the local government sphere. Departments are accountable for social systems such as health, social development and education; economic activities including roads and transport as well as agriculture (Komakech, 2020).

The local government's responsibility is to deliver government infrastructure and its maintenance; education institutions inclusive (National Treasury, 2014). On the other hand, internal political conflicts in local governments have a detrimental effect on the provision

of services (Dlamini, 2017). Service delivery suffers when internal disputes take primacy; delays in providing services are caused by the time spent attempting to settle disputes. On the other hand, Kabatwairwe (2023), while delivering a keynote at the first private sector ant-corruption conference in Kampala, said that corruption is the biggest threat to infrastructure development and it occurs throughout the project delivery process, from tendering process through up to contract management.

In summary, construction contract practices exert a significant influence on the development of education infrastructure by shaping project governance, risk management, stakeholder engagement, and financial accountability. By implementing robust contractual arrangements that prioritize transparency, stakeholder involvement, and risk mitigation, policymakers and project stakeholders can enhance the efficiency and effectiveness of education infrastructure development initiatives, ultimately contributing to societal advancement and sustainable development.

2.3.3 The role of stakeholders' involvement in the lifecycle of education infrastructure projects

Education infrastructure projects play a vital role in shaping the quality of education and facilitating socio-economic development. Effective management and involvement of stakeholders throughout the project lifecycle are critical factors that influence the success and sustainability of these projects. This literature review explored the significance of stakeholders' involvement at various stages of education infrastructure projects and its impact on project outcomes. In education infrastructure development, various stakeholders play crucial roles throughout the project lifecycle. These stakeholders can include government entities, educational institutions, community members, architects, engineers, contractors, suppliers, and students. Each stakeholder has specific responsibilities and

contributions that impact the successful planning, design, construction, and operation of education infrastructure.

Stakeholder theory posits that organizations should consider the interests and expectations of all stakeholders affected by their actions (Freeman, 1984). In the context of education infrastructure projects, stakeholders encompass a diverse range of individuals and entities, including government agencies, educational institutions, local communities, contractors, donors, and end-users. Effective engagement and collaboration with these stakeholders are essential for ensuring project alignment with community needs, regulatory requirements, and sustainability goals.

At the initial stages of education infrastructure projects, stakeholder involvement is crucial for conducting comprehensive needs assessments, defining project objectives, and establishing realistic timelines and budgets (Reed & Renn, 2008). Engaging stakeholders allows project planners to gather valuable insights, identify potential challenges, and build consensus around project goals and priorities. Moreover, involving end-users and community representatives in the planning process helps ensure that infrastructure solutions are culturally appropriate, accessible, and responsive to local needs.

During the implementation phase, ongoing stakeholder engagement is essential for effective project oversight, risk management, and quality control (Bryson et al., 2014). Stakeholders, including government agencies, project sponsors, and contractors, must collaborate closely to monitor progress, address emerging issues, and adapt project strategies as needed. Transparent communication channels and regular stakeholder consultations facilitate timely decision-making, promote accountability, and mitigate conflicts that may arise during construction activities.

The monitoring and evaluation phase provides an opportunity to assess the effectiveness of stakeholder engagement strategies and measure project performance against established objectives (Susskind & Cruikshank, 1987). Stakeholders' feedback and input are valuable for evaluating the impact of infrastructure investments on educational outcomes, community development, and resource utilization. Additionally, conducting post-project evaluations allows stakeholders to identify lessons learned, best practices, and areas for improvement in future project initiatives.

The government utilizes different departments of the state as essential tools to render effective services to the public (CIDB, 2016). Mimba *et al.*, (2007) stated that the public sector boasts a broad selection of stakeholders in education infrastructure project life, with every stakeholder possessing their benefits and welfare or interests, eliciting the imposition of different expectations upon the life cycle of the project.

The constitution, which gives roles to each domain of government through the process of inter-governmental relations, provides for delegations, or responsibility for significant elements of the delivery of public sector infrastructure (Gulam, 2018).

Stakeholder management practices of identification, assessment and engagement are vital for project performance. She *et al.*(2018) attribute project performance to efforts to boost contractor input performance using a performance management framework where responsible project stakeholders monitor the project performance at their level. Raslim and Mustaffa (2017) reflected project performance to a procurement relationship-based approach with improved communication, commitment, and connections between project participants.

Participation by the public is embraced, in several nations, to promote, facilitate and enhance public involvement in governance procedures. As stated by Khan *et al.*, (2018), globally, stakeholders' involvement is regarded as one of the key success criteria in any given major construction or infrastructure project. For example, in the constitution of Kenya (2010), public participation is guaranteed by the constitution. Furthermore, in compliance with the County Governments Act 2012, and section 126 of the Public Finance Management Act (2012), Kenya's county governments are obliged to include members of the public and other project-affected persons in the development of projects by getting their opinions and incorporating them into the decision-making process. Similarly, Uganda enacted the Public Participation Act to support the demand for the involvement of stakeholders which claims that "this Act's main goal is to improve, promote, advance, and equip the public to participate in processes of governance (ISER, 2018).

After the initiation and preliminary stage, the project planning phase starts and this is the phase where the whole project is planned. This phase requires that stakeholders fully participate and it includes definitions of the scope, and objectives as well as developing a series of actions necessary to achieve the said objective. In line with Williams (1999), Planning primarily develops a collection of crucial guidelines to communicate to the project team the precise course of action(s), the timing for the activities to be implemented, and the resources needed to achieve successful completion of the project's deliverables, and finally, establish a timeline for allocating the resources. Cheng *et al.*, (2010) affirm that when developing a project phase, tasks are spelt out, predicted finished product(s) well-organized and especially the methods of the tasks are need to be completed are established.

Additionally, time is estimated, required resources are formed, and a structure for managerial oversight and control was given. This establishes the connection between

stakeholder involvement and project planning, hence defining stakeholder participation in project planning and design as the predictor variable of this study. The increase in stakeholder involvement in building initiatives for educational infrastructure is still quite low and impoverished despite being essential to the completion of initiatives. Several concerns with project planning like planning for resources, budgeting, scoping and planning, are well-established in the international and Ugandan contexts, demonstrating that participation by stakeholders must be enhanced at the project planning stage (Ndegwa *et al.*, 2017; Onyango *et al.*, 2017; Awini, 2018; Mandala, 2018; Ochieng and Sakwa, 2018). A more observance is that unless all participants in the process of planning realize precisely what the project is expected to deliver, the planning may not be successful (Aje, 2012).

Various responsibilities for stakeholders are played as a project develops; (Mitchell, Agle and Wood, 1997) provide an approach that seeks to show how the qualities of strength, validity, and urgency account for the weight managers give stakeholders' requests (Miragaia, Ferreira and Carreira, 2011). As a bonus, Nguyen and Menzies (2010) contend that interactions between an institution and its stakeholders can be used to effectively evaluate how well it is performing. All of these researches support the significance of involving stakeholders in organizations' project accomplishment. Buertey *et al.*,(2016) study on project implementation and stakeholders' management in Ghana, shows that a lack of background explanation to the stakeholders, on the technical and material justification before project initiation, affects project performance. They recommended that for a project to be completed on time, without compromising quality, stakeholders should engage themselves early in project implementation so that project success can be achieved. This will make sure value for money is obtained, and costs are cut down in the long run.

Due to their potential to directly or indirectly affect the success and development of the project, stakeholders are crucial to consider. They are both interested in and concerned about the organization so that success can be achieved (Kamassi *et al.* 2020). Additionally, stakeholders either directly add value to the project or are direct beneficiaries of the project's results (Usmani, 2019). It is necessary to use effective stakeholder management techniques and ensure that everyone's communication needs are met to guarantee their cooperation and affiliation which raises the likelihood that a project will succeed.

The part of primary stakeholders continues throughout the project's full life, while knowledge, inputs, techniques, and making of decisions may vary, the project's goals and objectives are consistently prioritized. All across a life cycle, Project stakeholder management creates a huge success gap. Consequently, the success of each project depends heavily on its stakeholders (Gifford and Lesser, 2016). Stakeholders, therefore, have high standards for the project's outcome to meet all of its goals.

It is important to fulfil each stakeholder's needs and forge a strong connection, establishing communication systems, developing trust, and earning the respect of the main parties will be essential for making sure the project succeeds (Gifford and Lesser, 2016). The need of involving all parties is paramount. A project depends on the dedication of all parties involved and effective interaction with integrality and exchanging concepts and knowledge (Todorović *et al.*, 2015). This will better transmission paths, risk mitigation, money saving, and establishing specifications. Further, it will allow project monitoring from the gathering of information to fulfil the project schedule, and financial constraints, giving criticism plus inputs to guarantee the advancement and success of the

project. This makes it a strict process to deconstruct the project scope within the project in a hierarchy and a methodical guide to project planning phases. It is possible to separate each work from the others. This aids in establishing the project's roles, responsibilities, and accountability for particular people or groups. WBS method splits the finished project into independent duties to ensure safety on the characters' clarity and breadth and boosts effectiveness plus efficiency. Understanding interfaces is helpful as well as dependencies for priorities depending on work (Sutrisna *et al.*, 2018). It aids in figuring out the period and determination necessary to carry out the assignment using conception, all of which lead to infrastructure delivery.

Project initiation, management and implementation may benefit from the input of stakeholders. Without them, project success and progress are not feasible since they have a substantial impact on the project's resources, specifications and budgeting (Dwivedi and Dwivedi, 2021). Establishing enduring relationships with stakeholders in the project, guaranteeing client satisfaction and establishing moral character, causes the organizations to expand hence achieving stakeholders' expectations. As a project develops, effective change management is enhanced by stakeholders' involvement (Dwivedi and Dwivedi, 2021).

Empowering stakeholders increases their capacity and assurance to choose wisely and with knowledge (Kalu and Rugami, 2021). Building positive relationships with the project stakeholders is made easier by effective communication whereas the effective handling of complaints can help projects run more smoothly, give people a way to voice their concerns and encourage collaboration for the benefit of project implementation. Therefore, it is necessary to empower stakeholders by letting them participate in the process of making decisions by increasing their level of control over their work environment and giving them

a greater say over tasks. (Aurangzeab Butt, Marja Naaranoja, 20016) established the influence of a project change stakeholder consultation for effective project execution. The findings highlight the notion that through cooperation and empowerment, effective communication facilitates stakeholder participation in the change management processes.

Taleb *et al.*, (2017) established that management responsibilities in project communication among stakeholders are vital in enhancing the efficiency of building construction projects. According to the researchers, there should be a substantial understanding of the significance of project communication and its importance to the construction sector. Undoubtedly, there are many levels and routes of contact that have become ingrained in the client-consultant or contractor-consultant relationship.

Kituku, (2015) study on the impact of conflict settlement methods on the implementation of projects, established that conflict management affects how projects are carried out. Jointly tackling issues with all project participants was discovered to be the most popular tactic of conflict resolution that allows a project to accomplish its goals.

Jørgensen, (2018) also established that effective construction project practices help control costs throughout the project lifecycle. Clear contract terms, including pricing mechanisms, payment schedules, and change order procedures, ensure transparency and accountability in financial matters. This helps prevent cost overruns and enables better financial planning for educational institutions.

Naaranoja and Savolainen`1 (2016) further noted that Construction contracts establish project timelines and milestones, ensuring that the education infrastructure project progresses according to the planned schedule. Contract provisions related to penalties for delays and incentives for early completion incentivize contractors to adhere to the agreed-

upon timelines. This promotes timely project delivery, allowing educational institutions to benefit from the infrastructure within the expected time frame.

