CONTRACT MANAGEMENT PRACTICES AND PERFORMANCE OF THE ROAD CONSTRUCTION PROJECTS IN WAKISO DISTRICT - UGANDA

BY

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DECLARATION

I, MAYIE BANYENZAKI, do hereby declare that to the best of my knowledge, the work contained in this dissertation is entirely my own and has never been submitted by anyone to any institution/university before for any award.

Signature

……

Full Name

…… **Date…….**

APPROVAL

This is to certify that this work has been done under my supervision and submitted for examination with my approval**.**

Signature…… Date ……

DR. DAN AYEBARE

DEDICATION

I dedicate this study to my nuclear family, especially my husband, who have supported and encouraged me through my studies and writing this dissertation.

May the exceeding grace of the Lord be upon them.

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LIST OF ABBREVIATIONS

GDP	Gross Domestic Product
PPDA	Public Procurement and Disposal of Public Assets
UNRA	Uganda National Roads Authority
NDP	National Development Plan
NARO	National Agricultural Research Organization
CAIIP	Community Agricultural Infrastructural Improvement Project
MoLG	Ministry of Local Government
MoWT	Ministry of Works and Transport
PSRRC	Public Service Review and Reorganization Commission.
IV	Independent Variable
DV	Dependent Variable
DLG	District Local Government
PDE	Procuring and Disposing Entity
ACODE	Action for Development

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ABSTRACT

The study examined the use of contract management practices on performance of the road construction projects in Wakiso district. The objectives of the study were: to examine the role of monitoring intensity in enhancing performance of the road construction projects in Wakiso district; to analyze the relationship between risk management and performance of the road construction projects in Wakiso district; and, to assess the role of evaluation in enhancing performance of the road construction projects in Wakiso district. A cross-sectional design was employed where both qualitative and quantitative methods were used in the study. The targeted sample size was 132 respondents out of a total population of 241 road construction stakeholders based on Krejecie and Morgan (1970) table for sample determination. The findings indicated that there was a significant positive relationship between monitoring intensity, risk management, evaluation and performance of road construction projects in the study context. The performance of the road construction projects in Wakiso district was more related to the availability and use of resources which include funding, human resources and the basic raw materials used in the construction process which results into delays, cost overruns and poor quality service. Based on these study findings it is therefore recommended that Wakiso district should commit more resources to evaluation and risk management to realize higher level of service delivery in the road construction sector.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This study addresses the phenomenon of contract management and project performance in the road construction sector in Uganda. Contract management which is the independent variable was measured in form of monitoring intensity, risk management and evaluation. On the other hand, project performance, the dependent variable, was measured in terms of timely delivery, efficiency and effectiveness, quality of works, and customer satisfaction. The topic of contract management broadly encompasses the issues relevant to the process of road construction and maintenance, including the design, contracting, implementation, supervision, and maintenance of roads and related structures, such as bridges and interchanges. Contract management includes monitoring intensity of public works, risk management in private contracting of civil works, and evaluation of labour-based construction techniques on project performance in the road construction sector. In the subsequent sections of this chapter, the following issues are presented: background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, study hypotheses, scope of the study, significance, justification and operational definition of terms and concepts used in the study.

1.2 Background of the Study

Contract management for roads has been the norm in most countries of the world, some countries do not have a sufficient industry of independent contractors and road works are mostly done by force on account or awarded to state construction agencies on a negotiated basis. In many of these countries, not only are costs high and quality low, it is common for suppliers of

construction materials and services to have monopoly power, further increasing inefficiency and lowering quality (World Bank report, 2012). Globally, there is a meteoric growth within the road construction industry, which outpaces that of global Gross Domestic Product (GDP) with major concentration in China, the United States and India. However, Sub Saharan Africa is characterized by limited number of firms dominating large scale-works, mainly Chinese and European contractors (Queiroz, 2012). There has been growing interest in contract management in the developed world and hence the many studies of contracting and management (Rendon, 2009 b; Rendon, 2008; Minahan, 2007; Ya Ni and Bretschneider, 2007; and Wright (2004); Charles and Oludele, 2003; and Abi-Karam, 2002).

According to the National Development Plan1 (NDP1 of 2010/11-2014/15), transport is among the complementary sectors that have to support the primary growth sectors. Government of Uganda is therefore investing substantially in the infrastructural development, including the roads sub-sector, as a prerequisite for structural transformation in the economy. According to the Crossroads' database (2012), Uganda has a total of 746 local roads contractors. It is estimated that 45 per cent of the roads in Uganda are in poor condition. Districts are worse off with 56 per cent of the roads in poor condition, yet roads are the major mode of transport in Uganda linking areas of production to markets as well as facilitating mobility of people. Over 90 per cent of cargo freight and passengers move by road (Bogere, 2013).

Bogere (2013) found out that road construction projects are still associated with sub-standard work, loss of government funds and untimely completion of projects. Bogere (2013) further asserts that a lot of funds were set aside for monitoring and supervision in the budget for road

projects but roads were found to be of poor quality compared to those works where there were no funds set aside. The funds were not necessarily put to use especially where works are undertaken by government. An ACODE (2012) study revealed inconsistency in monitoring and supervision at a micro level. Allocation of works for monitoring and supervision of road works was used as a proxy for actual monitoring and supervision of road works contracted is unlikely without finances. A total of 24 road construction projects out of 145 which was 17 per cent did not have funds earmarked for monitoring. For those funds that were set aside for monitoring per kilometre, it was UGX 2, 263,000 and UGX 64,000 for periodic and routine maintenance respectively. The costs for monitoring were very high, raising concerns for the cost effectiveness of the contracted road projects.

Despite the emphasis and regulatory framework on contract management in Uganda, public procurement compliance deports sanctioned by the Public Procurement and Disposal of Public Assets Authority have continuously shown contract management as one of the areas where performance is characterized by unfinished projects, poor service or product delivery, corruption and extended contract periods in the last ten years without major justification (Transparency International, 2009).

According to Wakiso District statistical abstract, 2008/2009, road works in good motorable condition targeted was 70 per cent (50kph) while 51 per cent was achieved. The percentage of the roads in fair motorable condition (30 – 50 kph) target was 70 per cent while 63 per cent was achieved. This was explained by delays attributed to the contractors. According to Mutabazi (2011), road performance is structurally deficient behind the excuse that wide roads are

expensive to build; the roads are narrow and expensive in the long run due to potholes which result from weak road bases which continually erode beginning from the sides of the road. The material specifications and designs used on most of the roads use low volume seals which lead to fast deterioration. This could be attributed to contract management in form of monitoring intensity, evaluation, and risk management. If the situation continues, there will be continuous loss of funds in form of repairs by the district, low value for money out of the contracted projects and a continued state of poor road conditions in the district hindering the macroeconomic goal of fostering growth through increase in road networks. Hence the need to examine the relationship between contract management and project performance in the road construction sector in Wakiso District.

1.3 Statement of the Problem

In Wakiso District, a number of major roads have been completed and many are earmarked for reconstruction, there is persistent poor projects performance associated with irregular payments amounting to over UGX 557.6 million, low value for money due to shoddy works, overestimated budget costs and time overruns by the contractors (*Daily Monitor* of 10th August, 2015). According to Wakiso District Statistical Abstract, 2008/2009, road works in good motorable condition targeted was 70 per cent (50kph) while 51 percent was achieved. The percentage of the roads in fair motorable condition (30 – 50 kph) target was 70 per cent while 63 per cent was achieved.

Wakiso District recorded a high unit of periodic and routine maintenance of gravel road works amounting to UGX 18million, and unit cost of monitoring road works totalling to UGX 5,808 million (Bogere, 2013). If the trend continues, there will be low value for money and low

customer satisfaction by constraining the limited financial resources. This could be attributed to poor contract management practices at the district such as risk management, monitoring intensity, and evaluation. Hence the need for the study to examine the relationship between contract management practices and performance of the road construction projects in Wakiso district.

