MAKERERE UNIVERSITY



MAKERERE UNIVERSITY BUSINESS SCHOOL

MANAGERIAL CONTROL SYSTEMS AND PERFORMANCE OF PUBLIC-SCHOOL CONSTRUCTION PROJECTS IN JINJA DISTRICT

BY

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PLAN A

DECLARATION

I Arishaba Aggrey, hereby declare that this research report entitled **"Managerial Control Systems and Performance of Public Construction Projects in Jinja District"** is my original work, and it has never been presented for any award at any institution of higher learning, and it is not concurrently submitted in candidature of any other degree.

Signature_____ Date 16/11/23

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APPROVAL

This research report has been submitted to the University with our approval as university supervisors.

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LIST OF ABBREVIATIONS

APA	**:**	American Psychological Association
JDPAR	**:**	Jinja District Performance Assessment Report
NGO	**:**	Non-Governmental Organizations
OAG	**:**	Office of Auditor General
PMI	**:**	Project Management Institute

DEFINITION OF TERMS

Managerial control **:** Managerial control is defined as an effort to persuade participants in building projects to act in accordance with agreeable tactics in order to attain the intended goals (Adams & Santos, 2006; Raelin, 2011).

Behavioural Control **:** Behavior control is process of assessing how clearly stated and carried out predetermined procedures and actions are (Bello & Gilliland, 1997).

Outcome Control **:** Outcome control is the process of assessing how the aims and goals of the project are met and reward the controlee accordingly (Ford, 2019; Kirsch *et al.*, 2002).

Clan Control **:** Clan control refers to having shared norms and values which are adopted by the group and can be generated through disciplined approaches agreed upon by the group to improve work production (Kirsch *et al.*, 2010; Ouchi, 1980)

Project Performance **:** Project performance is the achievement of planned outcomes in terms of project specifications, on-time completion of activities, and completion of the project within the agreed-upon budget and quality (Takim & Akintoye, 2002; PMI, 2004).

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ABSTRACT

The purpose of the study was to examine the relationship between managerial control systems and performance of public school construction projects. The study was guided by three specific objectives; to establish the relationship between behavioural control, outcome control and clan control on performance of public schools construction projects in Jinja District Local Government. The study was anchored on the control theory and targeted 80 public school construction projects, with a sample size of 66 projects. The study used a cross sectional design, collected data using a survey questionnaire which were checked for validity and reliability by the use of expert judgement and Cronbach's Alpha Coefficient respectively. The data were analysed using descriptive and inferential statistics, and the findings indicated a significant relationship between behavioural, outcome and clan control systems with performance of schools construction projects. The study concluded that to improve performance of school construction projects, behavioural control, outcome control and clan managerial control systems are a major perquisite. The study recommends that school construction stakeholders need to shift their focus towards managerial control systems more so behavioural, clan and outcome control systems to attain the stipulated indicators of school construction project performance. Therefore, future studies may apply a mixed research design or any other design especially, longitudinal, case study, or explanatory research design to enable us to gain more insights and accurate findings concerning the relationship between behavioral, clan and outcome control on project performance.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter discusses the study background, problem statement, study purpose, objectives of the study, hypotheses, scope of the study, justification for the study and the conceptual framework.

1.1 Background to the study

The performance of construction projects is attracting much attention due to a tremendous increase in urbanisation (Kang *et al.*, 2018). Project performance of construction projects is key in ensuring growth and development of the country. Project Performance refers to completion of project objectives as measured in terms of cost, time quality and customer satisfaction (Sambasivan & Soon, 2007).

However, studies have revealed poor performance of construction projects on the global scene (PMI & KPMG, 2019; PMI, 2016). For instance, a study by Chai and Yusof (2013) in Malaysia observed project delays leading to poor quality, cost and time overruns. Ansar, Flyvbjerg, Budzier and Lunn (2016) while studying 65 large capital investment projects Japan, Germany, Netherlands, USA and UK, noted an average time overruns of 42.7% in construction projects. This situation is not peculiar in Africa, where project performance has continued to decline as observed in Nigeria with multiple abandoned projects and collapsing of public buildings (Muhammad *et al.,* 2015; Ogunde *et al.,* 2017). In Kenya, a study by Oyugah and Onyango (2019) noted that in the recent past, public construction projects have frequently registered poor performance due to their failure to meet scheduled timeliness and estimated cost. Relatedly, Alinaitwe (2013) in Uganda observed declining project

performance, a practice costing the taxpayer over UGX 25 Billion monthly and approximately UGX 300 Billion annually. in addition, Uganda Road Fund Report (2015) and Aluonzi, Oluka and Nduhura (2016) highlighted increasing cases of incomplete and collapsing public construction projects leading to declining levels of stakeholder satisfaction. Contextually, according to the District Quarterly Performance Report (2019) on performance status of construction projects in Jinja, the construction projects in Jinja District are characterised by time delays, costs overruns and shoddy works. Hence studies that seek to enhance performance of construction projects are paramount.

From a theoretical perspective, the control theory points that distinct control modes help enhance the performance (Tiwana & Keil, 2009). Tiwana and Keil (2009) argues that project managers are controllers who establish managerial controls that provide standards and guides actions of employees which ultimately enhances project performance (Maqsoon, 2020). Control is a set of procedures and guidelines that support and enhance employee behavior to stays within predetermined bounds (Tiwana & Keil, 2009).

The three facets of managerial control (behavioural, outcome and clan) influence performance of projects by ensuring that employees follow the established standards of professionalism (Goldbach *et al.*, 2018; Ahsan, Hamad, Ashraf, 2020; Huang *et al.*, 2014; (Keil *et al.*, 2013). Despite the wide research on managerial controls and project performance (Kirsch *et al.*, 2002; Goldbach *et al*., 2018), the findings are still mixed. For instance, Keil *et al*. (2013) and Tiwana *et al.* (2009) alludes that project performance can be enhanced by applying several sorts of control methods whereas Liu (2015a) and Malik *et al.* (2019) found out the opposite. In addition, there is scarcity of research regarding managerial controls and performance of projects in Public settings yet, different projects have got different risks which demands different control mechanisms (Qazi *et al*., 2016). Therefore, a need for a further investigation.

1.2 Problem Statement

Performance of public construction projects is a perquisite to economic development. As a result, the Government of Uganda has put drastic measures like managerial controls to ensure the performance of public construction projects (Office of the Auditor General Report, 2016). However, statistics indicate that 70% of public construction projects are failing (IPM Report, 2019) while, 30% are completed behind time schedules, with cost overruns, and shoddy quality works that cannot aptly meet the needs and expectations of key stakeholders (OAG Report, 2016). On the same note, OAG Report (2018) and Jinja District Quarterly Performance Report (2019), depicted that majority of public construction projects in the road sector, education and health sector are failing. Consequently, this has made government to lose approximately UGX 25 billion monthly, translating into UGX 300 billion annually (Alinaitwe, 2013). This situation could also make the general public to lose trust in the implementation of public project and the entire government programmes which may worsen poverty levels in the country.

1.3 Purpose of the Study

The study is aimed to establish the relationship between managerial control system and performance of public construction projects in Jinja District.

1.3.1 Specific Objectives

The study was guided by the following objectives

i. To establish the relationship between behavioural control and performance of public construction projects in Jinja.
ii. To determine the relationship between outcome control and performance of public construction projects in Jinja.

iii. To find out the relationship between clan control and performance of public construction projects in Jinja.