Construction project practices incorporate quality assurance mechanisms to ensure that the education infrastructure meets specified standards and requirements. Contract documents outline technical specifications, materials, and workmanship standards, enabling educational institutions to maintain high-quality facilities that provide a conducive learning environment. Inspections, testing, and performance monitoring provisions within contracts help verify compliance with quality standards (Kalu and Rugami, 2021).

Construction contracts address risk allocation and mitigation strategies. Provisions related to insurance, liability, warranties, and dispute resolution help manage potential risks and uncertainties. By clearly defining responsibilities and risk-sharing mechanisms, construction contracts help protect educational institutions from unexpected costs and disputes, ensuring a more secure development process.

Compliance with Regulations and Standards: Construction contracts incorporate legal and regulatory requirements specific to education infrastructure. These may include building codes, accessibility standards, safety regulations, and environmental guidelines. By incorporating compliance obligations into contracts, educational institutions ensure that their infrastructure aligns with legal and industry standards.

World Bank (2018) noted that Construction contracts foster collaboration and communication among stakeholders involved in the project. By defining roles, responsibilities, and communication protocols, contracts facilitate effective coordination between educational institutions, contractors, architects, engineers, and other parties. This

promotes transparency, minimizes misunderstandings, and enables efficient decision-making throughout the project.

Construction contracts include dispute resolution mechanisms that help resolve conflicts efficiently. Mediation, arbitration, or other alternative dispute resolution methods specified in the contract can prevent delays and costly litigation. Well-defined dispute resolution provisions promote fair and timely resolution of issues, allowing the project to proceed without significant interruptions.

According to the World Bank (2018), Construction contracts address long-term maintenance and operation responsibilities. By including provisions related to warranties, guarantees, and maintenance agreements, educational institutions can ensure the durability and sustainability of their infrastructure. Proper maintenance practices, outlined in the contract, contribute to the longevity and functionality of the education facilities.

Effective construction project practices establish a solid foundation for the successful development of education infrastructure. They contribute to cost control, timely completion, quality assurance, risk management, compliance, collaboration, and long-term maintenance. By employing best practices in construction contracting, educational institutions can optimize their investments and provide students and educators with safe, functional, and inspiring learning environments.

In conclusion, Stakeholder involvement is essential for the successful planning, implementation, and sustainability of education infrastructure projects. By engaging stakeholders effectively, project planners and implementers can harness local knowledge, leverage resources, and build consensus, leading to more inclusive, responsive, and sustainable infrastructure solutions that meet the needs of communities and contribute to

broader development objectives. However, to realize the full potential of stakeholder involvement, it is crucial to address challenges, adopt best practices, and foster a culture of collaboration, transparency, and accountability in education infrastructure project management

2.3.4 Appropriate methodology to improve the delivery of education infrastructure

The provision of adequate education infrastructure is crucial for fostering quality learning environments and ensuring equitable access to education. However, the delivery of education infrastructure often faces various challenges, including budget constraints, resource limitations, and inefficiencies in project management. To address these challenges and enhance the delivery of education infrastructure, researchers and practitioners have explored different methodologies and approaches. This literature review examined the existing literature on appropriate methodologies to improve the delivery of education infrastructure, focusing on key strategies and best practices.

To enhance the education infrastructure service delivery, the government ought to increase funds allocated to the education sector. In support of this, Ahumuza (2022) revealed that the government has allocated an additional Shs 806 billion under the Ministry of Education and Sports to cater for key infrastructure development between the financial years 2019 /2020 and 2023/2024. The developments include the construction of 259 seed secondary schools fully equipped with ICT and science laboratories, construction of infrastructure in 21 technical schools and polytechnics, rehabilitation of dilapidated infrastructure in government secondary schools and support to the development of Teachers Effectiveness and Learner Achievements (TeLA) system and the e-inspection system.

The World Bank agreed to release \$425 million in June 2020 to finance infrastructure provision in East and Southern Africa of which education infrastructure is inclusive. The major goal of the Project expansion was to finance and strengthen the infrastructural development plus the social sector (World Bank, 2020). These regions face the challenge of poor infrastructure, majorly in the education sector. Heavy public financing of infrastructure within the region, led to a rise in debt vulnerabilities and before the COVID-19 outbreak, most countries were in debt distress making it hard for them to finance infrastructural development in the education sector (World Bank, 2020). Similarly, Rugaba (2022) reveals that several countries in Sub-Saharan Africa experience huge infrastructure gaps in the education sector, the major challenge is resource mobilization for repair and maintenance.

Public-private partnerships (PPPs) have emerged as a promising methodology for leveraging private sector expertise and resources to improve the delivery of education infrastructure. Studies by Gopalakrishnan and Mander (2018) and Zhang et al. (2020) demonstrate how PPPs can facilitate innovative financing mechanisms, expedite project implementation, and enhance the quality of infrastructure assets. By engaging private sector partners in design, construction, and maintenance, PPPs enable governments to overcome funding constraints and deliver infrastructure projects more efficiently. According to World Bank (2022), PPPs enable the state and its entities to carry out feasible projects as per the overall financial limitations of the government. To ensure successful service delivery, this should be taken into careful consideration. Mohdt, Jawahirt, Tant, Rahimtand Tant (2022) indicate that Malaysia's funding structure can have detrimental effects on the means health services are delivered through PPPs.

The integration of technology and innovation into the project delivery process is increasingly recognized as a critical methodology for enhancing the efficiency and

effectiveness of education infrastructure development. Studies by Wang et al. (2019) and Li et al. (2021) explore the application of Building Information Modeling (BIM), Geographic Information Systems (GIS), and other digital tools to streamline design, construction, and maintenance activities. By leveraging advanced technologies, project teams can improve communication, mitigate risks, and optimize resource utilization, ultimately leading to better project outcomes and long-term sustainability.

One commonly recommended methodology for improving the delivery of education infrastructure is the adoption of an integrated project management approach. This approach emphasizes comprehensive planning, coordination, and collaboration among stakeholders throughout the project lifecycle. Although monitoring may differ, monitoring systems must be in place to maintain quality standards of education infrastructures and also data should be recorded for future reference and use (Komakech, 2020). The constructed infrastructures also must meet service quality levels as specified in bidding to foster effective monitoring of the operation of the infrastructures (Musiimenta, 2019). Research by Smith et al. (2019) highlights the benefits of integrating project management practices such as stakeholder engagement, risk management, and performance monitoring to ensure the timely and cost-effective delivery of education infrastructure projects. By adopting an integrated approach, project teams can streamline processes, minimize delays, and enhance overall project outcomes.

Capacity building and institutional strengthening are essential methodologies for building the requisite skills, knowledge, and organizational capacity to deliver education infrastructure effectively. Research by Menon and Pradhan (2018) and Kigera and Wang (2020) emphasize the importance of investing in professional development, training, and institutional reforms to enhance project management capabilities and governance

frameworks. By cultivating a culture of continuous learning and improvement, capacity-building methodologies enable governments and stakeholders to overcome challenges and adapt to evolving infrastructure demands.

Boateng (2014) asserts that for government schools to be technically efficient, several support services should be put in place like; timely remittance to schools of funds, ensuring that money from the government reaches exact end users, scheduling regular school supervision visits and ensuring accountability of schools through publication and regularly audit of their accounts. In response, the Ugandan government has partnered with different private actors to improve infrastructure in the country to provide quality education services to the public (Kyagulanyi and Tumwebaze, 2019). However, despite all these tireless efforts Uganda has failed to attain efficiency in the education sector due to several challenges surrounding the education sector not limited to corruption and inadequate monitoring of the ongoing and completed projects.

In summary, improving the delivery of education infrastructure requires the adoption of appropriate methodologies that address the unique challenges and complexities of infrastructure development. Integrated project management approaches, public-private partnerships, community engagement, technology integration, and capacity building are among the key methodologies identified in the literature. By leveraging these methodologies and implementing best practices, governments and stakeholders can enhance the efficiency, effectiveness, and sustainability of education infrastructure projects, ultimately contributing to improved educational outcomes and societal development. Further research and practical interventions are needed to refine and tailor these methodologies to specific contexts and ensure their successful implementation in diverse settings.

2.4 Chapter Summary

Based on the views and ideas of different scholars, the focus is mainly on the performance of projects influenced by inputs such as supervision, contract outsourcing, monitoring, funding, stakeholder involvement and many others. However, the reviewed literature shows the body of knowledge that is narrow regarding the connection between construction project administration and infrastructure development. This inconclusive position has created knowledge and literature gaps that will be addressed by this study.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter discusses the design of the research, population of the study, determination of the sample size, techniques for sampling and procedures, methods of collecting data, tools for data collection, truthfulness and dependability, data gathering process, data evaluation, measurement of variables and research constraints.

3.2 Research Design

A research design integrates several aspects of the research in a strategic, logical and cogent manner, to efficiently handle the research issues (Dawadi, Shrestha and Giri, 2021). According to Kothari (2004), the design also provides an appropriate defense against prejudice and improves dependability. Different designs are adopted for different types of research. The cross-sectional study design is a type of design where data from many respondents is collected at once at the same time, allowing for the survey of multiple variables simultaneously. The method is quick to conduct and therefore saves time and resources (Thomas, 2022). Other designs include longitudinal study designs and case and experimental studies. According to (Caruana et al., 2015), longitudinal study design aims at establishing the cause-and-effect relationship where the same participants are repeatedly surveyed for data over a period of time, concentrating most frequently on a smaller group of people who share a characteristic (Thomas, 2022). This study can take years or even decades. Whereas case studies focus on gaining a holistic and in-depth understanding of a specific subject like a group of people, a person, an organisation, or a phenomenon, for purposes of description, comparison and evaluation of a research problem, experimental research designs are mainly used to test casual relationships (Harling, 2012). Experimental

research design is a type where one or more independent variables are changed and then applied to one or more dependent variables to ascertain how they affect the former, and the researcher makes an effort to keep all variables that could have an impact on the outcome of the experiment under strict control (Zubair, 2022).

Therefore, given the objectives of this research, the Cross-Sectional design was appropriate, disqualifying other research designs.

3.3 Research Approach

The study used a mixed research approach that combines quantitative and qualitative methods, using both kinds of data in one investigation. This enabled the researcher to strengthen the connection between quantitative and qualitative research methodologies and also made it possible to comprehend the phenomenon under study (Daniel, 2016).

While the quantitative technique benefited in measuring various sorts of variables and depicts frequencies, averages, correlations, and regressions, the qualitative approach assisted in acquiring a thorough understanding of a particular setting.

3.4 Study Population

The study was conducted in Mbale District Local Government located in Eastern Uganda. 46 schools were considered in the study from which data was to be collected from the school administrators. The research used a population of 150 which constituted key actors, focusing on those who have participated in construction project management in Mbale District and were able to offer the required information. These included the district head of departments, political administrators (district council and LC3 Chairpersons), head teachers of beneficiary schools in the last five years and managers of contracting firms.

3.5 Determination of the Size of the Sample and Respondent Selection

A sample refers to a portion of a population. Sampling refers to the choice of an adequate amount of components from the study population where its qualities can enable the researcher to broaden such qualities to population components (Sekaran and Bougie, 2011).

The investigation utilized a sample size of 108 respondents that was arrived at using Krejcie and Morgan (1970) sample size table (see Appendix IV). The target population for this sample was 150 key actors in the field of the construction of education infrastructure.