1.4 Purpose of the Study

The purpose of the study was to examine the relationship between contract management practices performance of road construction projects in Wakiso district in Uganda.

1.4.1Specific Objectives of the Study

This study was guided by the following specific objectives:

(i) To examine the role of monitoring intensity in enhancing performance of the road construction projects in Wakiso district.

(ii) To analyze the relationship between risk management and performance of the road construction projects in Wakiso district.

(iii) To assess the role of evaluation in enhancing performance of the road construction projects in Wakiso district.

1.5 Research questions

(i) What is the role of monitoring intensity in enhancing performance of the road construction projects in Wakiso district?

(ii) What is the relationship between risk management and performance of the road construction projects in Wakiso district?

(iii) What is the role of evaluation in enhancing performance of the road construction projects in Wakiso district?

1.6 Hypotheses of the study

(i) Monitoring intensity is positively related to performance of road construction projects in Wakiso district.

(ii) Risk management is positively related to performance of road construction projects in Wakiso district.

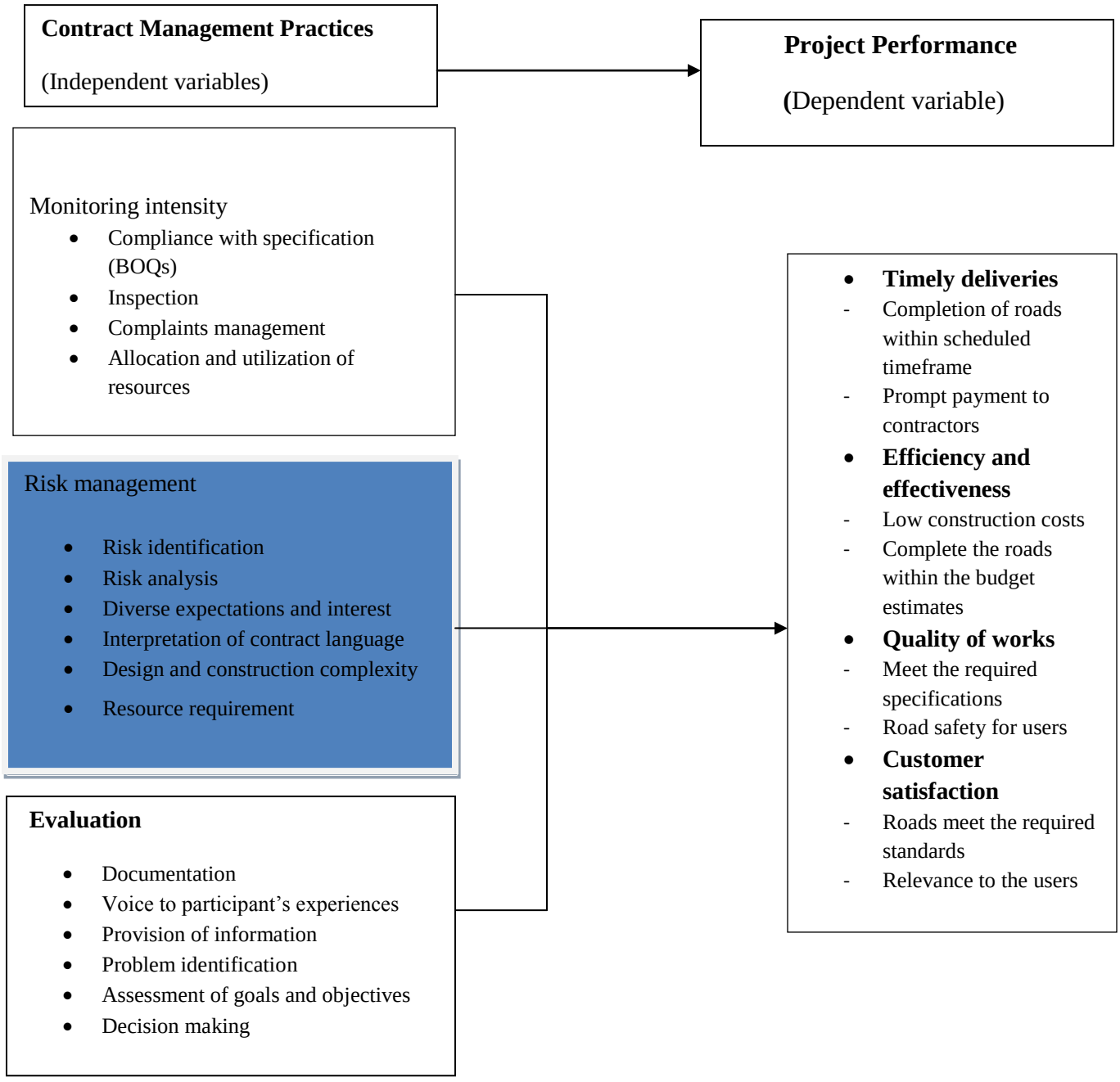
(iii) Evaluation practice is positively related to performance of road construction projects in Wakiso district.

1.7 Conceptual framework

The conceptual framework was developed to provide clear links of dependent and independent variables as they relate to each other in this research. The framework therefore shows the relationship between contract management practices and performance of road construction projects in Wakiso district - Uganda.

The conceptual framework was derived from the contract management principles model of Bong (2008). The model discusses various items for contract management which include monitoring intensity, risk management and evaluation among others (DVs). The model incorporates contract management in the public private partnership where the government agencies contract independent road contractors and the likely outcome after awarding contracts which was analyzed in form of timely deliveries, efficiency and effectiveness, quality of works, and customer satisfaction.

Figure 1:1 The link between contract management practices and road construction project performance



Source: The contract management Principles Model by Bong (2008)

Contract management involves problems that stem from relationships in which a principal (a procurement and disposing entity (PDE) contracts with an agent (a contracted firm) for doing the work in which the latter has expertise. By doing this, the principal looks to ensure careful designing and monitoring the agent performance as per the initial specifications which include timely deliveries and quality of works (DVs).

1.8 Significance of the study

The study sought to examine contract management and project performance of the road construction projects in Uganda, specifically in Wakiso district. This study gave insights to understanding the importance of contract management in the construction industry. It may also have some contribution to the formulation of appropriate policies relating to the performance of road construction projects. These policies will help the concerned bodies dealing in road construction such as Uganda National Roads Authority, Ministry of Works and Transport, Local Government road construction committees at the district, and private organizations such as CAIIP to focus on the root causes of incomplete road projects than giving attention to the observed problems. In addition to this, the policies may facilitate further studies on the problem since there is little relevant and comprehensive data on the study in Uganda. The information obtained during the study will ultimately build on the existing body of knowledge to pave way for further research in the field of contract management and performance in academia.

1.9 Justification of the study

While a lot of attention has been directed toward implementation procedures in acquisition of goods and services in public organizations, little has been done to establish the best practices in

compliance to contract regulations in Uganda. This study generated information relating to contract management and performance of road projects, specifically in Wakiso District. It was intended that the findings of this research will be useful source of information to Wakiso District in strengthening the acquisition, implementation and integration of contract monitoring practices in administration. The study may also influence government policies with regard to contracts and also form a basis on which academic researchers can do further studies in monitoring and evaluation.

1.10 Scope of the study

1.10.1 Content Scope

The study focused on contract management practices as the independent variable and project performance as the dependent variable. The independent variable had three sub-variables which include: monitoring intensity, evaluation and risk management; while the dependent variable was based on four major indicators which include: timely delivery, effectiveness and efficiency, quality of work and customer satisfaction. The variables were considered since they would be used to examine the relationship between contract management and performance in the road construction projects in Wakiso district.