1.3.2 Research Hypotheses

***H_{O1}*:** Behavioural control has a significant relationship with project performance

***H_{O2}*:** Outcome control has a significant relationship with project performance

***H_{O3}*:** Clan control has a significant relationship with project performance

1.4 Scope of the Study

The study focused on establishing the effect of managerial controls on performance of public construction projects in Jinja District. The study established the effect of three managerial control systems (behavioural, outcome, and clan control) and how each of them affect project performance. Project performance was conceptualised in line with the works of Abu-Mejier, (2019) which captures time, budget, quality and client satisfaction as measures of project performance. The study was carried out in Jinja District and targeted all public school construction projects in the three categories of primary, secondary and tertiary school construction projects. The justification for considering Jinja District as the study areas is that it is one of the public entities with a group of public construction projects that are characterized by poor performance (JDQP, 2018/2019). The study focused on 80 public school construction projects that were completed from the year 2015–2020. This being the period when public school construction projects started experiencing tremendous criticisms of declining performance (OAG, 2016).

1.5 Significance of the Study

The findings of the study could be significant to various stakeholders.

To Jinja District Local Government, the findings of the study could help the management to comprehend the significance and influence of managerial control system on the construction projects.

This study finding could benefit the planners in understanding how to develop policies that assist the construction industry in proper development of controls.

The findings of this study can significantly contribute to the existing knowledge regarding the concept of behavioural control on Project performance.

To Scholars, the study findings could provide gaps for further researchers to extend the available body of knowledge by benching on the study results and limitations to replicate the study findings using other contexts.

To policy makers like the government of Uganda, the recommendations of the study could help in the development of policy guideline to project managers on establishing the controls that guide employees' conduct on cite during execution or project works so as to enhance project performance by controlling the behaviour of employees.

1.6 Conceptual Framework

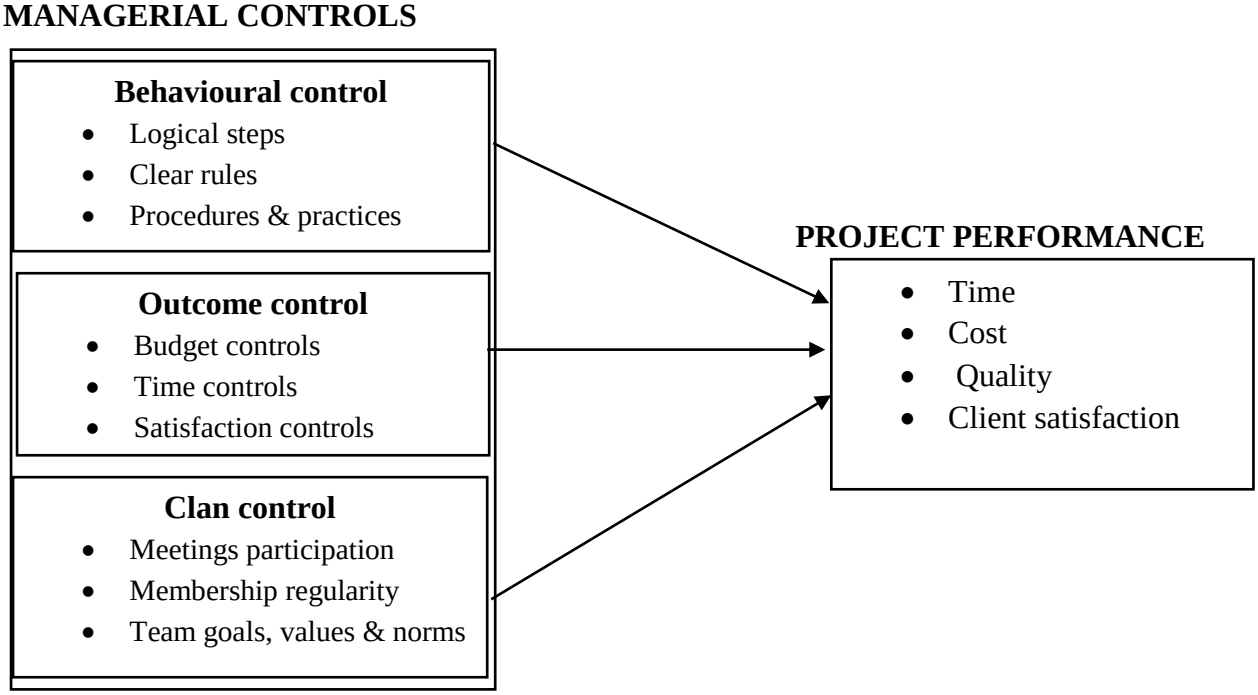


Figure 1: Conceptual framework

Source: Adopted from Liu (2012)

The conceptual framework in Figure 1 above was developed with the help of control theory to explain performance of school construction project measures of cost, time, quality and client satisfaction using managerial control systems of behavioural control, clan control and outcome control. The conceptual framework also indicate that specifically behavioural control influence performance of construction projects, outcome control has an association with performance of construction projects, and finally, clan control has a relationship with construction project performance.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter entails a review of literature as guided by the research objectives, the conceptualization of each construct and a theoretical overview of the study variables.

2.1 The Concept of Project Performance

Project performance is the achievement of planned outcomes in terms of project specifications, on-time completion of activities, and completion of the project within the agreed budget (Takim & Akintoye, 2002). The project is said to have performed if it is finished on schedule, under budget, and according to specifications, which is known as the "iron triangle" elements of project performance (PMI, 2004; Pollack, Helm & Adler, 2018). Scholars such as Ogunlana (2010) and Mohammed (2002) assert that cost, time, scope, and quality are the fundamental elements and criteria used to gauge a project's performance. The available body of knowledge on project management associates project performance with the fundamental triple constraints of time, cost and quality (Maqsoom *et al.,* 2019; Razzaq *et al.,* 2018). The triple constraints method is commonly used for assessing project success. Customer satisfaction has also been confirmed by studies as a fourth measure of project performance (Takim & Akintoye, 2002; Cheung, Suen & Cheung, 2004). In this study, project performance is measured in terms of cost, time, and quality and client satisfaction.

Since all projects must succeed in achieving their objectives, project performance has consistently been the primary focus of the literature on project performance (Ingle & Mahesh, 2020; Carvalho and Rabechini Junior, 2015). According to academics, project activities must be in line with the organizations' long-term goals because project performance is a

multidimensional concept (Carvalho & Rabechini Junior, 2015; He *et al.*, 2019). Additionally, because different stakeholders have different stakes in a project, project performance has multiple dimensions (Almohsen & Ruwanpura, 2016). Project performance is linked to the essential triple constraints of time, cost, and quality, satisfaction is another factor used to gauge a project's performance. Projects are deemed successful if they are finished within the allocated time and budget and meet the client's needs (Walter, Kreutzer & Kreutzer, 2021).

2.2 The Concept of Managerial Controls

In this study, managerial controls are defined as an effort to persuade participants in building projects to act in accordance with agreeable tactics in order to attain the intended goals (Adams & Santos, 2006; Raelin, 2011). Two important functions are involved in the application of managerial controls. The first one is the controller, who is in charge of creating and putting into practice particular control modes (Walter *et al.*, 2021; Kirsch *et al.*, 2002). The second is that of the controlee, whose actions and behaviours are altered by the control process and subject to the influence of the controller (Gomez-Mejia, Tosi, & Hinkin, 1987). The project managers in this study are the controllers, while the development team is the controlee. The two forms of controls that make up managerial controls are informal and formal controls. Formal controls affect the behavior of the controlee by outlining the processes and output requirements, determining if these criteria are met, and rewarding the controlee in accordance with the results (Abubakre, Ravishankar & Coombs, 2015). Two control modes are part of formal control (i.e., outcome and behavior controls). Behavior controls are designed to assess how clearly stated and carried out predetermined procedures and actions are (Bello & Gilliland, 1997). As an alternative, outcome controls allow the controllers to assess how aims and goals are met and reward the controlee accordingly (Ford,

2019; Kirsch *et al.,* 2002). On the other hand, informal controls influence the behavior of the controlees through the use of self-management and social tactics between controllers and controlees to encourage the joint achievement of shared objectives (Keeler *et al.,* 2020; Kirsch *et al.,* 2010). Among the three managerial controls, two controls are part of informal control (i.e. clan and self-controls). In clan control, both controllers and controlees adhere to the same standards and principles, use comparable techniques, and work towards shared objectives (Kanwal, Zafar & Bashir, 2017; Kirsch *et al.,* 2010). Self-control encourages controlees to create their own tasks and goals, complete those tasks independently and reward themselves basing on their unique performance (Kirsch *et al.,* 2010).