Table 3.1: Sample Size Selection and Determination

Category of respondents	Target population (s)	Sample (n)	Sampling technique
District Heads of Department	11	8	Simple random sampling
LC3 Chairpersons	19	14	Simple random sampling
School construction Supervisors (MoE&S/DLG)	53	38	Simple random sampling
School administrators	46	33	Purposive
Contract managers (contractors)	21	15	Purposive
Total	P=150	N=108	

3.6 Sampling Techniques and Procedures

Purposive sampling was utilized and it involved the process of identifying and selecting key informants that were well familiar with the subject of interest. A specific sample from the study population was considered as a key informant to provide in-depth information for this study. Key informants focused on contract managers and technical officers. This sampling technique was substantial because the researcher saved time, and costs and got a dependable source of information since the respondents were at the centre of implementing education projects.

With a simple random sample, each participant had a separate and equal chance of being selected (Alvi, 2016). The method was used to select especially political leaders, who got involved in this research. The respondents were randomly chosen until the number was attained (Mugenda & Mugenda, 2003). The method allows each respondent to have an independent and equal opportunity for selection thereby reducing bias.

3.7 Data Collection Methods

Secondary and primary data sourcing was employed. A self-administered survey was created from the constructs of construction project management and attributes of education infrastructure development. This was administered to all the study respondents. Secondary data were acquired by reviewing documents like the Mbale local government's annual reports, academic thesis, journal articles, and magazines among others as they may be available to aid inform on existing strengths and gaps of constructs of construction project management and attributes of education infrastructure development (Mugenda and Mugenda, 2003).

3.7.1 Document Review

As stated by Marcinkevage, (2020), a documentary review is a way that makes data collection easier by examining or analyzing previously published reports and documents having data that was originally intended for other purposes, getting data from documents and reports which was deemed pertinent for the study. Document review in this study encompassed reviewing of the existing documents which included calls for quarterly reports, monitoring reports, interim payment certificates, correspondences between Mbale District Local government and MoE&S, invitation letters to site meetings, projects guidelines, minutes of site meetings and the invitation to tenders. These helped to obtain secondary data on construction project management in the district. This method was used to

supplement data collection methods in understanding how construction project management influences the education infrastructural development of MDLG.

3.7.2 Questionnaire Method

Questions that were easily understandable and answerable, which could describe the intended practices relating to construction project management and education infrastructure development were formulated to gather primary data from all the randomly particular respondents. A questionnaire was used since it was cheaper for the data collection process (McNabb, 2020) and a lot of information was collected within a short amount of time from MDLG.

3.7.3 Interviews

Barifaijo, Basheka and Oonyu (2010) defined interviews as fact-finding dialogues expressed in the form of verbal questions. The interview technique permitted obtaining in-depth descriptions of the views of interviewees in a highly elaborate contextual setting through face-to-face interviews. In using the interview method, the researcher interviewed respondents who have been purposively selected (Creswell, 2016). Interviews were conducted because they are effective, easily adapted and encouraged to investigate and obtain deeper information or insights on the researcher's part. Direct contact interviews were used between interviewer and interviewee to obtain in-depth qualitative data on the study.

3.8 Data Collection Instruments

Two tools for studies were used to gather primary data; a questionnaire and interview guide while documents obtained from the district were employed to gather secondary data. The three tools are the common data-gathering instruments in research surveys (Kothari, 2004).

3.8.1 Document Checklist

A document review matrix was utilised to gather pertinent information from secondary sources concerning the study problem. Data was collected from reports, contract reports and annual reports of MDLG.

3.8.2 Questionnaire

The questionnaire used to collect data was close-ended where respondents were required to answer questions by indicating their level of agreement or disagreement with specific statements, in a 5 pointer Likert Scale. The instrument was used since it is time-saving and allows quick interpretation of results and easy drawing of conclusions and reports.

The tool consisted of five sections. Section A contained general information about the respondent, Section B construction project management practices on education infrastructure development, Section C education infrastructure development and projects performance, and Section D level of education infrastructure development of Mbale District local government. Although the study required some confidentiality, participants responded voluntarily since they could complete the surveys administered in complete secrecy and with little supervision. Consequently, the technique produced comprehensive, largely reliable information from many respondents within a short period of time and at a low cost.

3.8.3 Interview Guide

There were interviews with select groups of individuals, particularly the managers, supervisors and contractors of the education infrastructure of MDLG. An interview guide to direct the interviewer was applied throughout the interviewing process to guarantee the quality and uniformity of the information given. The interview guide permitted asking follow-up questions in addition to the pre-planned ones to extract thorough and accurate

information. This helped in delving further into the problems being looked into (Kothari, 2004).

3.9 Instruments Reliability and Validity

3.9.1 Reliability

Reliability is how much a piece of equipment for study produces reliable outcomes or data following several successive tests (Mugenda and Mugenda, 2003). The validity of the instrument was affirmed based on the pilot study's initial findings. The research tools underwent testing on 10 respondents involved in the construction of the education infrastructure of Budaka District Local Government. The results of the pilot were entered in statistical packages for Social Scientists (SPSS) Version 20 and a reliability analysis was run to measure the questionnaire's reliability using Cronbach's Alpha. The average Cronbach's Alpha coefficient was 0.895 which was > 0.7 , indicating the questionnaire was reliable

3.9.2 Validity

Validity is defined as the ability of study findings to agree with the theoretical and conceptual values of the investigation (Mugenda and Mugenda, 2003). In other words, validity measures how much measurements made by instruments are in line with their intended use. According to Gay (1996), a study tool's credibility is improved based on recommendations from experts. Validity was, therefore, ascertained by discussion of the interrogative and oral guide collaborating on drafts with the supervisor and colleagues doing research. The content given by respondents was checked against the study objectives and rated based on a Likert scale of (1-5) where (5 is strongly agree, 4 is agree, 3 is undecided, 2 is disagreed and 1 is strongly disagree).

Content Validity Index (CVI) was used to evaluate the questionnaire's validity using the formula;

$$CVI = \frac{\text{Number of items regarded relevant by experts}}{\text{total number of items}} \dots\dots\dots (3.2)$$

If the CVI was ≥ 0.7 , the instrument was rendered valid (Shi et al., 2012).

Table 3.2: Validity table

Variables	Number of items	Number of valid items	CVI
Construction project management practices	09	07	0.889
Impact of Construction project management practices	12	10	0.833
Role of Stakeholder Involvement	07	07	1.0
Average			0.907

Since the average CVI was $0.907 \geq 0.7$, the instrument was rendered valid.

3.10 Procedure for Data Collection

The researcher got a letter of introduction after a study proposal development from Kyambogo University under the guidance of the supervisor who helped to introduce him to the appropriate respondents at Mbale District Local Government. The researcher then sought approval from Mbale District Administration to permit him to carry out a study. The researcher's act of obtaining a letter of introduction from the university and presenting it to the participants was to reassure the participants that any data they provided would be kept private and only for academic use. Questionnaires were then given out by the researcher interacting with the target group through interviews. The questionnaires were filled by the respondents and picked by the researchers after an agreed time that the respondent gave the researcher. The researcher spent considerable time speaking face-to-face with the key

informants during the interviews. The interviews lasted for a duration of 15 to 30 minutes but varied for each respondent.

3.11 Data Analysis and Presentation

3.11.1 Quantitative Data Analysis

Data from the questionnaire were organized, coded, standardized and simplified through coding, and then fed into SPSS version 20. Constant data were described using the means and standard deviations. Categorical data elements like sex, and occupation, were expressed as frequencies and proportions. Regression analysis was used to establish the relationship between construction project management and education infrastructure development through correlation analysis. Furthermore, correlation and regression analysis were conducted to determine the relationship and the degree by which construction project management affects education infrastructure development respectively. Quantitative information was displayed using frequency tables. The goal of quantitative analysis was to explain, predict as well as analyze relationships to characterize the impact of construction project management practices on the development of education infrastructure in Male District Local government.

3.11.2 Qualitative Data Analysis

Once the data was gathered through interviews, was systematically arranged and transcribed into a text format. The data were then transported into a spreadsheet where it was organized following study objectives, categorized and coded. This helped to identify related content across the data. This data aided in supplementing conclusions based on quantifiable data. Some themes and relevant responses from interviews were cited by respondents directly to support the quantitative findings, as highlighted by Kothari (2004).

3.12 Measurement of Variables

The factors were quantitatively assessed using the 5-point Likert scale that indicates varying degrees of agreeing and disagreeing, as explained by (Kothari, 2004). To simplify the quantitative analysis, rankings of 5–1 were assigned to responses from strongly agree to strongly disagree respectively. The ordinal scale was used in the measurement of independent and dependent variables. Then, the nominal scale was used to measure the general information of the respondents. The qualitative variables were measured through subjective judgment and interpretation of the meaning attached to the expressions, statements and non-verbal communication experienced during data collection.

3.13 Achievement of specific objectives

To establish construction project management practices employed by Mbale District Local Government, in the development of education infrastructure, a questionnaire was administered where respondents were asked to state the degree to which, in a 5 pointer Likert Scale, they agreed or disagreed with particular statements regarding construction project practices in the district. The objective was also achieved through conducting interviews with district heads of departments, school administrators and contract managers (contractors) who gave their views on the subject matter, while some documents like monthly reports, payment certificates, and incidental reports were reviewed. These processes helped to acquire information that gave a thorough understanding of the contract management practices in the district and how these practices are applied while executing education infrastructure projects. The processes were also useful in identifying gaps and possible solutions. The collected data were organized, coded, standardized and simplified through coding, and then fed into SPSS version 20. In the form of means and standard deviations, descriptive statistics were analyzed to establish the impact of construction project

management practices on the development of education infrastructure projects in Mbale District Local Government.

Objective number two was accomplished by processing data collected through the questionnaire to obtain statistical figures that helped to describe, correlate and establish the impact of construction project management practices on the development of Mbale District education infrastructure. The mean and standard deviation derived were used to explain the findings of statistical analysis and based on these findings, conclusions were able to be drawn. To qualitatively get more understanding of the relationship of the variables and beef up the statistical information, interviews were conducted with key people involved in the execution of education infrastructure projects in the district. The key respondents included the district head of departments and contract managers who are well-versed with construction activities in the district and who provided in-depth information about the topic.

To evaluate stakeholders' involvement in the lifecycle of education infrastructure projects in Mbale District Local Government, objective three was achieved through findings of the analysis of data from the questionnaire. Descriptive, correlation and regression analysis established how stakeholders' involvement in the lifecycle of education infrastructure projects is related to the development of Mbale education infrastructure. This was also achieved through interviews with school administrators, contract managers/contractors and district heads of departments and a review of contract documents obtained from contract files.

The fourth objective was achieved by the use of information obtained from the three objectives' findings and results to come up with the recommended methodology.

3.14 Limitations to the Study

Different restrictions were faced as discussed below;

Some of the study participants did not turn up during data collection because of busy schedules. This was solved by asking the respondents which day he/she could be convenient for him or her for the study before administering of questionnaire or carrying out an interview.

All respondents did not expose all the important issues about the study problem due to fear of portraying a bad image of their organization/district. This was overcome by ensuring the respondents that the research is solely for academic purposes any data obtained would remain confidential and also the study was done anonymously where no one's name or title would appear in the report.

Control over the respondents' attitudes during the study was not possible. They were encouraged to feel free and avoid biases while answering the questions. Although the pandemic has scaled down, some of the respondents did not want to participate for fear of getting infected with the Covid-19 virus. This was overcome by following Covid-19 standard operating programs (SOPs).