1.10.2 Geographic Scope

The study was carried out within Wakiso District and focused on mainly road construction projects under the local government administration. Wakiso district is one of the growing districts with a high level of infrastructure development including roads that connect to the capital city, Kampala. The quality of the roads influences the flow of traffic and a number of

weaknesses were highlighted in the road construction sector in Wakiso district such as the IGG report affecting the service quality.

1.10.3 Time Scope

To effectively capture data relating to contract management practices and performance from 2009 to 2015, the literature content included period from 1990 to 2014 because during this period the district experienced major developments in the road construction sector where some projects generally completed while others were unsuccessful, which caused great loss to the district and the government at large.

1.11 Operational definitions

Contract management: In the Wikipedia Encyclopedia of 28 September 2015, contract management is the management of either common commercial or complex contracts made with customers, vendors, partners or employees. It is a process of systematically and efficiently managing contract creation, execution and analysis for the purpose of maximizing financial and operational performance and minimizing risk. It was found that 42% of enterprises the top driver for improvements in the management of contracts is the pressure to better assess and mitigate risks and nearly 65%of enterprises report that contract life cycle management has improved exposure to financial and legal risks.

Monitoring intensity: This is measurable concentration of regular observation and recording of activities taking place in a project**.**

Risk management: Hubbard (2009) defined risk management as the identification, assessment, and prioritization of risk followed by coordinated and economic application of resources to minimize, monitor, and control the probability and/ or impact of unfortunate events. This definition was adopted for the study.

Evaluation: According to Farlex Partner, 2012, evaluation is a systematic, objective assessment of relevance, effectiveness and impact of activities in the light of specified objectives. Indeed, it is an assessment, judgment of the worthiness or value of a project, policy, intervention, state of affairs, self**.**

Project Performance: This is an ongoing review of the efficiency and importance of a given project. It is used as a means of understanding and improving company, department and personnel performance.

Stakeholders: Those persons and entities that have an interest in the strategy of an entity. Stakeholders normally include shareholders, customers, staff and the local community.

Strategy: This is the determination of the basic goals and objectives of a firm and the adoption of courses of action including the allocation of resources necessary for carrying out these goals.

Structure: the means by which the organization seeks to achieve its strategic objective and implement strategies and strategic change.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the related literature in relation to the study variables as guided by the study objectives which were: To examine the effect of monitoring intensity on performance of the road construction projects in Wakiso district – Uganda; to analyze the relationship between risk management and performance of the road construction projects in Wakiso district – Uganda; and to assess the effect of evaluation on performance of the road construction projects in Wakiso district. Research gaps were identified and this provides a basis for the justification of the study.

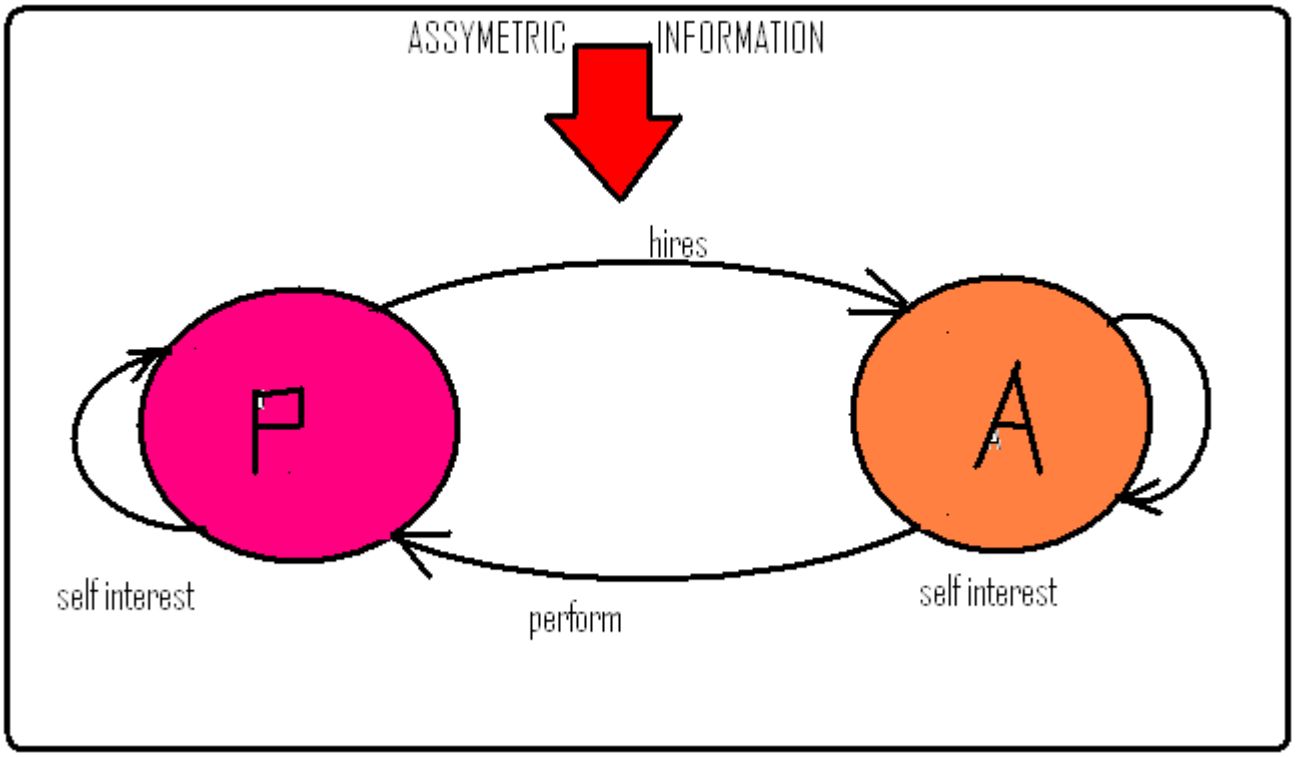
2.2 Theoretical review

The theoretical basis for the performance outcomes of contract management was founded on the agency theory. The theory adequately explains the relationship between the two parties in contract management and conflicts that arise between the contractors and hiring entity, in this case Wakiso District Local Government which finally affect the performance of road construction projects. While the district targets the goal of constructing high quality roads, on the contrary, the contractors want to maximize profits out of the contracted projects, which leads them to do substandard work through minimizing inputs to maximize gains.

According to Lician and Jesse (2004), The agency theory occurs when one person or entity, the agent (road project contractor), is able to make decisions on behalf of, or that impact another

person or entity (Wakiso District Local Government) the principal. This dilemma exists in circumstances where the agent is motivated to act in his own best interest, which are centrally to those of principals (timely delivery, quality of work, customer satisfaction), and is an example of moral hazard.

Figure 2:1 The agency Theory with asymmetric information



P (Principal), A (Agent)

Source: Eisenhardt (1989) Agency Theory, An Assessment and Review (1989)

Eisenhardt (1989), indicated that the agency problem arises where the two parties have different interests and asymmetric information (the agent having more information) such that the principal cannot directly ensure that the agent is acting in his interest (Wakiso district) particularly when

activities that are useful to the principal and costly to the agent (enough quantity and desired road quality materials), and where elements of what the agent does are costly for the principal to observe (monitoring intensity, evaluation, and risk management). The deviations from the principal's interests (efficiency and effectiveness, timely delivery, customer satisfaction) by the agent are called the agency costs. Various mechanisms may be used to align the interest of the agent with those of the principal. The principal may use piece rate (commissions, performance measurement, or the threat of termination of employment (contract) to align workers (project contractors) interest with their own (Wakiso district). However, the theory does not show the relationship between the interest of the principal and the agent to the elements observed by the principal to minimize the costs. Further, the theory does not indicate how the principal minimizes the information asymmetry (through monitoring intensity, risk management and evaluation) to achieve the interest of the principal (which include efficiency and effectiveness, timely delivery, reduction in road construction costs, and customer satisfaction).