The literature on managerial controls identifies three standard categories of controls: clan, behaviour, and result (Turner & Makhija, 2006). The specification and assessment of desired task outcomes and behaviors are the main concerns of outcome and behavior controls. Clan controls use socialization and input (such as training and selection) techniques to affect the behavior of controlees (Croitor *et al.,* 2022; Kirsch, Ko & Haney, 2010). Organizational controls are the subject of a growing corpus of study that looks at how they affect performance in diverse empirical contexts. These studies often claim that controls improve performance because they reduce the degree to which controlees act opportunistically and in their own self-interest (Kirsch *et al.,* 2010).

2.3 Theoretical review

A theoretical review refers to a set of interrelated ideas based on theories or a reasoned set of prepositions derived and supported by evidence about an explained phenomena (Turner *et al.,* 2018). The study was guided by control theory.

2.3.1 Control Theory

Project control, which is considered to be the most important aspect of project performance, is characterized as motivating desired behaviour in order to advance the goals of the company (Kivilä, Martinsuo & Vuorinen, 2017). Controls are exercised using a variety of techniques that can be compiled into distinct control modes and set up as a full control package (Malmi & Brown, 2008). According to researchers like Tiwana and Keil (2009), control is a set of procedures and regulations that enhance employee conduct and keep it within predetermined bounds. The term "controller" was first used by Kirsch (1997), and it was further defined by Tiwana and Keil (2009) from the standpoint of project management. Project managers are referred to as controllers in the current study. Both formal and informal control mechanisms can be used to implement control theory. While clan and self-control are informal methods of control, whereas behaviour and result controls are referred to as formal controls (Kirsch, 1997; Tse *et al.,* 2019). The performance evaluation system is typically connected to formal control modes. When formal ways of control are used, the controlees' activities are measured and they are rewarded in accordance with the current assessment system (Goldbach *et al.,* 2018). In behavior control, a person's reward is based on how closely their actual activities match those that are set as acceptable. When observable and recognized behaviors are present, behavior control is most effective (Kirsch *et al.,* 2002). Informal techniques of control are predicated on adhering to some sort of group standards and personal ideals. Clan control is used when outcomes are not measurable or required behaviors are unknown (Malik *et al.,* 2019), whereas self-control depends on an individual's own objectives, principles and innate drive. For instance, clan control is based on shared beliefs and common values that exist in a group with common objectives (Ford, 2019). Project managers must apply control mechanisms effectively if they want to meet quality standards and the triple constraint requirements of a building project (Malik *et al.,* 2019).

2.4 Empirical Review of Literature

2.4.1 Behavioural Control and Project Performance

The project controller's (project manager) ability to successfully oversee the projects' development depends on behavioural control (Zahoor *et al.,* 2021). To prevent mistakes and rework, behavioural control requires the controlees (team members) to adhere to processes and rules (Rodney Turner, 2022). This arrangement makes it easier to create medical apps and guarantees affordable, on-time delivery. Additionally, developers can work efficiently and produce high-quality products by assessing how clearly defined processes and actions are carried out in order to meet project objectives.

A foundation for improved construction project performance is provided by behavioural control, which combines rules, guidelines, standard operating procedures and practices (Abubakre *et al.,* 2015). Typical methods for achieving behavioural management include regular meetings, walkthroughs and weekly or monthly reports (Ning, 2017). Individuals are able to adhere to predetermined rules and procedures in order to fulfil the established objectives in an organizational atmosphere that reflects behavioural control approaches. As a result, there are fewer instances of poor communication and coordination, and as a result, there are less opportunities for time, cost, quality, and safety to drop. When considering the relationship between behavioural control and project performance, Liu (2015a) points out that behaviour control is crucial in influencing a controlee's behaviour to adopt pertinent procedures and guidelines to carry out project work, which reduces project errors and increases system reliability.

In behaviour control, controllers (i.e. user liaisons) emphasize the appropriateness and importance of managing processes (Keil *et al.,* 2013). Behavioural controls guarantee that controlees follow proper procedures to reduce project errors and revisions and consequently

improve system reliability. An evaluation of how articulated rules and procedures are executed upon the achievement of project goals enables team members to implement project tasks effectively. User liaisons can also effectively monitor the status of project outcomes (Henderson & Lee, 1992). Behavioural controls ensure that the project is implemented according to the plan and provides a structured method of system development to avoid uncertainty and produce a system that is consistent with the expectations of users.

Empirical studies have established the antecedent role of behavioural controls on project performance. A study by Todd, Notebaert and Clarke (2022) revealed that behavioural controls enhance the performance of projects. Another study by Tetteh *et al.* (2021) revealed that behavioural controls enhance the performance of projects. In another study by Kanwal *et al*. (2017), behavioural controls were found to enhance project delivery. A study by Liu (2015) which was based on quantitative data obtained from 128 information systems projects, revealed that behavioural controls were empirically determined to be positively associated with the system performance of projects.

2.4.2 Outcome Control and Project Performance

In order to accomplish project objectives, outcome controls are crucial. The effective planning and execution of linked tasks can be aided by outcome controls, which support the achievement of performance objectives (Ko *et al.*, 2021).

Predefining the tasks that team members must complete at a specified time, followed by evaluating the performance of the controlees based on the task completion data, is the most effective way to implement outcome controls (Dekker, 2004; Kirsch *et al.*, 2010). For examples, outcome controls are associated with much benefits including project milestone requirements for quality and cost (Ning, 2017). Predefinition of tasks enables team members to comprehend objectives and the scope of work, resulting in prompt accomplishment of

project objectives (Yang *et al.,* 2022). Keil *et al.* (2013) remark that outcome controls support effective planning and execution, which promotes the achievement of performance goals.

The offering of rewards is a crucial component of outcome control to attain predetermined results by rewarding individuals, teams and organizations. Such a reward-based program encourages individuals, teams and organizations to put in extra effort in order to reap rewards which serve as a foundation for achieving project goals and project success. Empirical studies have revealed that outcome controls enhances performance of projects. For instance a study by Ko *et al.* (2021) revealed that Coordination and controls are viewed as an important project management strategy for managing project activities.

The importance of achieving project goals is emphasized in outcome controls. User liaisons can efficiently provide feedback on corrections and improvements by reviewing completed work (Klein *et al.,* 2006; Love & Josephson, 2004). Therefore, systems can be delivered with the intended functional requirements. Outcome controls also enhance the efficiency of selecting, planning and implementing related work leading to the achievement of performance goals (Bello & Gilliland, 1997). In addition, outcome control enables projects to have unambiguous goals and scope and thus allows developers to meet user expectations (Barnes & Targett, 1999). The predefined benchmarks and evaluation criteria can also lead to the delivery of high-quality systems.