3.14 Chapter Summary

This chapter's purpose was to describe the methods and approaches taken in conducting the study that produced the findings of the research. The specifics of how the research was carried out and who participated in the study were outlined and explained. The discussion on procedure, collection of the data, questionnaire and interview guide was exhaustively discussed. Challenges that might have been faced during the study, as well as their mitigation measures, were discussed. The aim of the following Chapter-4 is to present and

talk about the results of the study and show that the methodology outlined in Chapter 3 was used.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

The findings of the investigation are presented, analyzed, and interpreted here in the chapter. This chapter explains information on the rate of response, background data on the participants and results presentation concerning each specific objective of the study. Considering the responses to each of the questionnaire's statements, the data were analyzed and presented. Means, standard deviations, frequencies and percentages were used to discuss construction project management practices of Mbale District Local government. In addition to using narrative text for presentation and analysis of the acquired secondary data and interview responses, pie and bar charts are also used.

4.2 Response rate

The rate of response is a ratio of the returned number of questionnaires to those that were distributed to respondents. In other words, it is the number of interviews done and questionnaires filled divided by the number of respondents that were reached out. This rate greatly influenced the quality of the study (Krishnan and Poullose, 2016).

Table 4.1: Response rate

Tool used	Category of respondents	Proposed sample	Actual Response	Response Rate
Questionnaires	District heads of department	8	8	100%
	LC III chairmen	14	14	100%
	School construction supervisors (MoES& DLG)	38	32	84.2%
Interview guide	School administrators	33	23	69.7%
	Contract managers (contractors)	15	15	100%
		108	92	85.2%

Table 4.1 indicates that there was 87.12% overall response rate. Out of 108 proposed samples, 92 respondents took part in the research. The reduction in the size of the sample was due to some questionnaires that were not returned and some respondents who declined to participate in the study. (Kurgat and Guyo, 2019), quoting Mugenda and Mugenda (2003) stated that a rate of response over 50% is enough and over 70% is very good. Hence 85.2% rate of response in this study was excellent.

4.3 General Information on Respondents

Within this part, the findings on the information about the respondents, in general, are presented and it covers sex, age range, highest education level, status on marriage, job, and length of service in the organisation. This was to enable the study to tailor interventions and recommendations that are specific to the needs and characteristics of different groups. It was also to enable the study to provide insights into how factors such as gender, age, education, and employment status may influence perceptions, attitudes, and behaviours related to construction contract management and infrastructural development.

4.3.1 Respondents' Gender

The gender of the respondents was requested and Figure 4.1 shows the results.

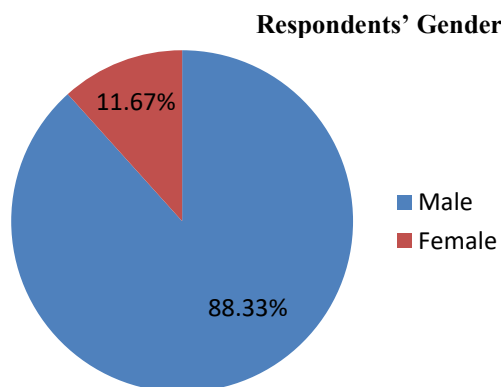


Figure 4.1: Gender of respondents

Figure 4.1 shows that males were (88.33%) and females were (11.67%). This implies that more males participated in the management and administration of educational institutions in Mbale district as compared to females. Male respondents predominated over female respondents in this study. The findings imply that despite the higher representation of male respondents, the inclusion of both genders in the study ensures that diverse perspectives are captured in the findings. It implies that the study accounts for the perspectives and experiences of both men and women involved in construction contract management practices within the education sector.

4.3.2 Age of Respondents in Years

Additionally, range of age in years was requested of the respondents, and the outcome was given in Figure 4.2

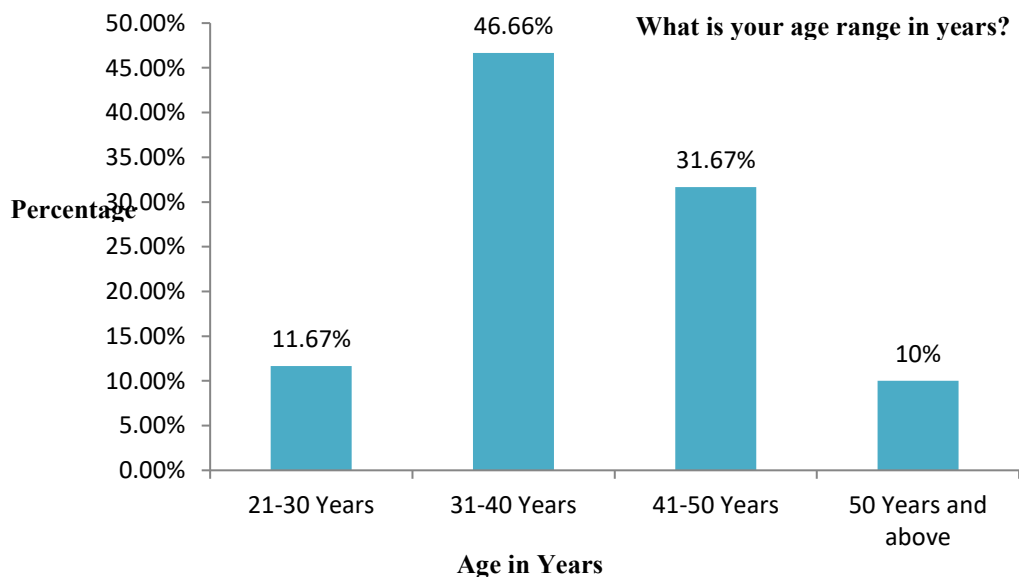


Figure 4.2: Age range of respondents

Figure 4.2 revealed that 46.7% of those surveyed were between 31-40 years old, 31.7% were between 41-50 years, 11.7% were between 21-30 years while 10.0% were over 51 years old. This suggests that the study was thorough because it included participants from a range of age groups. The age bracket of 31 to 40 years and older provided great potential for

achievement of higher levels of project performance as it primarily consisted of respondents from the two categories. This is primarily so because the age range of 31 years and above offers a type of management staff that has extensive experience in management and might thus easily formulate and implement result-oriented policies and strategies in educational construction projects. The findings imply that the inclusion of participants from a diverse range of age groups suggests that the study is comprehensive in its approach. By capturing perspectives from individuals across different stages of their professional careers, the study can provide a holistic understanding of construction contract management practices within the education sector. This enhances the credibility and validity of the study findings.

4.3.3 Education Level of Respondents

The results of asking respondents to list their highest level of education are shown in Figure 4.3.

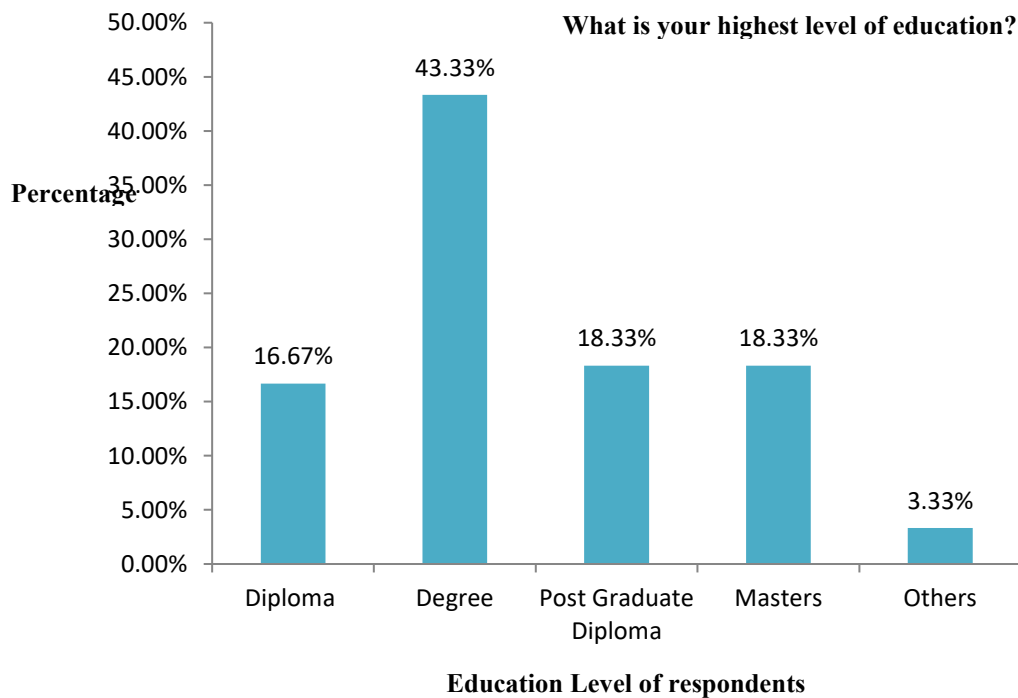


Figure 4.3. Respondent's highest education level

Figure 4.3 shows that most of the respondents had a degree and above in education (43.3%+18.3%+18.3%) except a few who had attained a diploma (16.7%) and other education levels (3.3%) which they specified as 'A' level education. Most respondents could read, write, and answer the questions on their own. The respondents' high level of education was mainly because of the minimum formal training required before getting on to the positions they held. The finding suggests a high level of expertise and specialization in educational management and administration. Their advanced qualifications equip them with the necessary knowledge and skills to effectively oversee construction contract management practices within the education sector. This expertise is essential for making informed decisions, implementing best practices, and ensuring the successful delivery of education infrastructure projects.

4.3.4 Marital Status of Respondents

The study also gathered data on respondents' marital status, and the findings are displayed in Figure 4.4.

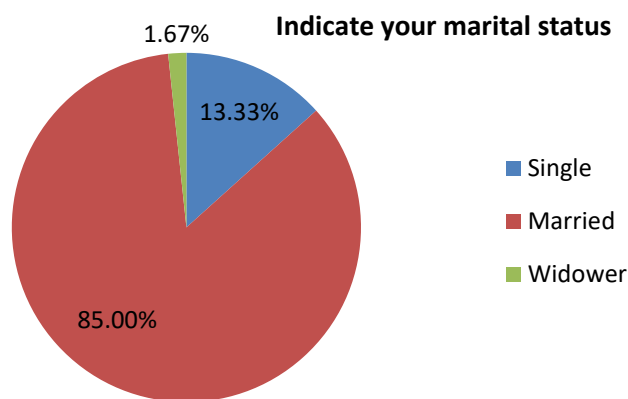


Figure 4.4. Respondents' Marital Status

Most of the respondents were married (85.00%) except (1.7%) who were a widower and the rest (13.3%) were single. According to the findings, the marital status of respondents

provides valuable insights into their perceived level of responsibility and commitment, which can influence the reliability and validity of study findings.

4.3.5 Longevity of Respondents in the Current Organization

The respondents were questioned regarding their tenure in their current positions with the organization. The obtained outcomes are displayed in Figure 4.5



Figure 4.5. Longevity of respondents in the current organization

Figure 4.5 indicates that most respondents, 75.0% (35.0%+30.0%+10.0%) had served for more than 5 years while 25.0% had served for 5 years and below. This outcome indicates that most of the respondents were knowledgeable about contract management and project execution for the construction of infrastructure in educational institutions. As a result, the study's findings are reliable for they accurately reflect the respondents' levels of experience. The respondents were able to make comparisons and contrasts between both the present situation and the past events.

4.3.6 Position of Respondents in the Organization

Figure 4.6 presents the study's findings, which also attempted to learn more about the respondents' positions within the organization. Respondents were asked to indicate their position in the organization.