Cooper (1996), indicated that as managers (contractors) identify stakeholder (in this case Wakiso District Local Government) values, they also need to identify the tools, resources, and constraints that define the range of action they might take in delivering services (risk management, evaluation, and monitoring in the study). Here, two institutions are central to the contracting process: The contractors and Government entity (Wakiso District Local Government). Contract laws set the boundaries within which managers (contractors) must operate, thereby permitting, authorizing, or requiring a range of actions. At its root, a contract is a legal instrument, an "agreement by particular parties [who] accept a set of rules to govern their relationship, whether it is for the purchase of services or for a cooperative working agreement". As the law establishes what is authorized and prohibited, it also defines a manager's (contractor's) zone of discretion,

either through legal ambiguity or direct delegation. Discretion allows for considerable flexibility, creativity, and innovation in contracting, whereas legal aspects can restrict discretion to such an extent that managers have limited ability to manage contracts effectively. Managers clearly need a sound understanding of the laws, ordinances, and administrative statutes governing both the contracting process in general and their particular services (Rosenbloom and Piotrowski, 2005; Wise, 1990). However, the theory did not indicate how the adherence to the laws, ordinances, and administrative statutes such as monitoring by the road inspectors would impact on the performance of the road construction projects.

Along with legal resources and constraints, organizational arrangements also define the capacity, resources, and transaction costs for managing performance by the principal. If the goals are effectiveness and efficiency, then contracting with a private vendor may be more desirable, because private employees (contractors) operate with higher-powered, compensation-based, and profit oriented incentives. Effective management is necessary to monitor how contractors and public entities are achieving performance values (e.g efficiency, quality, and equity). To this end, building contract management capacity includes acquiring and nurturing physical infrastructure, financial resources, and perhaps more important, human capital. However, the theory did not show how and why effectiveness and efficiency were achieved when services were contracted to private service providers.

According to Williamson (2013), contract management problems stem from relationships in which a principal (a contracting government) contracts with an agent (a vendor) for the production of goods and services in which the agent has expertise. The principal looks to prevent the agent from opportunistically exploiting its information advantages by carefully designing contracts, offering incentives, and monitoring the agent so that it performs according to contract

specifications. Strong and effective markets, however, require some fairly strict conditions. They need large numbers of buyers and sellers, participants need to be well informed about products and each others ' preferences, and actors must be able to enter and exit the market and exchange resources at low costs. However, he did not indicate how the use of information advantage such as designing the contract, offering incentives and monitoring incentives would affect the performance of the projects, which research gap was addressed by this study.

The Agency Theory explains how to best organize relationships in which one party determines the work while another party does the work. In this case, the study examined the relationship between Wakiso district road construction departments through contract management with the contractors. In this relationship, the *principal (Wakiso district)* hires an *agent* (contractors) to do the work, or to perform a task the principal is unable or unwilling to do (road construction). For example, in corporations, the principals are the shareholders of a company, delegating to the agent *i.e*. the management of the company, to perform tasks on their behalf. Agency theory assumes both the principal and the agent are motivated by self-interest. This assumption of self-interest dooms agency theory to inevitable inherent conflicts. Thus, if both parties are motivated by self-interest, agents are likely to pursue self-interested objectives that deviate and even conflict with the goals of the principal. Yet, agents are supposed to act in the sole interest of their principals (Eisenhardt, 1989).

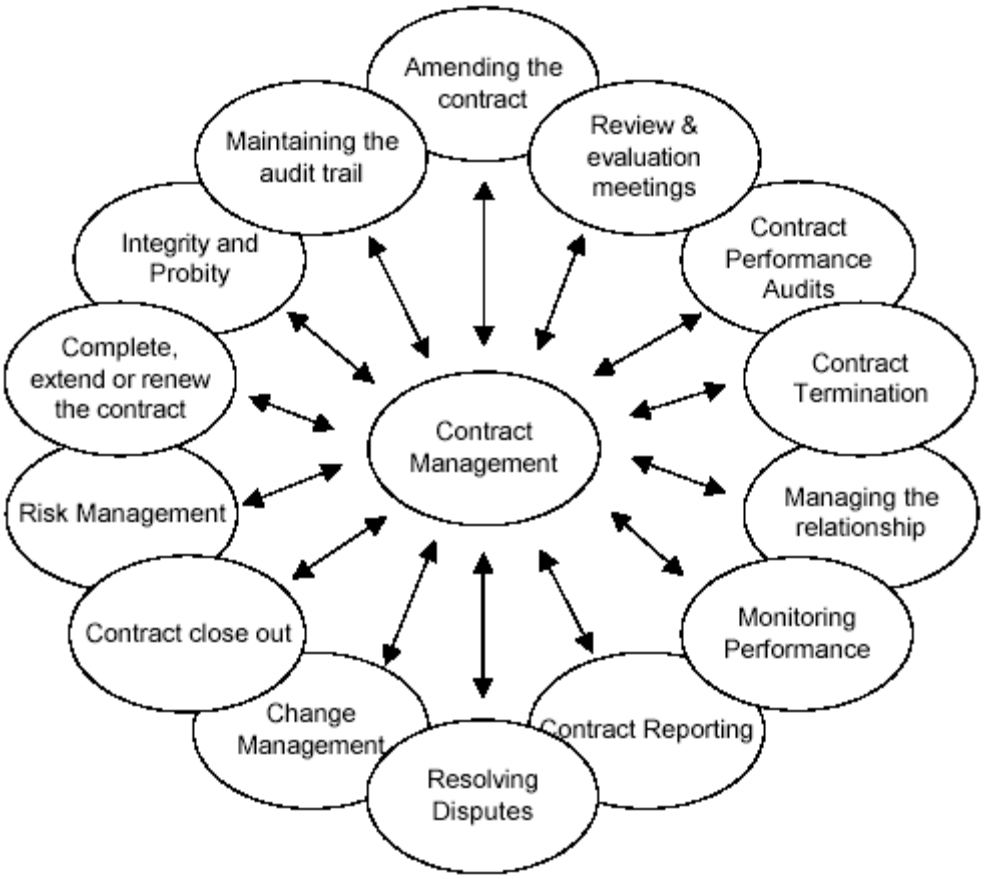
According to Eisenhardt (1989), to determine when an agent does (and does not) act in their principal's interest, the standard of "Agency Loss" has become commonly used. Agency loss is the difference between the best possible outcome for the principal and the consequences of the acts of the agent. For instance, when an agent acts consistently with the principal's interests, agency loss is zero. The more an agent's acts deviate from the principal's interests, the more

agency loss increases. When an agent acts entirely in his own self-interest, against the interest of the principal, then agency loss becomes high. Apart from discussing how the agency costs arise, he did not discuss any initiatives such as monitoring intensity, evaluation, and risk management by both the agent and the principal to reduce the agency losses which research gap was addressed by the study.

2.3 Conceptual Review

The conceptual review is based on the contract management conceptual model as developed by Chang (2004). The model discusses various items for contract management which include; contract amendment, review and evaluation, risk management and monitoring performance among others (Figure 2.1 below). However, the conceptual model does not relate how the independent contract management items are likely to affect project performance which research gap was addressed by this study.

Figure 2.1 The contract management principles model



Source: Bong (2008), Contract Management Principles Model

2.3.1 Monitoring intensity and project performance

Quality of construction is a key component of perceived value to both clients and contractors. The International Federation of Consulting Engineers (FIDIC) noted that "lack of quality in construction is manifested in poor or non-sustainable workmanship, and unsafe structures; and in delays, cost overruns and disputes in construction contracts". Value and quality of construction are of concern to both public and private sector clients (Ngosong, 2015).