2.4.3 Clan control and project performance

Clans generate values and norms through careful socialization; individuals who share a collective ideology are thus able to adopt internalized values and commit to the clan (Orlikowski, 1991; Choudhury & Sabherwal, 2003). Performance is also the result of cooperative relationships with collective norms and values (Kirsch *et al.,* 2010). User liaisons can develop a cooperative working relationship with project developers to ensure that a

reliable system is delivered by fostering mutual understanding or by actively attending project team meetings (Lee & Cavusgil, 2006; Ouchi, 1980). Clan control can also provide input and support by working with the project team as regular members to improve system performance. Additionally, clan control enables the final system to incorporate business values and ideas from users and developers. Information system (IS) projects can be completed successfully only with a close working relationship and common understanding between developers and users (Kirsch, 2004).

In clan control, shared norms and values are adopted by the group and effective work production can be generated through disciplined approaches agreed upon by the group (Kirsch *et al.,* 2010; Ouchi, 1980). Thus, better performance can be achieved through cooperative and trust-based relationships (Robert *et al.,* 2013). The mutual understanding of norms and goals between client liaisons and developers enables developers to understand the requirements and expectations of client liaisons and guarantees that satisfactory medical IS project is delivered (Lee & Cavusgil, 2006). In addition, clan control can overcome the issues that stem from professional and complex information, which is often involved in medical IS projects, by facilitating the effective exchange of information and expertise. As such, project performance can be largely improved.

Empirical studies have established the antecedent role of clan control on project performance. A study by Chua, Lim, Soh and Sia (2012) on information technology projects revealed that project controllers achieve project performance by leveraging the clan by reinforcing project-facilitating shared values, beliefs, and norms, and inhibiting those that impede the achievement of project goals. Another study by O'Dwyer, Conboy and Lang (2013) revealed that clan controls enhance the performance of project teams. Further more, empirical studies by Liu (2015), Kanwal *et al.* (2017) and Rijsdijk and van den Ende (2011) revealed that clan controls enhance performance of projects.

2.5 Conceptual Gaps in Literature

First, there is conflicting linear support for the hypothesis that managerial control systems improve performance (Cardinal *et al.,* 2017). Whereas some studies have revealed that managerial controls do not influence project performance (Liu, 2015), other studies such as Tiwana and Keil (2007) reveal that managerial controls have a significant influence on project performance. In particular, there have been conflicting results in earlier studies about the effects of clan, behaviour, and outcome controls on performance. For instance, numerous studies have indicated that outcome control improves performance (Liu, 2015; Tiwana, 2008; Klein *et al.,* 2006), whereas other studies have discovered that this effect is negligible or even adverse (Aulakh *et al.,* 1996; Bonner *et al.,* 2002; Tiwana & Keil, 2020; Gopal & Gosain, 2010). Similarly, there are conflicting results about the influence of behavioral and clan controls (Aulakh & Gencturk, 2000; Bello & Gilliland, 1997; Bonner *et al.,* 2002; Tiwana, 2010; Tiwana & Keil, 2009).

As a result, more empirical research is required to determine whether and how much managerial control systems are linked to project performance. Second, how one control interacts with another control may affect how well it performs. In order to accomplish the desired performance, some studies have chosen a solitary perspective on control and advocated using one type of control over another (Cardinal *et al.,* 2017). For example, behavioural control rather than outcome control or clan control rather than behavioural control. In other words, studies have argued that employing one sort of control reduces the efficiency of the others while utilizing others serves as a substitute (Ouchi, 1979). Modern scholars have adopted a holistic perspective on control and support the idea that many managerial controls interact to affect performance. These researchers specifically propose that the various controls act as complements, and that applying one type of control increases the effectiveness of the others (Kreutzer *et al.,* 2015). Cardinal *et al.* (2017) asserted in a

recent review that our knowledge of typical control setups in organizations and how various controls interact with one another is still lacking. Achieving the intended performance is highly dependent on the sorts of control managers exert, according to a managerial perspective (Cardinal *et al.,* 2017). Managers are likely to be perplexed by the current contradictory findings about the interaction of outcome, behavioural, and clan controls. Therefore, it is important to be clear about whether and how various controls work together to increase performance.

The present study adds to the project management literature by exploring the influence of managerial control systems on project performance, which has been largely ignored in previous research because main work on managerial control addresses different situations (Keil *et al.,* 2013). Third, most construction project literature focuses on situations in rich countries, mainly ignoring the theoretical and practical ramifications of construction projects in developing nations like Uganda. Thus, by analysing construction projects in a non-western setting, this study advances the discipline.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents research design, study area, target population, sample size and sampling technique, data collection instruments, data-quality control, data collection procedure, measurement of variables, data analysis techniques and ethical considerations.

3.1 Research Design

Research design is a plan or blue print that guides the research process (Cresswel, 2005). The study adopted a quantitative research design which is cross–sectional in nature. Quantitative design allows the researcher to collect quantifiable data. A cross sectional design is a design that collects data from the elements of interest at one point in time (Cresswell, 2008). Cross sectional survey design allows the researcher to compare many different variables at one point in time at a relatively minimal cost (Cresswell, 2008).

3.2 The Study Area

The study was conducted on public schools construction projects in Jinja District. Public construction projects are the projects that are being funded by the Government to build public schools. The justification for considering public projects is that these projects register high failure rate in terms of delay and meeting the stated budget. Jinja District was of interest because the construction of public schools projects in Jinja District are characterized by poor performance according to Jinja district performance assessment report (JDPA, 2018/2019).

3.3 Target Population

Population refers to the entire group of people, things or elements that the researcher wishes to investigate and make inferences (Sekaran, 2003). The target population of this study comprised of public construction projects in Jinja district that were completed from 2010 to 2019. The target population is comprised of 80 public construction projects that are categorised into primary, secondary and tertiary school construction projects (**See appendix III**). The unit of analysis was public schools construction projects in Jinja district, while the unit of inquiry consisted of key employees like project engineers, project designers, project managers, procurement professionals, contractors, project internal auditors, technical planning committee, district education officer and chief administrative officer. These project employees were identified and a minimum of 03 employees in each project was selected from the list/sample frame which was provided to the researcher by the Jinja district engineering department. The responses from the employees were aggregated to the unit of analysis level which are the projects.

3.4 Sample Size and Sampling Technique

3.4.1 Sample Size

Sample size refers to the proportion of the population that the researcher intends to get responses from (Babbie, 2005). The purpose of sampling is to gain a clear understanding about characteristics of the whole population based on such observable characteristics of the sample (Thompson, 2004). The sample size in this study was determined using Krejcie and Morgans (1970) table for sample size determination. From the targeted study population of 80 projects, a sample size of 66 projects was used as a basis for drawing inferences.

3.4.2 Sampling Technique

Sampling technique is the method used to select the elements from the population (Sekaran, 2003). The study used simple random sampling. Simple random sampling is a sampling technique where all members in the population have a known none zero chance of being selected (Tabachnique & Fidel, 2010). The justification for simple random sampling is that it avoids biasness by giving all members an equal chance of being selected to participate the study (Kothari, 2004). In line with the recommendation by Kothari (2004), simple random sampling was performed by writing down the names of the projects on small pieces of paper and then mixed in a box, and randomly pick the required number of the sample.