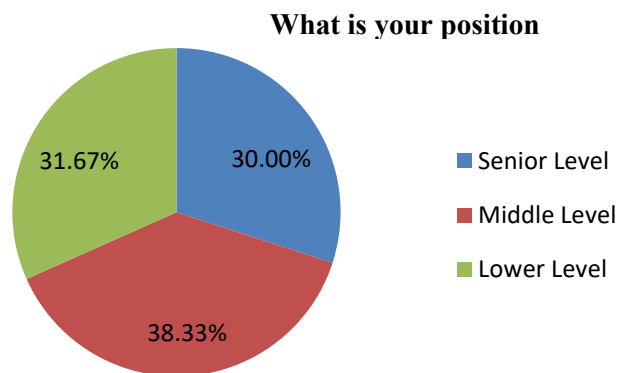


Figure 4.6: Respondents' Position in the Organization

The result in Figure 4.6 shows that most of the respondents were in middle management level positions (38.3%) and few of them were at senior management level (30.0%) and 31.7% were at lower management level. The distribution of respondents across various management levels enriches the depth and breadth of insights in a study on construction contract management practices and education infrastructure development.

4.4 Construction Contract Management Practices by Mbale District Local Government

The investigation sought to determine construction contract management practices by Mbale District Local Government. This section presents and explains the opinions of the respondents on construction contract management practices. The results were analyzed and interpreted using the frequencies, means, and standard deviations to provide a precise description of the position of the respondents on the statements measuring each of the dimensions under each variable. The findings of the research are shown in Table 4.2.

Table 4.2: Construction project management practices by Mbale District Local Government

Descriptive Statistics					
Variables	Response	Percentage	Mean	S. D	Rank
All potential bidders are called for bids publicly	Disagree	10%	4.18	1.04	1 st
	Not Sure	11.7%			
	Agree	78.4%			
All payment procedures are followed as stipulated in government financial regulations	Disagree	15%	3.87	1.04	2 nd
	Not Sure	11.7%			
	Agree	73.3%			
There is an adequate collaboration of stakeholders for project success during the implementation	Disagree	13.3%	3.72	0.86	3 rd
	Not Sure	15.0%			
	Agree	71.6%			
Education infrastructure projects planning and implementation are negatively affected by political influence	Disagree	18.4%	3.58	1.04	4 th
	Not Sure	23.3%			
	Agree	58.3%			
Funds for education projects are not diverted to do other activities	Disagree	25%	3.53	1.22	5 th
	Not Sure	23.3%			
	Agree	51.7%			
Participants of education infrastructural projects have different expectations and interests	Disagree	18.4%	3.47	.929	6 th
	Not Sure	23.3%			
	Agree	58.3%			
The process of selecting beneficiary schools follows the set guidelines by the Ministry of Education and Sports and is transparent	Disagree	25.0%	3.40	1.15	7 th
	Not Sure	23.3%			
	Agree	51.6%			
Project managers do their work adequately and in a transparent manner	Disagree	28.3%	3.37	1.10	8 th
	Not Sure	11.7%			
	Agree	60.0%			
Books of records are well maintained for purposes of follow-up	Disagree	21.7%	3.37	1.00	9 th
	Not Sure	21.7%			
	Agree	56.7%			
Materials used by contractors are as per Bill of Quantities (BOQ)	Disagree	26.7%	3.37	1.07	10 th
	Not Sure	13.3%			
	Agree	60.0%			
Monitoring and supervision of projects are done by all concerned Players	Disagree	25.0%	3.33	1.06	11 th
	Not Sure	21.7%			
	Agree	53.3%			
There is transparency in the procurement selection process where only the right contractors are procured for the job.	Disagree	28.4%	3.25	1.12	12 th
	Not Sure	23.3%			
	Agree	48.4%			
Aggregate Mean and standard deviation			3.54	1.05	

N=92

The five-point Likert Scale was used: 5 = *Strongly Agree*, 4 = *Agree*, 3 = *Not Sure*, 2 = *Disagree*, 1 = *Strongly Disagree*. *Std. Dev* = *Standard Deviation*. For ease of analysis, the percentage values for strongly agreed and agreed were added up to mean Agreed. Likewise, strongly disagreed and disagreed added up to mean Disagreed.

Generally, the findings in Table 4.2 show that respondents agree that contract management practices aimed at improving education infrastructure developments exist at Mbale District Local Government. This is evidenced by the aggregate mean score of 3.54 which is above the average mean of 3.00 of the 5-point Likert Scale. However, there was a notable variation in how respondents ranked the importance of the identified practices. For instance, there were only five construction project management practices that ranked above the overall aggregate mean score of 3.54 with an aggregated standard deviation of 1.058

Regarding whether all potential bidders are called for bids publicly, respondents strongly agreed with a mean score of 4.18 and SD = 1.05 which was ranked as the most important practice adopted in Mbale District Local Government. This implies that bidding is open to all interested potential bidders. This promotes competition and transparency in the procurement process, thus lowering discrimination among contractors, suppliers/vendors. It also enables engaging competent contractors that have technical and financial capacity at the lowest market price while not compromising quality. While public bidding is generally encouraged, it's important to ensure that the process is well-documented, adheres to relevant regulations and guidelines, and provides a fair and level playing field for all bidders (PPDA Act, 2003). This means that this practice enables the district to select the most suitable bidders who have the technical and financial capacity to undertake the construction of education construction projects. This was confirmed by the review of several tender notices where Mbale district publicly called for potential bidders to apply for works and supplies.

This is in line with Alzahrani, (2013) who concluded, in his thesis on how attributes of contractors affect the performance of construction projects, that the financial, managerial, experience, and technical skills of contractors, among other qualities, have a significant impact on projects' success. This also complies with the 2003 PPDA Act and the public procurement contracts regulation of 2014.

The research findings also showed that the respondents strongly agreed that all payment procedures are followed as stipulated in government financial regulations, (Mean = 3.87 and SD = 1.049) and ranked the 2nd most important practice adopted in Mbale District Local Government. This means that payment procedures in Mbale district are followed as stipulated in government financial regulations. Adhering to effective financial rules and regulations prevents District Local Governments from taking undue risks or committing fraud. This is supported by the fact that all public expenditure at any level must follow the regulations and guidelines stipulated in the PPDA Act 2003. By following government financial regulations in payment procedures, educational institutions can ensure transparency, accountability, and responsible financial management. This helps maintain public trust, mitigate risks, and ensure the efficient utilization of financial resources for the successful completion of projects. In Mbale, this was evidenced by the fact that all concerned officials had to endorse interim certificates of payment as required by financial regulations. This was further evidenced by reviewed interim certificates of payment for the construction of several schools including the one for construction of Yoweri Museveni Primary. The findings are in line with the Public Finance Management Regulations, 2016 which stipulates that Payment vouchers, whether electronic or otherwise, must be used for all payments made with public funds as prescribed by the Accountant General and payments due on vouchers must be paid as first as possible to the recipients.

The results in Table 4.2 further indicated that the majority of the respondents agreed that there is an adequate collaboration of stakeholders for project success during implementation (Mean = 3.72, Std. Dev = 0.87) and ranked the 3rd most important practice adopted in Mbale District Local Government. The study findings mean that players in the construction of education institutions, ranging from the beneficiaries, contractors and management, effectively communicate with one another resulting in productive teamwork to ensure projects are implemented successfully and according to specification and time. This was evidenced by some of the reviewed documents which indicated that regular site meetings are held whenever contractual works are ongoing. Site meetings support the enforcement of quality standards by fostering increased communication within the construction team, evaluating the employed specifications, and questioning the construction team's competency. This conforms with Van Doeveren (2011) who identified a convergence of common ideas as a good management tool and (Oke *et al.*, 2016) who stated that the purpose of site meetings is to ensure that projects run well from the beginning to the end by reducing disagreements that might postpone project completion.

The findings further show that the majority of the respondents agreed with the statement that education infrastructure projects planning and implementation are negatively affected by political influence (Mean = 3.58 and Std. Dev = 1.046) and ranked the 4th most important practice adopted in Mbale District Local Government. This suggests that political leaders frequently favour giving contracts to their friends or families and their decisions are hinged on political considerations, such as electoral promises, party affiliations or regional interests. When Politicians engage in direct Planning and implementation of construction projects like allocation of funds, decision-making processes and prioritization of projects, there is a likelihood of engaging incompetent contractors through influencing procurement

processes and making inappropriate decisions. This hinders the smooth implementation of projects and leads to conflicts and the project outcome is always below the required quality leading to conflicts. This is in agreement with Dlamini (2017) stated that internal political conflicts in local governments hurt the delivery of services; that delivery of services suffers when internal disputes take primacy and time spent attempting to settle disputes lead to delays in providing services. Relatedly one of the respondents interviewed stated that:

"Politicians and public servants have a corrupt tendency and influence the awarding of tenders to contractors of their choice who give money to them in advance"

The finding is further supported by Kabatwairwe (2023) who asserted that corruption is the biggest threat to infrastructure development and it occurs throughout the project delivery process, from the tendering process through to contract management.

The study findings furthermore revealed that most of the respondents were in agreement with the statement that funds for education projects are not diverted to do other activities with mean = 3.53 and Std. Dev = 1.28, and ranked the 5th most important practice adopted in Mbale District Local Government. This is an indication that the funds that are planned and appropriated for education infrastructural construction for Mbale District are correctly used as per set guidelines. Preventing the diversion of funds in education projects requires a multi-faceted approach that involves budgetary control, financial oversight, transparency, accountability, and strong internal controls. The use of funds by the local government against the conditions that the central government has permitted may lead to financial penalties and conflicts between the central government and the district, therefore, negatively affecting education infrastructure development. Diversion of funds also distorts the level of previously planned activities. This practice of proper utilization of funds ensures the

enhancement of education infrastructure quality and quantity. This is consistent with the reviewed implementation guidelines issued by the Ministry of Education and Sports for construction works at Butiiru and Nyondo Demonstration Primary Schools, where section 4.0 of the guidelines stated:

“Funds must not be diverted to any other purpose other than the works specified in (3.0) of these guidelines” Anti-Corruption Act (2016)

This is consistent with the Anti-Corruption Act 2016 which declares that it is illegal to convert or transfer public funds for uses other than those for which they were intended.

Whereas, the discussion above highlights the top 5 contract management practices available in Mbale District Local Government, it is noted that in some practices, the level of agreement was marginally less than the aggregated mean score of 3.54 and as a result, they ranked low according to the preference of respondents. For instance, in regards to whether monitoring and supervision of projects are done by all concerned players, it was agreed by respondents with only a mean score of 3.33 and Std. Div = 1.068 and ranked the 11th practice adopted by Mbale District Local Government. Despite the low level of agreement with the statement, the finding implies that adequate monitoring and supervision of contractors at the sites lead to the production of quality work that gives value for money and improves education infrastructure development. The letter dated 10th May 2019 which was reviewed, indicated that the permanent secretary of the Ministry of Education and Sports directed all district Chief Administrative Officers to appoint a Clerk of Works to supervise UgIFT projects. This finding is in agreement with Emmanuel *et al.* (2020) who argued that the success of projects within set goals is greatly influenced by effective and quality supervision. Monitoring contractors' progress regularly is so important in the construction

of education structures and this is stressed by Oluka and Basheka (2014), who discovered that a lack of consistent follow-up lead to non-adherence to the deadlines set. Similarly, Musiimenta (2019) discovered a strong and positive significant correlation between monitoring/tracking and the effectiveness of procurement. On the contrary, most of the interviewed respondents said that the supervision of contractors and the work they do at the sites is inadequate. The above is supported by a reviewed letter by the Ministry of Finance, Planning and Economic Development advising the Ministry of Education and Sports to scale down on the scope of construction works under the UgIFT project due to limited financial resources. Inadequate funding is also evidenced by the reviewed indicative planning figures (IPF) for financial years 2022/2023 and 2023/2024 where Mbale District Local Government was allocated UGX 905,709,665 and UGX 591,805,590 respectively for secondary schools' construction under UgIFT program. This funding is too small given the huge need for secondary education infrastructure development in the district.