Monitoring the performance of the contractor regularly is a very important part of road construction. The monitoring system differs among the road authorities. However, a monitoring system is necessary to maintain the quality of work and also to record the data for future Research and Development in the road authorities.

As the construction industry significantly expands, the role of the private sector has changed from the simple execution of works to the management and conservation of road assets. In order to be entitled to the monthly payment for maintenance services, the contractors must ensure that the roads under contract comply with the service quality levels which have been specified in the bidding document. It is possible that during some months, they will have to carry out a rather large amount of physical works in order to comply with the required service levels and very little work during other months. Yet their monthly payment remains the same as long as the required service levels are complied with (The World Bank, 2004). Therefore, as suggested by Queiroz (2005), five steps can be followed to ensure the quality in monitoring intensity such as: contractor's self-control system; formal monthly inspections; supervisors (formal/informal) inspections; project managers (formal/informal) inspections; and maintaining a record book to follow the comments or complaints of roads users. This approach is able to ensure the quality of maintenance work.

Prager (1994) in Oluka and Basheka (2013) contends that proper and effective management and monitoring of contracts helps improve the quality of goods and services and reduces procurement cost, thus achieving three broad goals: quality products and services, timely delivery of products and services, and cost effectiveness (within budget). Davison and Sebastian (2009) in Oluka and Basheka (2013) established the likelihood of contract problems for a given type of contract, and which type of contract is likely to encounter the most problems. For

example, for construction contracts, change order, delays, and cost have a statistically similar chance of occurring and were significantly more likely to occur than the remaining problems, and that construction contracts are more likely to experience problems than other types of contracts.

The traditional methods of contracting are more prone to corruption because of the nature of the decision-making processes. Monitoring has the potential to promote transparency and good governance in road maintenance works (Liautaud, 2001; Zietlow, 2004). According to Tineo (2007), the limited experience with output-based approach in developing countries has prevented a comprehensive examination of its effects on lowering corruption. However, even at this early stage, monitoring intensity can reasonably be expected to reduce administrative discretion and increase efficiency; two factors associated with corruption. The logic here and the rest of the parts is a demonstration of how monitoring intensity in specific terms is associated with performance of road construction projects and offering evidence that has been established about this relationship. This part requires specific statements.

2.3.2 Risk Management and Project Performance

Banaitiene and Banaitis (2012) define a project risk as "an uncertain event or condition that, if it occurs, has a positive or negative effect on at least one project objective". Risk management in the construction project management context is a comprehensive and systematic way of identifying, analyzing and responding to risks to achieve the project objectives. Effective risk management is a critical component of any winning management strategy (Banaitiene and Banaitis, 2012). According to Raz et al (2002), there are many possible risks which could lead to failure of the construction project, and through the project, it is very important to identify what

risk factors are acting simultaneously. Rae et al (2002) indicated that too many project risks as undesirable events may cause construction project delays, excessive spending, unsatisfactory project results or even total failure.

The benefits of the risk management process include identifying and analyzing risks, and improvement of construction project management processes and effective use of resources. Construction projects can be extremely complex and fraught with uncertainty. Risk and uncertainty can potentially have damaging consequences for the construction projects (Flanagan and Mills, 2001). Construction projects are always unique and risks raise from a number of different sources (Oyegolle, 2006; Pheng and Chuan, 2006). Construction projects are inherently complex and dynamic, and involving multiple feedback processes (Sterman, 1992; Uher and Loosemore, 2004).

A lot of participants – individuals and organizations -- are actively involved in the construction projects, and their interests may be positively or negatively affected as a result of the project execution or project completion (Banaitiene & Banaitis, 2012). Different participants with different experience and skills usually have different expectations and interests (Dey and Oguluna, 2004). This naturally creates problems and confusion for even the most experienced project managers and contractors (Banaitiene & Banaitis, 2012). However, they never indicated the methodology they used to come up with such conclusions. It was further not clear about the performance indicators they used for their findings which research gap was addressed by the study.

Risk management helps the key project participants – clients, contractor or developers, consultants, and suppliers -- to meet their commitments and minimize negative impacts or

construction project performance in relation to cost, time and quality objectives (Banaitiene and Banaitis, 2012). Eskesen et al, (2004) indicated that project risk management includes: (1) risk management planning, (2) risk identification, (3) qualitative risk analysis, (4) quantitative risk analysis, (5) risk response planning, and risk monitoring and control. The use of risk management from the early stages of a project where major decisions such as choice by alignment and selection of construction methods can be influenced is essential. The benefits of risk management processes include; identifying and analyzing risks, and improvement of construction project management processes and effective use of resources.

A change in the method of specification from work output to performance, allocates the risk exposure of road authority to the service provider, i.e. contractor (Carpenter *et al*., 2003; Frost, 2001; Frost and Lithgow, 1996; Segal *et al*., 2003). There is evidence that risk management results in better outcomes at lower cost with less risk and more financial predictability for highway agencies (Hyman, 2009). Moreover, risk allocation to the contractors would be beneficial for the road authorities only when contractors are better to manage the risk (Austroads, 2003; Hardy, 2001). The contractors must be able to properly understand risk management to successfully interpret contract language and share the risk.

Large construction projects are exposed to uncertain environment because of such factors as planning, design and construction complexity, presence of various interest groups (owner, consultants, contractors, suppliers), resources (manpower, materials, equipment, and funds) availability, environmental factors, the economic and political environment, and statutory regulations (Banaitiene & Banaitis, 2012). This concurred with Zoy et al, (2007) who indicated that the construction projects can be unpredictable. Managing risks in construction projects has been recognized as a very important process in order to achieve project objectives in terms of

time, cost, quality, safety and environmental sustainability. Project risk management is an iterative process; the process is beneficial when is implemented in a systematic manner through the life cycle of the construction project from planning stage to completion (Banaitiene and Banaitis, 2012). However, both studies did not analyze the relationship between risk management and performance of projects that involve contracts which research gap was addressed by the study.

Banaitiene and Banaitis (2012) further indicated that where the private sector is relied on for the construction of roads, it is the bidding and contracting documents which are the foundation of the construction process. In recent years, as the process of contracting has quickly evolved, and contractors have experimented with new ways of acquiring new business and enhancing profit, there is an awareness of the need to refine these basic documents, particularly in the areas of risks and incentives. The construction industry has historically not dealt well with risk, leading to many failed contractors through poor planning, poor budgeting, and poor resource management. On the owner's side, the push to minimize costs is often an absolute goal, regardless of market realities, resulting in impossibly low prices being accepted as part of bids and contracts which give owners all the rights and contractors all of the obligations. To overcome these problems during road construction, such as project delays, excessive expending and unsatisfactory project results or even total failure, clear terms and conditions should be spelled out. The owner must also be protected against irresponsibly low bids that later result in excess claims and controversy. However, other than discussing the outcomes of poor risk management, they did analyze the different forms of risks and the relationship between risk management and performance in the road construction sector.

2.3.3 Evaluation and project performance

The development of revised performance evaluation procedures will ensure the reliability of the overall performance (de la Garza et al. 2009). Pinero (2003), Pinero and de la Garza (2004), de la Garza et al.(2008, 2009) identified five components in order to develop a framework for monitoring performance which are level of service effectiveness, timeliness of response, safety procedures, quality of services, and cost-efficiency.