3.5 Data collection Instruments and procedures

3.5.1 Data collection instruments

Data collection instrument refers to the tool the researcher uses to get the required data from the respondents (Kothari, 2008). Questionnaire was used as a data collection tool for this study. A questionnaire is a data collection instrument comprising of a series of questions to be answered by the respondents (Bill, 2011). The questionnaire as a data collection instrument is preferred as it allows in-depth research to gain first-hand information and more experience on the research phenomena over a short period of time (Sekaran, 2003). The questionnaire comprised of three sections (A, B and C), and the questions was measured on a five Likert scale ranging from 1-strongly disagree – to 5- strongly agree. Section A is composed of the demographic characteristics of the respondents while section B comprised of the questions measuring managerial control systems while section C comprised of questions measuring project performance.

3.5.2 Data Collection Procedures

Data collection procedure refers to the steps one under takes while collecting the data (Zikmund, 2010). Prior to data collection, the researcher obtained an introductory letter from Makerere University Business School. The researcher then presented the letter to the management of Jinja district in the department of Education and engineering seeking permission to collect data regarding managerial controls and performance of school construction projects. The actual process of data collection involved issuing the questionnaire to the target respondents. The respondents were then requested to complete the questionnaires by way of ticking respective responses that are reflective of their opinion about the various statements in the questionnaire consistent with the suggestions of (Saunders & Lewis, 2007). The filled data questionnaires were collected back by the researcher for further processing and analysis.

3.6 Measurement of Variables

The study variables were measured on a 5-point Likert scale. Zikmund *et al.* (2013) recommends that a Likert scale with five-point or more offers more variance and have a higher degree of measurement and information. The study variables were measured using 11-Item questionnaire established by Kirsch *et al.* (2002). For instance, behavioural control was measured by 03-items which taps (logical steps, clear rules and procedures and practices). Outcome control was measures with 04-items including (budget, time controls and satisfaction controls), whereas clan control was measured with 04-items involving (meeting participation, membership regularity, team goals and values and norms). A sample of items which were used include; “The project team follows an understandable written sequence of steps toward the accomplishment of project goals” (behavioural control), “significant weight is placed upon timely project completion” (outcome control), “the project clients actively

participated in project meetings to understand the goals, values and norms of the development team (clan control). Project performance was measured by 19-items adopted from Jiang and Klein (2004) and Wallace *et al.* (2004) which measures project performance with cost, time, and quality and client satisfaction. Sample items include; ' The project activities are usually carried out in the agreed time'.

3.7 Validity and reliability of the research instruments

3.7.1 Validity of the research instrument

Validity refers to the ability of the data collection instrument to measure what the researcher intends it to measure (Saunders & Lewis, 2009). The instrument was checked for content validity which refers to the degree to which the instrument contains the adequate number of questions to measure the variable. This study used content validity index to measure the validity of the research instrument (Newman *et al*., 2013). The justification for measuring content validity was to ensure that the items provide an adequate and representative sample of all the items that measure the variables. The content validity index was derived from responses of experts from the topical area (Lynn, 1986). The experts rated each item in terms of its relevance on a four point Likert scale ranging from 1=not relevant, 2= somewhat relevant, 3=quite relevant, 4= highly relevant. The justification for using four Point Likert scale was to avoid the biasness of centroid (Lynn, 1986). The CVI of the items were then computed by dividing the number of experts who rated the goodness of an item with 1, 2, 3, or 4, by the total number of experts. Only items which raised the content validity index (I-CVI) score of 0.8, 0.9 or 1.0 were retained and those items which scored below 0.8 were eliminated in line with the recommendation by Lynn (1986).

3.7.2 Reliability of the research Instrument

Prior to data collection, the research instrument was checked for reliability. Reliability is the extent to which a data collection instrument yields consistent results after repeated trials (Tabachnich & Fidel, 2013). Kimberlin and Winsterstein (2008) opines that reliability helps to check how replicable the research findings are. Reliability was checked using Cronbach alpha and a value of Cronbach alpha above 0.7 was targeted as recommended by Saunders *et al.* (2009).

The reliability results indicated that all the study variables scored a Cronbach Alpha Coefficient of above the recommended threshold of 0.7 (Nunnally, 1967). Project performance scored a Cronbach alpha of (0.77), behavioural control (0.81), outcome control (0.84) and clan control (0.80), implying that all items were reliable. Regarding validity, the Content Validity Index was determined using expert judgement where the number of valid items were divided by the total number of items in the questionnaire instrument and all variables scored above the recommended threshold of 0.7 (Nunnally, 1967). Project performance scored a CVI of (0.71); behavioural control (0.81); outcome control (0.83) and clan control (0.74), implying that all instruments were valid as indicated in table 1 below;

Table 1: Validity and Reliability analysis for the research instruments

Variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items	CVI
Behavioural control	0.81	0.82	04	0.81
Outcome control	0.84	0.86	04	0.83
Clan control	0.80	0.81	04	0.74
Project Performance	0.77	0.78	09	0.71

Source: Survey Data (2023)

3.8 Data Analysis and Presentation

Data analysis is the process of categorising, ordering, manipulating and summarizing the data to answers the research hypotheses or questions (Kerlinger, 1973). The collected data was screened for missing values and irrelevant responses and coded. The questionnaires were then entered into SPSS software version 22 for analysis. Data analysis involved descriptive statistics and inferential statistics. Regression analysis was done to test the three study hypotheses; behavioural control has a significant relationship with project performance; outcome control has a significant relationship with project performance; and clan control has a significant relationship with project performance. Descriptive statistics were used to assess the data characteristics regarding the respondents' bio data and the responses from respondents on the study variables. Descriptive results were presented using frequencies, percentages, mean and standard deviation. Regression results were presented using standardised beta coefficients and where the P value is less than 0.05, the null hypothesis was rejected and alternative hypotheses accepted to conclude that there exists a significant relationship between the independent and dependent variable.

3.8.1 Descriptive Statistics

Descriptive statistics was done to provide intuitions into the sample characteristics. Descriptive statistics helps to transform the data into an easily understandable form (Zikmund *et al.,* 2010). Descriptive statistics was conducted to describe the demographic profile of respondents like age, gender and level of education and to describe the nature of respondents' responses. The results were reported using mean, frequency and standard deviation (Samuelson, 2010) and presented using tables.

3.8.2 Inferential Statistics

Inferential statistics was done to generalise the findings of the study to the study population. Inferential statistics refers to the analysis of data from the sample and generalisation of findings to the target population (Hair *et al*., 2010). Regression analysis is a statistical technique that explains the change in the dependent variable as a result of a change in the independent variable (Hair *et al.*, 2010). To generalise findings to the study population, inferential statistics was conducted by analysing the data using regression analysis in line with the research hypotheses: behavioural control has a significant relationship with project performance; outcome control has a significant relationship with project performance; and clan control has a significant relationship with project performance. Regression analysis aimed to test the variation explained by managerial control systems (behavioural, outcome and clan) on project performance.

3.9 Ethical Considerations

The ethics of conducting research were put into consideration. Research ethics refers to the principle that one must adhere to when conducting research (Macmillan & Schumacher, 1984). When conducting the research, the researcher considered the following research ethical issues; seeking informed consent from the respondents before obtaining data from them, and anonymity where the research instrument did not have any identification of the respondents' names. The researcher also informed the respondents that participation is voluntary but their participation is important. As recommended by American Psychological Association (APA 2010), the researcher ensured that all consulted documents are acknowledged.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATIONS

4.0 Introduction

This chapter comprises of data analysis, interpretation and presentation of finding by starting with the study response rate, demographic profile of respondents, descriptive statistics of the study variables, correlation analysis and hierarchical regression analysis.

4.1 Response Rate

The study targeted sixty-six (66) public school construction projects of which, fifty-five (55) projects were responded to, implying that the response rate was 83.3%, which is vey high. The high response rate can be explained by the researcher's ability of sending constant reminders to the respondents requesting them to fill and submit the filled questionnaires on time, which they complied with thus raising the response rate to 83.3%. This is in tandem with the works of Mugenda and Mugenda (2003), who posited that a response rate above 50 percent is decisive for survey data and therefore the response rate for this study was adequate as seen in Table 2.