The study findings in Table 4.2 also indicate that the respondents agreed that there is transparency in the procurement selection process where only the right contractors are procured for the job with a mean score of 3.25 and SD = 1.129 and ranked the 12th most important practice adopted in Mbale District Local Government. Despite the low level of agreement with the statement, the finding means that during the procurement process, the right contractors are procured and awarded the right work contracts. This is important because when the procurement process is done as stipulated in the PPDA Act, 2003 and subsequent contract regulations and guidelines, the right contractors and suppliers are procured for the right jobs. Transparency and honesty in procurement and evaluation processes, therefore, promote accountability and smooth running of projects thus education infrastructure development. This is consistent with Chathampilly (2012) who asserts that

transparency encourages greater competition in public procurement and ensures that decision-makers can be held accountable. Therefore, before the start of the procurement process, governments should promptly make information about the method of the award and the selection criteria available and upon contract award, a thorough justification against the established criteria must be made.

4.4 Contract Management Practices and Education Infrastructure Development

4.4.1 Correlation results between Contract Management Practices and Education Infrastructure Development

Pearson's correlation analysis was computed and interpreted to determine the relationship between construction project management practices and education infrastructure development of Mbale District Local Government. Pearson's correlation analysis was used simply because the data was quantitative and continuous. The results are presented in Table 4.3

Table 4.3: The relationship between construction project management practices and education infrastructure development

		Correlations	
		Construction project management practices	Education infrastructure development
Construction project management practices	Pearson Correlation	1	0.946**
	Sig. (2-tailed)		0.000
	N	92	92
Education infrastructure development	Pearson Correlation	0.946**	1
	Sig. (2-tailed)	0.000	
	N	92	92

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

Results in Table 4.3 show that there is a significant positive relationship between construction project management practices and education infrastructure development in

Local government ($r = 0.946$, $P < 0.05$). This implies that an improvement in construction project management practices is associated with an improvement in education infrastructure development. This agrees with the thinking that end-users always have towards infrastructure development. For instance, there is a perception that when practices such as supervision and monitoring of construction projects are done by stakeholders and contractors are put to check; there is a likelihood that infrastructure development will be effective.

4.4.2 Regression analysis on the effect of Contract Management Practices on Education Infrastructure Development

To establish the impact of contract management practices on education infrastructure development, a linear regression analysis was conducted.

Table 4.4: The impact of construction project management on education infrastructure development

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.946 ^a	0.894	0.892	0.25622

a. Predictors: (Constant), Construction project management

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	32.150	1	32.150	489.708	0.000 ^b
	Residual	3.808	58	0.066		
	Total	35.957	59			

a. Dependent Variable: Education infrastructure development

b. Predictors: (Constant), Construction project management

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.136	0.121		9.403	0.000
	Construction project management practices	0.739	0.033	0.946	22.129	0.000

a. Dependent Variable: Education infrastructure development

The results presented in Table 4.4 indicate that the regression model is a good fit, given the value of F statistic = 489.708, at P < 0.05). This implies that the fitted values were not consistently very low or very high throughout the data space, and as a result construction project management made a significant positive contribution to total variances in education infrastructure development. The adjusted R Square of 0.892 means that construction project management practices explain up to 89.2% variations in education infrastructure development. In addition to that, the $B = 0.739$ shows that when construction project management practices are improved by one unit, education infrastructure development is likely to increase by 0.739 units. This can be summarized in the regression equation;

$$EID = 1.136 + 0.739 CCMP + e \dots\dots\dots (4.1)$$

Where; EID is Education Infrastructure development, CCMP is construction project management practices and e is the standard error.

The equation can therefore be used to predict the changes that will take place in education infrastructure improvement when there is a change in contract management practices. For instance, it suggests that should there be an improvement in contract management practices by one unit, there will be 0.739 increases in education infrastructure development.

Therefore, the study findings answer the question of whether construction project management practices have an impact on education infrastructure development.

All in all, this finding implies that, when considerable attention is directed towards the improvement of construction project management practices such as open bidding, payments' compliance to financial regulations, stakeholder involvement in work plan development, monitoring and supervision of projects by all concerned stakeholders and more so end users,

then there is likely to be an improvement in education infrastructure development in Local governments in Uganda. This finding concurs with the general public perception today whereby the education infrastructure development is assumed to be largely dependent upon the management of projects. For instance, the public thinks overseeing the planning, implementation, evaluation and commissioning of construction projects is fundamental for the success of infrastructure development in the country. This view conforms with the majority of LC3 Chairpersons who claimed that:

Not only this but also several prior studies tended to agree with current study findings. For instance, Van Doeveren (2011) concurs with this study's findings. In his empirical study, it was established that convergences of common ideas such as the rule of law and good governance, participation of stakeholders, transparency, openness and accountability have an impact on infrastructure development. In addition, this finding is also justified by Khahro *et al* (2023) who strongly emphasized the need for effective contract management practices. According to his findings, delays in making decisions, lack of technical expertise, incomplete paperwork, bad leadership, and coordination and communication problems offer significant barriers to infrastructure development. Similarly, Dlamini, (2017) asserts that where there are no good contract management practices, most especially where there is an existence of internal political conflicts in local governments, infrastructure development is likely to be jeopardized.

4.5 Stakeholder Involvement and Education Infrastructure Development

The third research objective of the study was to evaluate the role of stakeholder involvement in the lifecycles of education infrastructure projects in Mbale District Local Government. This section presents the respondents' general opinion about the role of stakeholder

involvement in the lifecycles of education infrastructure projects, the associated relationship and the impact it has on infrastructure development in Mbale District Local Government.

4.5.1 Perception on the Role of Stakeholders' Involvement

The respondents were questioned about their opinion concerning the role of stakeholders involved in the lifecycles of education infrastructure projects in Mbale District Local Government and the study findings were presented using descriptive statistics which included frequencies, percentages, means and standard deviations as indicated in Table 4.5

Table 4.5: The role of stakeholders (end users) in education construction projects

Variables	Response	Frequency (%)	Mean	Std. Dev.	Rank
Stakeholders are important in project goals and objectives settings	Agree	96.5%	4.44	0.68	1 st
	Disagree	3.5%			
There is an improvement when stakeholders are involved in the education construction projects	Agree	96.4%	4.32	0.66	2 nd
	Disagree	3.6%			
Stakeholders' involvement accelerates project implementation	Agree	77.6%	3.98	1.00	3 rd
	Not sure	8.6%			
	Disagree	13.8%			
Stakeholders guide in project problem identification and risks mitigation	Agree	79.0%	3.95	0.95	4 th
	Not sure	10.4%			
	Disagree	10.6%			
Stakeholders are always engaged to help in project monitoring and evaluation	Agree	64.4%	3.53	1.02	5 th
	Not sure	10.2%			
	Disagree	25.4%			
There is adequate end-user involvement during the implementation	Agree	59.7%	3.35	1.13	6 th
	Not sure	15.8%			
	Disagree	24.6%			
There is adequate end-user involvement at the planning stage	Agree	51.8%	3.16	1.22	7 th
	Not sure	16.1%			
	Disagree	32.1%			
Aggregate Mean and standard deviation			3.82	0.95	

The five-point Likert Scale was used: 5 = *Strongly Agree*, 4 = *Agree*, 3 = *Not Sure*, 2 = *Disagree*, 1 = *Strongly Disagree*. *Std. Dev* = *Standard Deviation*. For ease of analysis, the percentage values for strongly agreed and agreed were added up to mean Agreed. Likewise, strongly disagreed and disagreed added up to mean Disagreed.

Generally, the outcomes in Table 4.5 show that respondents agreed that stakeholder involvement aimed at improving education infrastructure developments exists in Mbale District. This is evidenced by the overall aggregate mean score of 3.82 which is above the average mean of 3.00 on the Likert Scale. However, there was a notable variation in how respondents ranked the importance of the identified practices. For instance, there were only four items that ranked above the overall aggregate mean score of 3.82 with an aggregated standard deviation of 0.95.

Regarding whether stakeholders are important in project goals and objectives settings, respondents strongly agreed with a mean score of 4.44 and SD = 0.68 which ranked as the most important variable. This implies education projects' main objectives and goals are usually set and achieved successfully when end users get involved in the project's life cycle. End-users are the ones who are aware of the institutional construction needs because they are using the infrastructure. By involving stakeholders in setting project goals and objectives, therefore, educational institutions can benefit from their diverse perspectives, expertise, ownership, and alignment with needs. This inclusive approach enhances the chances of defining realistic targets, fostering engagement, and ultimately achieving successful project outcomes. This is in agreement with Cheng, Shimiao and Danfeng (2010) who affirmed that stakeholder participation in project planning helps to spell out tasks, predict finished product(s), determine methods of execution of work, estimate time, determine resources required and a structure for managerial oversight and control are given.

The study findings also show that the majority of the respondents agreed that there is an improvement when stakeholders are involved in the education construction projects, with a mean score of 4.32 and Std. Dev = 0.66 and was ranked the 2nd most important variable. This finding means that when stakeholders are involved in education construction projects, the implementation and execution of these projects at educational institutions improve significantly because there is a lot of sharing of ideas that are essential towards the success of the projects. This is in agreement with Khan *et al.*, (2018) who stated that globally, stakeholders' involvement is regarded as one of the key success criteria in any given major construction or infrastructure project and as such and in line with this Uganda government enacted the Public Participation Act to support the demand for the involvement of stakeholders which claims that "this Act's main goal is to improve, promote, advance, and equip the public to participate in processes of governance " (Initiative for Social and Economic Rights (ISER), 2018).

The study findings further revealed that the majority of the respondents agreed that Stakeholders' involvement accelerates project implementation, with a mean score of 3.98 and Std. Dev = 1.00, which ranked as the 3rd most important variable. This implies that when stakeholders are involved in the life cycle of projects, there is a smooth implementation of contracts as they are too keen to ensure no obstacle should stand in the way to negatively affect any stage during planning and implementation, for the project is theirs. This is beefed up by one respondent who argued that:

Supervision and monitoring of projects in Mbale District should be left to end-users if the government wants schools constructed well

To affirm this, She *et al.*(2018) attribute project performance to efforts to boost contractor input performance using a performance management framework where responsible project stakeholders monitor the project performance at their level

Concerning whether stakeholders guide in project problem identification and risks mitigation, the majority of respondents agreed with the statement with a mean score of 3.95 and Std. Dev = 0.95 and was ranked the 4th most important variable. This means that stakeholders are essential in identifying problems and risks and guiding in solving problems and mitigating risks encountered in education construction projects' implementation at Mbale district. By involving stakeholders in project problem identification, the project team can benefit from their diverse perspectives, contextual knowledge, user feedback, and insights. This collaborative approach leads to a more comprehensive understanding of potential problems, enabling proactive problem-solving and mitigation strategies. Ultimately, stakeholder guidance contributes to improving project outcomes and increasing stakeholder satisfaction. This concurs with Kituku (2015) in his study of complaint management, where it was established that jointly tackling issues was discovered to be the most popular tactic of conflict resolution that allows a project to accomplish its goals.