Professor Kaoru Ishika initiated a model of evaluation - Cause and Effect Analysis in the 1960s. The technique uses a diagram-based approach for thinking through all of the possible causes of a problem. This helps to carry out a thorough analysis of the situation. Kaoru (1960) indicated four steps to evaluate projects using the cause and effect analysis: identify the factors that may be part of the problem. These may be systems, equipment, materials, external forces, people involved with the problem, and so on. Try to draw out as many of these as possible. As a starting point, use models such as the McKinsey 7S Framework (which offers you Strategy, Structure, Systems, Shared values, Skills, Style and Staff as factors to be considered) or the 4Ps of Marketing (which offers Product, Place, Price, and Promotion as possible factors).

Kaoru (1960), identified the following factors to be used by the manager while evaluating projects (1) Site, (2) Task, (3) People, (4) Equipment, and (5) Control. After identification, the project manager brainstorms possible causes of the problem that may be related to the factors. Kaoru (1960) indicated that where a cause is large or complex, then it may be best to break it down into sub-causes. For each of the factors he identified, the manager brainstorms possible causes of the problem. Depending on the complexity and importance of the problem, investigate the most likely causes further. This may involve setting up investigations, carrying out surveys,

and so on. These will be designed to test which of these possible causes is actually contributing to the problem. A useful way to use this technique with a team is to write all of the possible causes of the problem down on sticky notes. However, his model does not analyze how this evaluation process is related to project performance in form of efficiency, value for money, timely completion of the project and customer satisfaction.

According to Mitch and Brian (2013), evaluation is an important component of refining programmes and documenting impacts. Evaluation aids the profession as a whole and assists Extension faculty in meeting promotion requirements. Qualitative methods are commonly used in evaluations in order to explore specific facets of programmes and to give voice to participants' experiences. These methods provide in-depth information that can assist Extension staff in enhancing the quality of their programs.

2.4 Review of the empirical studies and synthesis of Literature Review

A lot of literature has been reviewed in relation to contract management in general. Much of the literature review explains the process of contract management with limited studies analyzing the relationship between the study independent variables that is risk management, evaluation, and monitoring intensity to performance of the road construction projects. Most of the literature is from the developed countries and therefore the conclusions may not be applied to the developing countries like Uganda.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was used in the study. The chapter specifically presents the research design, the population, sampling design, sources of data, research instruments, measurement of variables, reliability and validity tests, data analysis and anticipated limitations of the study and how they were addressed.

3.2 Research Design

According to Sekaran (2004), a research design shows the details of the study in relation to purpose of the study, types of investigation, the extent of researcher interference, measurement and measures, unit of analysis, sampling design, time horizon, Data collection method and data analysis, are integral to research design. The study design was cross sectional. Both quantitative and qualitative methods were used in the study. The researcher employed a correlation technique which was undertaken in order to ascertain and be able to describe the characteristics of contract management measures and performance in the road construction projects in Wakiso District.

The type of design helped the researcher to manipulate the study variables through establishing correlations and testing the hypotheses in the study. Further, data was gathered just once in a period of months, in order to answer the research questions.

3.3 Study Population

The population for this research was within the stakeholders of the road construction projects in Wakiso district which was 241. They were assumed to have the relevant information in relation to the study variables. The study population comprised 160 employees of the road construction projects, the contractor's managers (06), road sector under works and technical services department, Community Agriculture Infrastructure Improvement Programme (CAIIP) within Ministry Local Government, Uganda National Roads Authority (UNRA) officials and Local Government administrators in Wakiso district.

Table 3:1 Study population

STUDY GROUP	**STUDY POPULATION**
Employees on the road construction projects	160
Contract managers	06
Road sector under works and technical services department	05
Community Agriculture infrastructure improvement programme (CAIIP)	08
Uganda National Roads Authority (UNRA) (contract management committee)	06
Local government administrators (councilors)	10
Staff from ministry of finance	02
Ministry of works	04
Community	40
Total	**241**

3.4 Sampling Design and size

Sampling is the process of selecting a sufficient number of elements from the population, so that a study of the sample and an understanding of its properties or characteristics would make it possible for us to generalize such properties or characteristics to the population elements (Sekaran, 2004). The study target/a sample size of 132 respondents based on Krejcie and Morgan (1970) table of sample determination (Appendix 1). Stratified random sampling was used in the identified subgroups of contract management within the study population since they were expected to have different parameters on contract management measures and performance of the road construction projects in Wakiso district. In addition, purposive sampling was used to obtain desired information from selected respondents. These included the District Engineer, road Inspector and other staff under Works and Technical Services department, CAIIP (Community Agricultural and Infrastructural Project in Ministry of local government), Uganda National Roads Authority (UNRA) officials, Ministry of Finance and Ministry of Works.

3.5 Sources of Data

- **Primary Data**

Data was got directly from the field by use of questionnaires and interview guide which were distributed and administered respectively among the respondents.

- **Secondary Data**

This was obtained from the available literature; journals, textbooks, articles, reports and the records of the road construction projects in Wakiso district.

3.6 Data Collection Instruments

Data collection instruments included a questionnaire which was used to gather responses quantitatively. The questionnaire was structured to contain questions that address the four variables; (1) monitoring intensity, (2) risk management, (3) Evaluation, and (4) project performance.

An interview guide was provided to those respondents expected to have key information in relation to contract management and project performance in road construction in Wakiso district to collect qualitative data. These included: the district engineer in charge of construction, the Accounting Officer, Head PDU and district supervisor under Uganda Roads Fund(URF).

3.7 Measurement of Variables

- **Monitoring intensity**

Monitoring intensity was measured in terms of formal monthly inspection reports, visitors books at the sub counties, supervisor inspection, contractor's self control system, maintenance of a record book to follow the comments or complaints of road users, execution of work, management of road assets, conservation of road assets, and compliance with the bidding document based on Queiroz (2005) model on a five point Likert scale.

- **Risk management**

Risk management was measured in terms of risk management planning, risk identification, risk analysis, risk response planning, and risk monitoring and control based on Eskesen et al (2004) in Banaitiene and Banaitis (2012) in their study of risk management in construction projects on a five point Likert scale.

- **Evaluation**

  Evaluation was measured in terms of evaluation factors including: site, task, people, equipment and control based on Kaoru (1960) model of effect and cause analysis on a five point Likert scale.

- **Project Performance**

Project performance of road construction was measured in terms of timely deliveries, completion with specific budget, efficiency and effectiveness, quality of work, and customer satisfaction on a five point Likert scale based on Ngosong (2015) in his study, Investigation of Challenges Faced by the Procurement and Delivery of Quality Construction Projects in Africa and Cameroon.

3.8 Reliability and Validity

3.8.1 Validity

A high degree of construct validity was ensured in this research by the extensive review of questionnaires and interview structure by the expert supervising my work (Supervisor) as well as comparing and referring to the literature available in the area of study. To ensure the appropriateness of the research instrument, Content Validity Index was determined. Content Validity refers to the degree to which the test actually measures or is specifically related to the traits for which it was designed. The content validity index was established at 0.848 which was high enough. This indicated that the research instruments were valid to measure what they intended to measure (Table 3:2).

Table 3:2 Content Validity Index

Item	Total number of items	Number of items considered relevant	Content Validity Ratio (CVR)
Monitoring Intensity	13	11	0.846
Risk management	14	10	0.714
Evaluation	12	10	0.833
Performance	7	7	1.00
CVI average			**0.848**

3.8.2 Reliability

Reliability is the correlation of the test with itself (Tavakol, (2011). The researcher squared the correlation and subtract from 1.00 to produce the index of measurement error. The test had reliability (correlation of the test) of 0.803, there was 0.356 error variance (random error) in the scores (0.803 x 0.803 = 0.644: 1.00 – 0.644 = 0.356). In this case the Alpha value was high at 0.644; hence the study was reliable since it was above the recommended value of 0.5. The Cronbach Alpha test was used to show reliability and reveals the effect of measurement error on the observed score of all respondents. It was used to calculate the effect of measurement error on the observed score of an individual respondent using the standard error of measurement. Further, Cronbach Alpha shows the correlation of items testing the same concept. Using the Cronbach Alpha model, the study was reliable since the correlation value was above 0.5 alpha coefficients as recommended by Tavakol (2011) at 0.644. Cronbach Alpha ranges in value from 0 to 1 was used to describe the reliability of factors extracted from the study.