Table 2: Response rate

Projects	**Frequency**	**Percentage**
Targeted projects	66	100
Response rate	55	83.3
Non-response rate	11	16.6
Total	**66**	**100**

Source: Survey Data (2023)

4.2 Demographic Profile of Respondents

The study analysed for demographic characteristics of the respondents to get an insight into the characteristics of the respondents. The demographic characteristics included; gender, age, education background, and project category as indicated in Table 2 below.

Table 3*:* Respondents' demographic profile

Items	Categorization	Frequency	Percentage
Section (A1)			
Gender	Male	91	55.15
	Female	74	44.84
	Total	**165**	**100**
Age Bracket	Below 20 years	32	19.39
	20-30 years	37	22.42
	30-40 years	49	29.69
	Over 40 years	47	28.48
	Total	**165**	**100**
Education Level	Certificate	11	6.66
	Diploma	29	17.57
	1st Degree	79	47.87
	Post graduate	46	27.87
	Total	**165**	**100**
Section (A2)			
Project Category	Primary school projects	18	27.27
	Secondary school projects	20	30.30
	Tertiary school projects	28	42.42
	Total	**66**	**100**

Source: Survey Data (2023)

The findings in Table 3 indicates that 74 (44.84%) of the respondents were females, while 91 (55.15%) were males. The implication is that the majority of respondents who participated in the study were males. The findings also showed that 32 (19.39%) of respondents were below the age of 20 years, 37 (22.42%) were between 20–30 years, 49 (29.69%) were between 30–

40 years, and 47 (28.48%) were over 40 years. Furthermore, the findings also indicated that 11 (6.66%) of the respondents had certificates, 29 (17.57 %) were diploma holders, 79 (47.87%) had a degree, 46 (27.87%) have a post-graduate degree. This means that majority of respondents had degrees, and thus, the respondents had the required ability to thoughtfully comprehend and provide reliable responses to each questionnaire item as raised, and this level of qualification is in one way or the other correlated with better project performance. As regards project category, the findings reveal that 18 (27.27%) of the projects were primary school construction projects, 20 (30.30%) of the projects were secondary school building projects, and 28 (42.42%) of the projects were tertiary school construction projects, which implies that all the three categories of the school construction projects were represented.

4.3 Descriptive Statistics of the Study Variables

The purpose of conducting descriptive statistics was to enable the researcher to present the quantitative characteristics of the collected data in a more meaningful way to ease the interpretation of the findings (Altman & Bland, 1996).

Table 4: Descriptive statistics for the study variables

Variable (s)	Mean	Std. Deviation
Behavioural control	3.82	0.45
Outcome control	3.63	0.69
Clan control	4.26	0.44
Project performance	4.21	0.38
N=66		

Source: Survey Data (2023)

The finding in Table 4 reveals that the respondents agreed with the questions regarding behavioural control in the respective projects where they participated (Mean = 3.82, SD = 0.45). The respondents further agreed with the statements that measured outcome control Mean = 3.63, SD = 0.69). The respondents also agreed with the statements that clan control

(Mean = 4.26, SD = 0.44). Finally, the respondents agreed with the statements that aimed at assessing their perception about project performance (Mean = 4.21, SD = 0.38).

4.4 Correlation Analysis for the Study Variables

Correlation analysis was conducted using Pearson Correlation coefficient to determine the degree and direction of any possible existing linear relationship between the predictor variables (behavioural, outcome and clan control) and the dependent variable (Project Performance) as demonstrated in Table 5 below.

Table 5: Correlation analysis for the study variables

Variables	**BC(1)**	**OC(2)**	**CC(3)**	**PP(4)**
1. Behavioral Control **(1)**	1			
2. Outcome Control **(2)**	0.58**	1		
3. Clan Control **(3)**	0.43**	0.46**	1	
4. Project Performance **(4)**	0.31**	0.34**	0.45**	1

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

N=66

Source: Survey Data (2023)

4.4.1 Behavioural Control and Project Performance

The results in Table 5 above indicate that there is a significant relationship between behavioural control and project performance ($r = 0.31^{**}$, p-value < 0.01), implying that a unit change in behavioural control leads to a 0.31-unit subsequent change in project performance.

4.4.2 Outcome Control and Project Performance

As regards outcome control and project performance, the findings also show that there is a significant relationship between outcome control and project performance ($r = 0.34^{**}$, p-value

< 0.01), which implies that there is 0.34-unit change in project performance caused by a unit change in outcome control.

4.4.3 Clan Control and Project Performance

The results further indicate that there is a significant relationship between clan control and project performance ($r = 0.45^{**}$, p-value < 0.01). This means that a unit change in clan control causes 0.45-unit change in project performance.

4.5 Regression Analysis

The study tested for the direct effect of behavioural control on project performance, the relationship between outcome control and project performance and the relationship between clan control and project performance. The study used hierarchical regression to determine the predictive power of managerial control systems dimensions of behavioural control, outcome control and clan control on project performance. Hierarchical regression is an analytical technique where the predictor variables are entered in blocks to determine the influence of one predictor variable on the dependent variable while holding other predictors constant (Tabachnich & Fidel, 2010).

In model one, the first independent variable (behavioural control) was entered to establish its effect on the dependent variable (project performance). In model two, the second predictor variable (outcome control) was entered to establish its effect on project performance while holding behavioural control constant. In model three, clan control was entered to establish its effect on project performance while holding behavioural and outcome control constant as indicated in Table 6 below.

Table 6: Hierarchical regression results

Model		B. Unstd	S.E	B. std	T	Sig.
1	(Constant)	3.20	.383		8.364	.000
	BC	.26	.099	.31	2.665	.010
2	(Constant)	2.75	.435		6.319	.000
	BC	.14	.115	.16	1.236	.221
	OC	.20	.103	.27	2.022	.047
3	(Constant)	2.15	.474		4.535	.000
		.06	.113	.07	.585	.561
	BC	.13	.103	.17	1.254	.214
	OC CC	.29	.110	.33	2.635	.011

Model summary statistics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	Sig. F Change
1	.316[a]	.100	.086	.36735	.100	7.102	.010
2	.393[b]	.155	.128	.35880	.055	4.087	.047
3	.490[c]	.240	.203	.34299	.085	6.941	.011

a. Dependent Variable: Project Performance

Legend: BC (Behavioural Control); OC (Outcome Control); CC (Clan Control)

Source: Survey Data (2023)

The first study objective sought to establish the relationship between behavioural control and project performance. The findings in Table 6 reveal that behavioural control has a positive and statistically significant effect on project performance (Std. $\beta = 0.31$, $p < 0.01$). These results indicate that with each unit increase in behavioural control, project performance increases by 31% units.

The second objective sought to establish the relationship between outcome control and project performance. The findings reveal that outcome control has a positive and statistically

significant effect on project performance (Std. $\beta = 0.27$, $p < 0.01$). These results indicate that with each unit increase in outcome control, project performance increases by 27%.

The third objective sought to establish the relationship between clan control and project performance. The study findings reveal that clan control has a positive and statistically significant effect on project performance (Std. $\beta = 0.33$ $p < 0.01$). These results indicate that with each unit increase in clan control, project performance increases by 33%.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter comprises of the discussion of findings, conclusion, study contributions, recommendations, limitations, and areas for further research.