Whereas, the discussion above highlights the top 4 end-user involvement in Mbale District Local Government, it is noted that in some cases the level of agreement was slightly lower than the aggregated mean score of 3.82 and as a result, they ranked low according to preference of respondents. For instance, in regards to whether there is adequate end-user involvement during implementation, it was agreed by respondents with only a mean score of 3.35 and Std. Div = 1.13 and ranked the 6th variable. Despite the low level of agreement with the statement, the finding implies that the education construction project beneficiaries in Mbale district engage in the projects' implementation to ensure that the quality of the

projects is achieved. This is evidenced by a letter to the Permanent Secretary of the Ministry of Education and Sports by Mbale's Chief Administrative officer indicating a steering committee for the establishment of Maumbe Mukwhana Memorial Technical Institute where the proposed committee included the District chairperson, the chairperson LCIII and members of the family of the late Maumbe Mukhama among other stakeholders. By actively involving stakeholders in education construction projects, the project team can tap into their expertise, streamline decision-making, enhance coordination, access additional resources, and foster a culture of accountability. These factors collectively contribute to expediting the implementation process and ensuring the timely completion of the project. This finding is consistent with Gulam (2018) who stated that stakeholder management practices of identification, assessment and engagement are vital for project performance.

The study findings further indicated the respondents agreed with the statement that there is adequate user involvement at the planning stage, with mean = 3.16, Std. and Dev = 1.22 and ranked this variable in the 7th position. Despite this low level of ranking too, the finding implies that in Mbale district, stakeholders in the education construction ensure that there is adequate user involvement at the planning stage. The planning stage is essential for every project to be implemented successfully. It is at this stage that end-users help to forecast any hindrances that might crop up during the next stage of implementation and forge a way for mitigation measures. This is in agreement with Khan *et al.*, (2018), who assert that globally, stakeholders' involvement is one of the key success criteria in any given major construction or infrastructure project and that is why for example, in the constitution of Kenya (2010), public participation is guaranteed by the constitution. Kenya's county governments are obliged to include members of the public and other project-affected persons in the development of projects by getting their opinions and incorporating them into the decision-

making process. Similarly, Uganda enacted the Public Participation Act to support the demand for the involvement of stakeholders which states that "this Act's main goal is to improve, promote, advance, and equip the public to participate in processes of governance" (Initiative for Social and Economic Rights (ISER), 2018).

4.5.2: The relationship between stakeholders' (end-user) involvement and education infrastructure development

Pearson's correlation analysis was conducted to establish the relationship between end-user's involvement and the education infrastructure development of Mbale District Local Government, as indicated in Table 4.6.

Table 4.6: The relationship between stakeholder Involvement and education infrastructure development

		Correlations	
		Stakeholder involvement	Education infrastructure development
Stakeholder involvement	Pearson Correlation	1	0.958**
	Sig. (2-tailed)		0.000
	N	108	108
Education infrastructure development	Pearson Correlation	0.958**	1
	Sig. (2-tailed)	0.000	
	N	108	108

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

In regards to whether stakeholder involvement is associated with education infrastructure development, results in Table 4.6 agree that there is indeed a significant positive relationship between stakeholder involvement in construction projects with education infrastructure development ($r = 0.958$, $P < 0.05$). This implies that an increase in stakeholder involvement is associated with an increase in education infrastructure development.

4.5.3 The impact of stakeholder involvement on education infrastructure development

The regression analysis was conducted to determine the impact of stakeholder involvement on the education infrastructure development of Mbale District Local Government as indicated in Table 4.7. This analysis also served as a means of validating the findings derived from survey respondents' opinions.

Table 4.7: The Impact of stakeholder involvement on education infrastructure development

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.958 ^a	0.918	0.917	0.22511

a. Predictors: (Constant), Stakeholder involvement

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33.018	1	33.018	651.601	0.000 ^b
	Residual	2.939	58	0.051		
	Total	35.957	59			

a. Dependent Variable: Education infrastructure development

b. Predictors: (Constant), Stakeholder involvement

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.451	0.131		3.445	0.001
	Stakeholder involvement	0.862	0.034	0.958	25.526	0.000

a. Dependent Variable: Education infrastructure development

The study aimed at establishing the effect of stakeholder involvement on education infrastructure development. From the results presented in Table 4.7, it is observed that the regression model was a good fit ($F = 651.601$, $P < 0.05$). This implies that stakeholder involvement significantly explains the variances in education infrastructure development in

Local governments. The adjusted R squared of 0.917 shows that 91.7% of variations in infrastructure development is explained by stakeholder involvement in construction projects. Meanwhile, the regression coefficient ($B = 0.862, P < 0.05$) shows that stakeholder involvement affects education infrastructure development. For instance, an increase in stakeholder involvement by one unit is associated with 0.862 increases in education infrastructure development. This can be summarized in the regression equation as;

$$EID = 0.451 + 0.862 SI + e \dots\dots\dots (4.2)$$

Where; EID is Education Infrastructure management, SI is stakeholder involvement and e is the standard error.

The equation can therefore be used to predict the changes that will take place in education infrastructure improvement when there is a change in stakeholder involvement. For instance, it suggests that should there be an improvement in stakeholder involvement by one unit, there will be 0.739 increases in education infrastructure development.

Therefore, the study findings imply that stakeholder involvement determines the state of education infrastructure development among local governments. When an effort is put towards promoting stakeholder involvement in construction projects, there are higher chances that education infrastructure development will be improved. This finding hence addresses the research question of whether stakeholder involvement affects education infrastructure development in Local government. In support of this study finding, the establishments of prior studies such as She *et al.*(2018) affirm the importance of stakeholders' involvement in infrastructure development. They argue that stakeholders should monitor the project performance if there is a need to register tremendous success in infrastructure development. Dalibi (2016) also asserts that insufficient monitoring by

stakeholders is one of the major causes of failures in infrastructure development. Similarly, Komakech (2020) also agrees that monitoring systems must be present, especially stakeholder-based systems to maintain work quality. In addition, education infrastructure stakeholders such as school administrators and the community have different expectations and continuous collaboration helps in ensuring that those expectations regarding quality education infrastructures are met. This is in agreement with (Dwivedi and Dwivedi, 2021) who asserted that establishing enduring relationships with stakeholders in the project, guarantees client satisfaction which contributes to infrastructure development.

4.6 The Impact of Construction Project Management on Education Infrastructure Development

To establish the impact of the overall construction project management on education infrastructure development, a multiple regression was performed by regressing both construction project management practices and stakeholder involvement.

Based on the results in Table 4.8, when construction project management practices and stakeholder involvement are jointly regressed against education infrastructure development to establish their joint contribution, it was revealed that they explain significantly 91.8% variations in education infrastructure development (Adjusted R square = 0.918, $P < 0.05$). However, observing the regression coefficients $B = 0.179$ and 0.661 for construction project management practices and stakeholder involvement respectively, it is evident that stakeholder management significantly contributes towards infrastructure development more than construction project management practices. This can be summarized using regression equation;

$$EID = 0.586 + 0.179 \text{ CCMP} + 0.661 \text{ SI} + e \dots\dots\dots (4.3)$$

Where; EID means Education infrastructure development, CCMP means Construction project management practices, SI means stakeholder involvement and e is the standard error.

The equation can therefore be used to predict the changes that will take place in education infrastructure improvement when there is a change in Construction project management practices. For instance, it suggests that should there be an improvement in Construction project management practices by one unit, there will be 0.739 increases in education infrastructure development.

Table 4.8: The Impact of Construction project Management on Education Infrastructure Development

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.960 ^a	0.921	0.918	0.22345

a. Predictors: (Constant), Stakeholder involvement, Construction project management practices

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33.111	2	16.556	331.582	0.000 ^b
	Residual	2.846	57	0.050		
	Total	35.957	59			

a. Dependent Variable: Education infrastructure development

b. Predictors: (Constant), Stakeholder involvement, Construction project management practices

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.586	0.164		3.585	.001
	Construction project management practices	0.179	0.131	0.229	1.365	0.178
	Stakeholder involvement	0.661	0.151	0.735	4.389	0.000

a. Dependent Variable: Education infrastructure development

Therefore, the findings imply that when a considerable effort is put towards improving construction project management practices, while at the same time stakeholder involvement is increased, there will be a likely improvement in education infrastructure development in Local Government. Therefore, one would argue out that contract management affects education infrastructure development. This is supported by a study by Waiswa (2018) which showed that infrastructure development is affected by contract management. Both contract management practices and stakeholder involvement positively relate to the success of infrastructure development. In a similar view, Oluka and Basheka (2014) agree with the findings as they revealed that effective and proper contract management enhances work quality and reduces procurement costs, hence quality services, timely deliveries and cost-effectiveness. The findings also concur with Gunduz and Elsherbeny (2020) who assert that effective contract management is required to close any gaps that could endanger the success of construction projects. Furthermore, the findings agree with (Byaruhanga and Basheka, 2017) who affirm that successful contract management affects how quickly building projects move forward. This is achievable because contractors can satisfy the requirements of their clients and perform the projects given to them within the anticipated parameters.

All in all, it is therefore crucial, for local governments to focus on improving contract management through enhancing stakeholder engagement and good practices to achieve infrastructure development.

4.7 Proposed Methodology for Improving Education Infrastructure Development

Based on the study findings, the development of education infrastructure in Uganda requires a comprehensive approach that encompasses various aspects. The study recommends the following methodology steps which resulted from the findings of the study objectives.

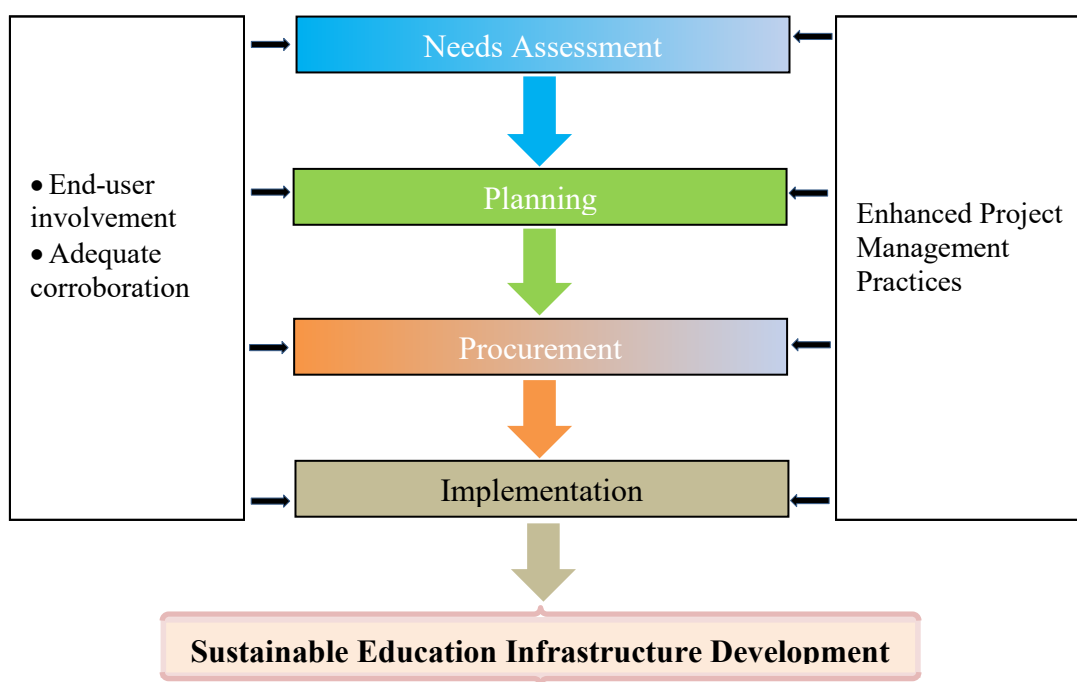


Figure 4.7: Proposed Methodology for Education Infrastructure Development

4.8 Implementation of the proposed methodology for Improving Education Infrastructure Development

4.8.1 Needs assessment

Local governments should conduct a thorough analysis of the existing infrastructure to identify gaps and shortcomings. This assessment should include factors such as the current and projected enrolments of learners and staff, availability of classrooms, libraries, laboratories, sanitation facilities and furniture; numbers and the conditions they are in. It should also include the availability of land, water, electricity and access roads. At this point, end-users and community involvement are very crucial to provide the necessary information for setting the overall construction objectives and targets and ensuring diverse needs in respective institutions are catered for. The selection of beneficiary schools must be transparent and based on needs assessment. The information obtained from this assessment is helpful for the next phase of planning.