Table 3:2 Alpha Value Coefficient

Item	Squared Correlation	Random Error	Alpha Value
Monitoring Intensity	0.79 x 0.79 = 0.624	1 – 0.624 = 0.375	0.624
Risk Management	0.73 x 0.73 = 0.532	1 – 0.532 = 0.467	0.532
Evaluation	0.89 x 0.89 = 0.792	1 – 0.792 = 0.207	0.792
Average value	**0.803 x0.803 =0.644**	**1 – 0.644 = 0.356**	**0.644**

Source: Primary data

3.9 Data Analysis

3.9.1 Quantitative Data Analysis

The analysis was done with the aid of the package (SPSS) which besides being user friendly, was appropriate for handling the correlations between the variables plus regressions in the study. All variables were assigned with names and coded for computer entry. Secondly all the responses were coded to facilitate computer data in-put. Thirdly, after data entry was completed, negatively worded scales were recorded and assigned with new values. Fourthly, in order to get composite scores for items on a scale, target variables were computed. Fifthly, data was screened in order to minimize data entry errors. Quantitative data was analyzed using descriptive statistics and Pearson Correlation to examine the relationship between the independent and the dependent variable in the study.

3.9.2 Qualitative data

Qualitative data techniques such as interviews helped to enhance the data collected since the researcher could see key aspects more clearly. This was enhanced by conducting interviews with some key stakeholders such as the district engineer, the monitoring and evaluation officer, Municipal council engineers such as Nansana and Kiira and the researcher was able to understand the participant's experience and perspective in relation to contract management and performance of the road construction projects in Wakiso district. The researcher was in position identify pattern of themes for example finding common statements or ideas that appear repeatedly and data was coded according to the themes identified. Qualitative data was presented highlighting the key aspects that were pointed out by the respondents from the field to draw conclusions from the study.

3.10 Limitations

The respondents would not easily interpret and translate the research instruments since it was designed in English especially the employee in the road construction project. A lot of time was spent while trying to translate the questions. The value of the research depends critically on the accuracy of the data collected. Data quality can be compromised via a number of potential routes, for example leading questions, unrepresentative samples and biased responses. However the researcher had to ensure that data was accurate and the samples were representative enough.

CHAPTER FOUR

PRESENTATION OF THE STUDY FINDINGS

4.1 Introduction

This chapter presents the findings from the study as guided by the objectives and the study questions which were: To examine the role of monitoring intensity in enhancing performance of the road construction projects in Wakiso district; to analyze the relationship between risk management and performance of the road construction projects in Wakiso district; to assess the role of evaluation in enhancing performance of the road construction projects in Wakiso district.

The presentation starts with the response rate, followed by the background information. Later, findings are presented following the study objectives regarding the relationship of monitoring intensity, risk management and evaluation.

4.2 The response rate

The study targeted a sample size of 132 respondents and it managed to collect data from 98 respondents. Quantitative data that was collected was from 86 respondents while 12 respondents gave qualitative data using the interview guide. The total response rate was 74.2%.

Table 4:1: Presents the response rates to the study

Sample Size	**Actual Response**	**Percentage**
132	98	74.2%

Source: Primary data

4.3 BACKGROUND INFORMATION OF THE RESPONDENTS

The respondents were asked about their gender, level of education, number of years with the road construction projects and age. This information was required to ensure that the sample that participated in the study have similar distribution of the respondents by characteristics to that of the population it was drawn from. This determines the accuracy and representatives of information drawn from the sample to the population. Findings regarding their level of education, number of years with the road construction projects in Wakiso district and age are presented in Table 2

Table 4:2 Showing the background information of the respondents

Characteristics	**Category**	**Frequency**	**Percentage**
1. Gender	Male	**75**	**87.2**
	Female	**11**	**12.8**
2. Age group	Below 20	**-**	**-**
	21 – 30	**7**	**8.1**
	31 – 40	**46**	**53.5**
	41 – 50	**23**	**26.7**
	51 – 60	**10**	**11.6**
3. Number of years in working with road construction projects	Less than a year	**2**	**2.3**
	1 – 3	**8**	**9.3**
	4 – 6	**29**	**33.7**
	7 – 9	**40**	**46.5**
	Above 9 years	**7**	**8.1**
4. Level of Education	Secondary	**52**	**60.5**
	Professional/technical	**11**	**12.8**
	College or University	**9**	**10.5**
	PHD	**-**	**-**
	Others	**14**	**16.3**

Source: Primary data

4.3.1Gender

The study sought for gender to ensure that there was representation of both males and females. It was indicated that the majority of the stakeholders were male and they were found to dominate the road construction process at the district though the study managed to collect data from female respondents to get their views in relation to contract management and performance of the road construction projects in Wakiso district. This shows that the study findings can be concluded in respect of both males and females.

4.3.2 Age group

Analysis in relation to the age group had to be carried out to ensure that data was collected from mature people who can freely express their views in relation to contract management and performance of the road construction projects in Wakiso district. The results (Figure 4:2) show that all the respondents were above the consent age of 18 as per the Constitution of Uganda Government, and the majority were in the age group of 31 to 40 years. This shows that data was collected from mature people who would freely express their opinions and view in relation to contract management and performance of the road construction projects in Wakiso district.

4.3.3 Number of years working with the road construction projects

Further analysis was carried out in relation to the number of years the respondents had worked with the road construction projects to establish whether the respondents were knowledgeable enough to contract management and performance of the road construction projects in Wakiso district. The results (table 4:2) above show that the majority of the respondents had worked with the road construction projects for more than 9 years with the minority of the respondents

with less than one year. This shows that data was collected from experienced people with enough information in relation to contract management and performance of the road construction projects in Wakiso district

4.3.4 Education Level

The study sought to establish the education level of the respondents in relation to their ability to interpret and understand the administered questionnaires for reliable findings. Results in Table 4:2 above indicate that the majority of the respondents had attained college (11%), technical, or professional (13%) secondary education (61%) while very few had not attained any of the above mentioned level of education (16%). Hence the respondents could easily interpret the research instruments for reliable findings.

4.4 MONITORING INTENSITY AND PERFORMANCE

Monitoring on road construction projects has been considered by many scholars, statutory agencies and the society at large as the major aspect to enhance performance on the road construction projects in form of service quality, accountability plus ensuring the value for money through efficiency and effectiveness. Analysis was carried out in relation to monitoring intensity and performance of the road construction projects while considering those projects that were generally successful and those that were unsuccessful within Wakiso district. The researcher analyzed the data using mean, standard deviations, and correlation analysis after which conclusions and recommendations were drawn.

Monitoring in the road construction projects was always used to establish the level of compliance by the contractors to the contact terms, to track progress regularly, to ensure the project is

handled within time and budget allocated, to establish whether the contractors were following the prescribed quality standards as per the bills of quantities, to ensure value for money in the road construction projects, and to analyze whether the intended objectives were achieved. With regard to successful projects, the findings in (Table 4:3 below) reveal that there was proper road operation and maintenance plan in place (M = 4.033, SD = .233) for the responses from the generally successful projects. Similar findings were revealed in the unsuccessful road construction projects (M =4.10, SD = .305). Hence the district could easily identify the road project being implemented at a time and it could easily check on the level of progress plus mobilizing the required resources. Findings in the successful road construction projected indicated that funds were always utilized for the fulfilment of project objectives (M = 3.800, SD = 1.146). Funds were found to be averagely utilized in the unsuccessful road construction project (M = 3.40, SD = .723) for the fulfillment of project objectives. This indicated that in unsuccessful projects, there was some diversion of funds resulting into financial loss to the district.