5.1 Discussion of Findings

5.1.1 Behavioral Control and Project Performance

The first objective of the study sought to examine the relationship between behavioural control and project performance. The findings revealed that there is a positive and statistically significant relationship between behavioural control and project performance. The aspect of behavioural control is concerned with adherence to the articulated process by the controlees. The study findings imply that when controlees follow the established project rules and procedures, they tend to enhance the project's ability to achieve its goals. For instance, when managers control the behavioural actions of subordinates, the controlees are able to follow the sequence of procedure articulated by the project which enables the project to be completed on time and within the articulated budget. The study findings further imply that when the project managers assess the extent to which the controlees adhere to the written project rules and procedures in the implementation process of the project, it enables the project to be completed within the agreed timeframe and budget and such projects tend to satisfy the beneficiaries since managers use such controls to avoid any deviation in the behaviour of the controlees.

The results of this study are in congruence with the postulations of Zahoor *et al.* (2021) who argued that when the project controller's (the project managers') ability to successfully oversee the projects' development depends on the behavioural control. The study findings further support the results of Rodney Turner (2022) which revealed that to prevent project mistakes and subsequent reworks, behavioural control requires the project team members to adhere to the stated processes and rules. The study findings further concur with the works of Abubakre *et al.* (2015) who revealed that a foundation for improved construction project performance is provided by behavioural control, which combines rules, guidelines, standard operating procedures, and practices. A study by Todd, Notebaert and Clarke (2022) revealed that behavioural controls enhance the performance of projects. The study findings further support the findings of Liu (2015) which revealed that behavioural controls are positively associated with the system performance of projects.

5.1.2 Outcome Control and Project Performance

The second objective was to examine the relationship between outcome control and project performance. The findings revealed that outcome control has a significant association with project performance. The findings revealed that there is a positive and statistically significant relationship between outcome control and project performance. The study findings imply that managers who put much emphasis on the outcome of the project such as timely completion and budget control have their projects completed on time and within the stated budget. The findings of the study also imply that project managers who establish project performance standards that form a basis for control appraisal enhance performance of the project in terms of time, cost and beneficiaries' satisfaction.

The results of this study are in congruence with the findings of Ko *et al.* (2021) who established that effective planning and execution of related tasks can be aided by outcome

controls, which support the achievement of project performance objectives. The study findings further concur with the works of Dekker (2004) and Kirsch *et al.* (2010) who revealed that predefining the tasks that team members must complete at a specified time, followed by evaluating the performance of the controlees based on the task completion data, is how outcome control is implemented. The study findings further confirm the study findings by Ning (2017) and Yand *et al.* (2022) who revealed that predefinition of tasks enables team members to comprehend on their project objectives and the scope of work, resulting into prompt accomplishment of project objectives such as project milestone requirements for quality and cost supports effective planning and execution, which promotes the achievement of performance goals. The study findings support the postulations of Ko *et al.* (2021) that rewards is a crucial component of outcome control and the reward-based system reward-based program encourages individuals, teams, and organizations to put in extra effort in order to reap big rewards that serve as a foundation for achieving project goals and project success Furthermore, Klein *et al.* (2006) and Love and Josephson (2004) revealed that user-liaisons can efficiently provide feedback on corrections and improvements by reviewing completed work. Additionally, Barnes and Targett (1999) also revealed that outcome controls enable projects to have unambiguous goals and scope which allows the project developers to meet user expectations.

5.1.3 Clan Control and Project Performance

The third objective of the study sought to examine the relationship between clan controls and project performance. The findings revealed that there is a significant relationship between clan control and project performance. The findings of the study imply that project managers who involve the clients in meetings makes them to understand the project goals, values and norms, thus enhancing project performance. Further, the study findings imply that

stakeholders who reinforces the ability of their clients to understand the values, norms and goals of the project enhance the project's ability to be completed on time, within the budget as well as satisfying the clients' interests.

The results of this study are in congruence with the findings of Liu (2015), who established that clan controls generate values and norms through careful socialization of individuals who share a collective ideology which enables them to adopt internalized values and commit to the clan. The study findings further concur with the works of Kirsch *et al.* (2016), who revealed that project performance is the result of cooperative relationships with collective norms and values. The study findings support the study by Kanwal *et al.* (2017) and Rijsdijk and van den Ende (2011), who revealed that mutual understanding of norms and goals between client liaisons and developers enables developers to understand the requirements and expectations of client liaisons and guarantees that a satisfactory project is delivered. In addition, the findings of the study are in congruence with the works of Chua *et al.* (2012), who revealed that project controllers achieve project performance by leveraging the clan and reinforcing project shared values, beliefs and norms, while inhibiting those that impede the achievement of project goals.

5.2 Conclusion

The need for project clients to achieve value for their resources requires project managers to focus on improving project performance. Literature has pointed to the direction of managerial control systems as a precursor for enhancing project performance. The current study sought to establish the three types of managerial control systems (behavioural, clan and outcome controls) on project performance using evidence from school construction projects in Jinja District. The first objective was to examine the relationship between behavioural controls and project performance. The results confirmed that behavioural control has a positive and

statistically significant effect on project performance. The study concluded that managers who control the behaviours of controlees for instance by ensuring adherence to stipulated project execution procedures and rules toward the accomplishment of project goals enhances project performance. The second objective was to determine the relationship between outcome control and project performance. The results revealed that outcome controls have a positive and statistically significant effect on project performance. The study concluded that project managers who emphasize outcome control by putting significant weight on timely project completion, budget adherence and project client satisfaction enhance project performance. The third objective sought to establish the effect of clan control on project performance. The findings reveal that clan control has a significant positive effect on project performance. The study concluded that the controlee understanding of project core values, goals and norms enhances project performance.

5.3 Contributions of the Study

The present study adds to the project management literature by exploring the influence of managerial control systems on project performance, which has been largely ignored in previous research because the available works on managerial control addresses different situations (Keil *et al.,* 2013). Practically, the study would help managers perplexed with the current contradictory findings about the interaction of outcome, behavioural and clan controls by indicating how various managerial control systems work together to increase performance of construction projects. Most construction project literature focuses on situations in rich countries, ignoring the theoretical and practical ramifications of construction projects in developing nations like Uganda, thus by analysing construction projects in a non-western setting, this study advances the discipline.

5.4 Recommendations

The study formulated three important recommendations which are in tandem with the study findings. First, the study recommends that project managers should embrace behavioural project controls by emphasising logical steps, communicating the rules and procedure to be followed by the controlees while executing project activities to achieve project performance.

Secondly, the study recommends that project managers must put much weight on project outcomes controls such as timely completion of projects and completion of projects within agreed project parameters to enhance construction project performance.

Thirdly, the study also recommends project managers to allow clients to actively participate in project meetings to understand the goals, values, and norms of the development team as well as, allowing clients to be regular members on the project development team leading to improved project performance.

5.5 Limitations of the Study

The current study is not without its limitations that provide grounds for areas for further research. First, the study was limited to Jinja District and the findings may not be generalised to other settings like NGO projects. The research adopted a cross-sectional design which may not clearly identify effects attributed to time lags and their causal relationships. The study is only limited to public school construction projects and the results may not be generalizable to other settings like private projects due to the different nature of funding and budgets which differ among different projects. The study relied on quantitative data, which meant collecting numerical data from participants at a single point in time, indicating that the results of the research did not reflect the opinions/views of respondents and changes that may have occurred on the study variables immediately after the data was obtained.

5.6 Areas for Further Research

Future scholars may use a mixed research design or any other design especially, longitudinal, case study, or explanatory research design to enable us to gain more insights and accurate findings concerning the relationship between behavioural, clan and outcome controls with project performance.