4.8.2 Public Procurement

The district local governments should follow the procurement process as stipulated in the PPDA Act, 2003 as amended as well as subsequent contract regulations and guidelines; this will ensure that the right contractors and suppliers should be procured for the right jobs. Tendering and bidder evaluation processes should be transparent. There should be sufficient political ability, commitment and honesty to oversee the progress of contracts.

4.8.3 Project Management

Once all elements of planning are properly assessed, defined and put in place, the execution of any project will require an effective, efficient and vibrant construction project management if the intended project objectives are to be achieved. Therefore, this calls for employing good construction management practices that will provide adequate control of the project's major four elements of manpower, machines, materials and money. All actors in the chain of construction project management of education infrastructure should be well-trained professionals with integrity and should know what, who, how and when particular milestones should be accomplished.

4.8.4 Chapter Summary

In conclusion, therefore, by adopting the above methodology, infrastructure in education institutions can sustainably be developed to create a conducive learning environment and support the overall advancement of education necessary for Uganda's much-needed socio-economic development and prosperity.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this chapter, conclusions and recommendations derived from the presentation, analysis and discussion of results are presented concerning the impact of construction project management on the development of public education infrastructure of Mbale District Local Government (MDLG).

5.2 Summary of the findings

The study aimed to evaluate construction project management practices employed in the development of education infrastructure in Mbale District Local Government, establish the impact of construction contract practices on the development of education infrastructure by Mbale District Local Government, evaluate the role of stakeholders' involvement in the lifecycle of education infrastructure projects in Mbale District Local Government and develop an appropriate methodology to improve the delivery of education infrastructure in Uganda. From the findings, it was revealed that improvements in construction project management practices are closely linked with advancements in education infrastructure development.

Not only that, the findings also suggest that directing considerable attention towards improving construction project management practices, such as open bidding, compliance with financial regulations for payments, stakeholder involvement in work plan development, and comprehensive monitoring and supervision by all concerned parties, including end-users, is likely to lead to enhanced education infrastructure development in Local governments across Uganda.

In addition, the findings revealed a pivotal role of stakeholder involvement in driving positive advancements in education infrastructure development. By actively engaging stakeholders in construction projects, Local Governments can enhance the effectiveness and efficiency of infrastructure initiatives, ultimately leading to improved educational facilities and services for communities. All in all, the findings show that significant improvements in construction project management practices, coupled with increased stakeholder involvement, have the potential to enhance education infrastructure development in Local Government areas. Therefore, the findings indicate that contract management plays a crucial role in influencing the progress of education infrastructure development.

5.3 Conclusions

In general, the researcher concluded that construction project management is vital and significantly impacts education infrastructure development in Mbale District Local Government. For instance, refer to Table 1.1, it is observed that huge sums of money are injected into infrastructure development and if there are no effective construction project management practices, a lot of funds will go to waste. Regarding objective number one, the research concluded that the major practices applied by Mbale District Local Governments are public bidding, making payments according to financial regulations, adequate collaboration with stakeholders, limiting political interference and avoiding the diversion of project funds. These practices were the most ranked according to the research findings. Concerning objective number two, based on the findings, the study concluded that construction project management practices have a significant impact on education infrastructure development. Lastly, regarding objective number three, the study concluded that the role of stakeholder involvement is fundamental to education infrastructure

development. As a result, the study developed a proposed methodology to support Local Governments in Uganda to achieve sustainable education infrastructure development.

5.3 Recommendations

Based on study findings, which revealed a significant contribution of contract management practices and stakeholder involvement in education infrastructure development, the study recommended the following;

The study recommended Local Governments promote transparency and accountability in construction contract management practices by implementing clear governance structures, procurement procedures, and performance monitoring systems. Local Governments should ensure that procurement processes are transparent, contracts are awarded based on merit, and funds are allocated and utilized efficiently to avoid mismanagement and corruption.

It is also recommended that before awarding construction contracts, there should be a thorough assessment of the contractors' capability to execute the contract very well. This will help to reduce client-contractor conflicts, project completion delays by the contractors, abandoning of the project and poor-quality construction works. This should be done by promoting transparency in procurement.

The study recommended the adoption of a decentralization approach as opposed to the centralization of construction projects in local government. This would improve infrastructure development in schools and also reduce bureaucratic interference in the way of lotting projects and influencing procurement processes by the central government. In this regard, transparent procurement procedures should be emphasized. Meanwhile, I recommended that further studies should be done on the decentralization of construction works and the performance of education construction projects in local governments.

Local Governments should invest in capacity-building initiatives to enhance the skills and competencies of project managers, engineers, and other professionals involved in construction contract management within the education sector. This may include providing training programs on project management best practices, contract negotiation, risk management, and stakeholder engagement to improve project outcomes and minimize delays.

Local Governments should conduct regular consultations, soliciting feedback, and fostering partnerships with community members, educators, government officials, and other relevant stakeholders as comprehensive stakeholder engagement strategies. This will ensure that education infrastructure projects are aligned with the needs and priorities of the local community.

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APPENDICES

Appendix I: Questionnaire

Dear respondent,

My name is **Mukuru Silverio**, a student of Kyambogo University carrying out a study on the effect of **construction project management on education infrastructure development in Uganda**, as a requirement for the award of a Master of Science Degree in Construction Technology and Management of Kyambogo University.

I kindly request you to spare some of your time and fill in the questionnaire below. The response obtained will be treated confidentially and it's purely for academic purpose.

Please respond by ticking or where necessary make brief statements

Section A: General information of the respondent

1. Please tick in the box appropriately using this tick ✓

a) Male b) Female

2. What is your age range in years (*optional*)

a) 21-30 b) 31 – 40 c) 41– 50 d) 51years and Above

3. What is your highest level of education?

a) Diploma b) Degree c) Post graduate diploma

d) Masters

e) Others (please specify)

.....

4. Please indicate your marital status

a) Single b) Married c) Divorced d) Widowed

e) Widower

f) Others (please specify)

5. For how long have you worked in this organization?

- a) Less than 5 years b) 5-10 years c) 11 – 16 years
 d) 17 years and above

6. What is your position in your organization?

- a) Senior management level b) Middle management level
 c) Lower management level

Using the key given choose, by ticking, the statement that represents your opinion about construction project management in education infrastructure development in Mbale District Local Government:

(5 = Strongly Agree, 4 = Agree, 3 = Not Sure, 2 = Disagree, 1 = Strongly Disagree)

SECTION B: CONSTRUCTION PROJECT MANAGEMENT EFFICIENCY						
(i) Construction project Management Practices employed by Mbale District Local governments on education infrastructure development						
S/N	Statement	5	4	3	2	1
1	There is adequate collaboration of stakeholders for project success during implementation					
2	Materials used by contractors are as per Bill of Quantities (BOQ)					
3	Books of records are well maintained for purposes of follow-up					
4	Monitoring and supervision of projects are done by all concerned players					
5	Project managers do their work adequately and in a transparent manner					
6	Education infrastructure projects planning and implementation are negatively affected by political influence					

7	The process of selecting beneficiary schools follow the set guidelines by Ministry of Education and Sports and is transparent					
8	All potential bidders are called for bids publicly					
9	There is transparence in the procurement selection process where only the right contractors are procured for the right job.					
10	Funds for education projects are not diverted to do other activities					
11	All payment procedures are followed as stipulated in government financial regulations					
12	Participants of education infrastructural projects have different expectations and interests					
(ii) The role of stakeholders (end users) in education construction projects						
1	There is adequate user involvement at planning stage					
2	There is adequate end user involvement during implementation					
3	Stakeholders are always engaged to help in project monitoring and evaluation					
4	There is an improvement when stakeholders are involved in the education construction projects					
5	Stakeholders are important in project goals and objectives settings					
6	Stakeholders' involvement accelerates project implementation					
7	Stakeholders guide in project problem identification					
SECTION C: EDUCATION INFRASTRUCTURE DEVELOPMENT AND PROJECTS PERFORMANCE						
S/No	Statement	5	4	3	2	1
1	Education infrastructural development meets the expected quality expectations.					

2	Education construction projects are always completed within the estimated budget.					
3	Construction project is always completed in scheduled time frame.					
4	Quality of construction work in education sector is good					
5	The structures are always safe for users.					
	Value for money is always realized					
6	Education stakeholders are always satisfied with the standard of education structures in Mbale district.					
7	New buildings constructed in education institutions look good					
8	New buildings constructed provide good learning environment for learners and instructors					
9	New buildings constructed attract learners and teachers					

SECTION D: LEVEL OF EDUCATION INFRASTRUCTURE DEVELOPMENT OF MBALE DISTRICT LOCAL GOVERNMENT

Kindly rate, to the best of your knowledge, the level of education infrastructure development in government aided education institutions.

	Excellent	Good	Fair	Poor
Stakeholders' (end users) satisfaction of constructed buildings				
Efficiency and effectiveness of construction projects				
Timelines of projects completion				
Quality of work				

Thank you for your participation

Appendix II: Interview Guide

Dear respondent,

My name is **Mukuru Silverio**, a student of Kyambogo University carrying out a study on the effect of **construction project management on education infrastructure development in Uganda**, as a requirement for the award of Masters of Science Degree in Construction Technology and Management of Kyambogo University.

I kindly request you to spare some of your time and respond to the questions below. The response obtained will be treated confidentially and it's purely for academic purpose.

1. Do all stakeholders (end users) in education infrastructure development understand construction project management? If yes, how come that most development structures in education have issues?
2. How is the performance of contractors in education infrastructure development in local governments?
3. How does contract management affect the development of education infrastructure projects in local governments?
4. What parties are ever involved in construction project management in local governments?
5. Do you think every stakeholder, during projects implementation, performs their roles to the level they are required to perform?
6. Is there adequate supervision and monitoring of construction activities at sites? If no why?
7. Are there adequate funds for implementation, supervision and monitoring?
8. What could be external factors that influence the implementation of education infrastructure projects in local governments?
9. Are you satisfied with the way construction projects are implemented? If no, why?
10. What appropriate methods do you think can be adopted in order to improve the development of education infrastructure?

End

Appendix III: Document review checklist

- 1) Contracts/agreements**
- 2) Evaluation reports**
- 3) Minutes of site meetings**
- 4) Payment certificates**
- 5) Technical/project reports**
- 6) Contract approvals**
- 7) Needs assessment and project selection reports**

Appendix IV: Krejcie and Morgan Table for Determining Sample Size from a Given

Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Krejcie, Robert V., Morgan, Darlye W., *“Determining Sample Size for Research Activities”*

Education and Psychological Measurement, (1970).

Note: “N” is the population size

“S” is the sample size

**Appendix V: State of some of the Education Infrastructures in Mbale District Local
Government**

Bunawiire Primary School - 26 August, 2019



3 – Classroom block with office – Rear



Structural Crack above in wall



3 – classroom block with office – Front



Cracks in floors



4-classroom block – front



Cracks in floors



Other cracks on wall and aprons - Effect of moisture due to poor drainage around the structures



5-stance VIP Latrine



Staff House - abandoned due to defects



Typical floor damaged