Further scholars should also conduct a longitudinal study to establish the time lag changes on behaviour and how it influence project performance over different time intervals.

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APPENDIX I: QUESTIONNAIRE

Dear respondent,

I am Arishaba Aggrey, a master's student of Makerere University Business School. I am required to conduct a research study on the effect of "***Managerial Control systems and Performance of Public School Construction Projects in Jinja District'*** as part of the requirement of the master's program. The purpose of the letter is to request you to take few minutes to answer the attached questionnaire. The information you provide shall be treated with complete confidentiality and solely be used for academic purposes.

Your participation is highly appreciated

Thank you,

Please tick the answer appropriate to you. All information given will be treated confidentially

SECTION A1: DEMOGRAPHIC INFORMATION

Indicate your response to the items below by ticking in the boxes

a) What is your Gender: Male [1] Female? [2]

What is your Age bracket: 24 years and below 25-3[1]ears?

[2]

35-44 years [3] 45 years and above [4]

b) What is your Highest level of education attained?

Certificate [1] Diploma [2] 1st Degree [3] Masters [4] hD [5]

SECTION A2: Project characteristics

Please indicate the category of project that you participated in [1] Primary school

Secondary school [2] Tertiary School [3]

SECTION B: Managerial control systems

Kindly tick from 1 = strongly agree, 2 = Agree, 3= neutral, 4 = Disagree, 5 = strongly disagre 5 = strongly disagre e on how they relate to you

Code	**Behavioural control**					
		agree	**2 = Agree**	**3= neutral**	**4 = Disagree**	**disagree**
BC1	The project team follows an understandable written sequence of steps toward the accomplishment of project goals	1	2	3	4	5
BC2	The team is expected to follow articulated written implementation rules toward the accomplishment of project goals	1	2	3	4	5
BC3	The project managers assess the extent to which existing written procedures and practices were followed during the implementation process	1	2	3	4	5
Outcome control						
OC1	Significant weight is placed upon timely project completion	1	2	3	4	5
OC2	Significant weight is placed upon project completion within budgeted costs	1	2	3	4	5
OC3	Significant weight is placed upon upon project completion to the satisfaction	1	2	3	4	5
OC4	Pre-established targets as benchmarks for the performance evaluations on the development	1	2	3	4	5

	team					
Clan control						
CC1	The project clients actively participated in project meetings to understand the goals, values, and norms of the development team	1	2	3	4	5
CC2	The project clients attempted to be a "regular" member of the development team	1	2	3	4	5
CC3	The clients attempted to understand the goals, norms, and values of the development team	1	2	3	4	5
CC4	The project clients placed a significant weight on understanding the goals, values and norms of the development team	1	2	3	4	5

SECTION C: Project performance

Kindly tick from 1 = strongly agree, 2 = Agree, 3= neutral, 4 = Disagree, 5 = strongly disagree on how they relate to you

T	**Time/Schedule**					
T1	The project activities are usually carried out in the agreed time	1	2	3	4	5
T2	The final date of project completion is clearly defined and known by all the stakeholders	1	2	3	4	5
T3	The time limits for the project activities are always clearly stated	1	2	3	4	5
T4	The project is part of a well-documented and understood	1	2	3	4	5

	strategy					
T5	Project activities are always carried out exactly as planned	1	2	3	4	5
T6	Project executors normally follow the planned schedule for all activities	1	2	3	4	5
Cost						
C1	Activities of the project are usually carried out following a clear budget	1	2	3	4	5
C2	The financial limits for the project are clearly stated	1	2	3	4	5
C3	Project executors always follow the planned cost for all activities	1	2	3	4	5
Quality						
Q1	The completed school projects always meet the required quality standards	1	2	3	4	5
Q2	The quality of public schools constructed are of high compared to other school construction projects	1	2	3	4	5
Q3	The project is well described and coordinated with other school construction projects	1	2	3	4	5
Q4	If the project fulfils its goals, the results will be of great value to the end-users	1	2	3	4	5
Q5	Needs and desires of the beneficiaries are always discussed with and agreed by public schools officials	1	2	3	4	5
Q6	Project executors always keep within quality parameters in all activities	1	2	3	4	5
Q7	Quality issues of the project outputs are often discussed in	1	2	3	4	5

	the project meetings.					
Client satisfaction						
CS1	The project outcomes met the satisfaction of the end users	1	2	3	4	5
CS2	The project improved performance of the end-users	1	2	3	4	5
CS3	The project end product was accepted and used by the end users	1	2	3	4	5

APPENDIX II: KREJCIE AND MORGAN TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION 'N'

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	**346**
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 (1970).

Note: "N" is population size

"S" is sample size.

APPENDIX III: List of Public Schools Construction Projects in Jinja District

SN	Projects	SN	Projects
1.	Budondo Primary School	41.	Kiira Primary School
2.	Bufuula Primary School	42.	Kimasa Primary School
3.	Bugembe Primary School	43.	Kirinya Prisons Primary School
4.	Busede College Bugaya	44.	Kisima Ii Island Primary School
5.	Busede Seed Secondary School	45.	Kisima Island Primary School
6.	Busegula Primary School	46.	Kivubuka Primary School
7.	Busige Primary School	47.	Kiwagama Primary School
8.	Busoga College Mwiri	48.	Kyabirwa Primary School
9.	Busoona Primary School	49.	Kyomya Primary School
10.	Bususwa Primary School	50.	Lake Site Primary School
11.	Butagaya Primary School	51.	Lubani Primary School
12.	Butangala Primary School	52.	Lubani Secondary School
13.	Butiki Primary School	53.	Lukolo Church Of Uganda Primary School
14.	Buweera Primary School	54.	Lukolo Muslim Primary School
15.	Buwendaa Primary School	55.	Lumuli Primary School
16.	Buyala Primary School	56.	Lwanda High School
17.	Buyengo Primary School	57.	Lwanda Primary School
18.	Idoome Primary School	58.	Mafubira Primary School
19.	Imam Hassan Lubani Primary School	59.	Magwa Primary School
20.	Isiri Primary School	60.	Main Street Primary School
21.	Jinja College	61.	Masese Co- Education School
22.	Jinja Med Lab School	62.	Masese Seed Secondary School
23.	Jinja Nursing School, Jinja	63.	Mawoito Church Of Uganda Primary School

24.	Jinja Police Barracks Primary School	64.	Mawoito Salvation Army Primary School
25.	Jinja Primary Teachers College Wanyange	65.	Medical Laboratory Technician's School, Jinja
26.	Jinja Primary Teachers College Wanyange	66.	Mother Kevin Secondary School
27.	Jinja School Of Nursing And Midwifery	67.	Mpumudde Estate School
28.	Jinja School Of Nursing And Midwifery	68.	Mpumudde Methodist Community Primary School
29.	Jinja SDA Primary School	69.	Mpumudde Seed Secondary School
30.	Jinja Senior Secondary School	70.	Mpumwire Primary School
31.	Jinja Vocational Institute	71.	Muguluka Primary School
32.	Junior Staff College Jinja	72.	Muljibhai Madhvani College Wairaka
33.	Kaamigo Primary School	73.	Musima Primary School
34.	Kabembe Primary School	74.	Mutai Primary School
35.	Kagoma Hill Primary School	75.	Mwiri Primary School
36.	Kagoma Primary School	76.	Nakanyonyi Girls Secondary School
37.	Kakira Community Technical Institute	77.	Nakanyonyi Primary School
38.	Kakira High School	78.	Namaganga School
39.	Kibibi Primary School	79.	Namagera Primary School
40.	Kiira College, Butiki	80.	Namalere Primary School

Source: Jinja District Education Department (2020)