In the generally successful road construction projects the contractors complied with the service Quality levels which were specified in the bidding documents (M = 3.67, SD = .883). This contrasted with the findings in the unsuccessful road construction projects where the respondents indicated that rarely would the contractors comply with the quality levels as specified in the biding documents (M = 1.40, SD = .563). This implies lack of conformity with the specified quality levels resulting in shoddy works in the completed road projects.

Table 4:3 Descriptive statistics for generally successful projects and the unsuccessful projects – Monitoring intensity

B1- Monitoring Intensity indicators	**Generally successful project (N*)**		**Unsuccessful projects (N**)**	
	M	S.D	M	S.D
a) Road authorities followed standards developed for their methods of contracting	3.67	1.112	3.30	.534
b)The contractors always complied with the service quality level which had been specified in the bidding document	3.73	. 883	1.40	.563
a) Contractors always required the amount of work during the month	2.73	1.032	1.50	.900
b) The contractors always used the stipulated amount of materials while constructing roads as per bills of quantities(BOQs)	2.27	.579	1.16	.530
c) Formal monthly inspections were carried out by the road authorities	3.40	1.056	3.16	.530
d) Supervisors on the road projects carried out the necessary road inspection	3.53	.915	2.86	.507
e) Project managers carried out the necessary road project inspection to meet the required standards.	3.63	.360	2.46	.681
f) There was a well maintained record book to follow the complaints of the road users	1.53	.200	1.23	.430

g) Always funds were allocated only for the fulfillment of project objectives	3.80	1.146	3.40	.723
h) Always funds were utilized only for the fulfillment of project objectives	3.10	1.247	1.33	.606
i) The district had a proper road operation and maintenance plan in place.	4.03	.232	4.10	.305

Source: Primary data

N* = 45 N** = 41

In the generally successful road construction projects, on average, formal monthly inspections were carried out by road authorities (M = 3.40, SD = 1.055). This concurred with the findings in the unsuccessful road construction projects where the respondents indicated that on average formal monthly inspections (M = 3.16, SD = .530). This was also in line with the findings from the interviews held with the district engineer who revealed that the district lacked sufficient manpower to effectively monitor all the road construction projects. The failure to carry out formal monthly inspections resulted into delivery of substandard work by the contractors, use of materials that did not meet the expected quality and quantity and loss of funds to the contractors through failure to deliver at all. The officers were found to be on full caseload and incase of any added work, they would not manage to secure time for the added activities hence, supervision on the roads was averagely carried out in form of inspection in both the generally successful (M = 3.53, SD = .915) and the unsuccessful projects (M= 2.86, SD = .507) which affected the quality of the roads and time overruns to the complete the projects. These findings show that there was low supervision and inspection in the unsuccessful projects as compared to the successful road construction projects in Wakiso district. In addition to the above the findings further indicate that the project managers averagely carried out the necessary road inspection to meet the required standards (M = 3.43, SD = 1.06) in the generally successful road construction projects in Wakiso

district. This concurs with the findings from the unsuccessful road construction projects were the majority of the respondents indicated that rarely would the project managers carry out inspection in the road construction projects (M = 2.46, SD = .430). The low level of project inspections was a weakness on the part of the district which was exploited by the contractors to deliver substandard work and loss of value for money.

The contractors (Table 4:3 above) in the generally successful road construction projects were found not to use the stipulated amount of materials while constructing roads as per the bills of quantities (BOQs) (M = 2.26, SD = .632). The situation was worse in the unsuccessful road construction projects where many respondents disagreed with the statement (M = 1.16, SD = .530).

Findings revealed that the contractors in the generally successful road construction projects did not do the required amount of work during the month M = (2.73, SD = .63). The situation was found to be worse in the unsuccessful road construction projects (M = 1.50, SD = .900). The findings further revealed that there was no well maintained record book to follow the complaints of the road users in both the generally successful road construction projects (M = 1.53, SD = .36) and the unsuccessful road construction projects (M =1.23, SD = .430). The failure to maintain a record book would hinder the contractors to get timely feedback and address any challenge before the conditions worsened. Further, the contractors would not tell in time whether they were meeting the expectations of other stakeholders more specifically the district and the road users.

However, there was more diversion of funds as compared to the generally successful projects, contractors do not do the required amount of work during the month, and they do not use the

stipulated amount of materials as per the bills of quantities (M = 1.16, SD = .530) (Table 4:3 above).

Findings from the interviews indicated that monitoring intensity for the generally successful projects in Wakiso district was highly related to the district's ability to have a five year, annual, and quarterly plans with project profiles where there was elaborate operation and maintenance. However, in most cases this operation and maintenance was not executed due to inadequate finding and diversion in the allocation of funds. Finding further indicated that monitoring intensity was related to the contractor's ability to comply with the service quality level which is specified in the bidding document, and the ability by the project managers to carry out the necessary road inspection to meet the required standards. However, for the unsuccessful projects, the major challenges were related to the utilization of funds to fulfill project objectives, followed by the ability by project managers to carry out the necessary road inspection, and the ability of the road authorities to carry out the monthly inspections.

Low relationship for the monitoring intensity variables in the generally successful projects were identified in the contractor's ability to do the required amount of work during the month and the use of stipulated amount of materials while constructing roads as per the bills of quantities while for the unsuccessful projects, least relationship was identified with the allocation of funds to fulfil project objectives. In conclusion, monitoring intensity had more roles to play in the unsuccessful projects than in the generally successful projects.

Findings revealed that there was a high relationship between the ability for road authorities to follow standards developed for their method of contracting with the formal monthly inspections carried out by the road authorities. With the monthly inspections road authorities could enforce

the standards developed in the contracts before the contractors finish the work which improved performance in the generally successful projects. However, for the unsuccessful projects, the ability for the road authorities to follow standards developed for their methods of contracting was found to be more related with the utilization of funds only for the fulfillment of project objectives, followed by the ability by the contractors to do the required amount of work, and the presence of a well maintained book to follow the complaints of the road users.

Findings indicated that the ability for road authorities to follow standards developed for their method of contracting in the generally successful projects was found to be highly related with the use of the required amount of material while constructing roads as per the bills of quantities. Through the use of "force account" the district provided the required equipments to the contractors which enabled them to access raw materials with ease.

Further, the study revealed that the ability of road authorities to follow standards developed for their method of contracting in the generally successful projects was highly related with the intensity of supervision on the road projects. In this case, the supervisors could establish whether the standards developed by road authorities were being followed by both the road authorities and the contractors to improve the performance of the road construction projects.

However, the ability by the road authorities to follow standards developed for their method of contracting in the generally successful projects had low relationship with whether the district had a proper road operational and maintenance plan in place and possession of a well maintained record book to follow the complaints of the road users.

Further analysis through correlations was carried out to examine the relationship between monitoring intensity and performance of the road construction projects in Wakiso district.

Table 4:4 The relationship between monitoring intensity and performance using Pearson Bi- variate correlation

		Monitoring intensity	**Performance**
Monitoring Intensity	Pearson Correlation	1	.791
	Sig. (2- tailed)	.	.000
	N.	86	86
Performance	Pearson Correlation	.791	1
	Sig. (2- tailed)	.000	.
	N	86	86

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

Findings revealed that there was a very significant relationship between monitoring intensity and performance in both the generally successful and the unsuccessful road construction projects in Wakiso district with a sig. value = .000. There was a high correlation (r = 79%) among the variables (Table 4:4 above). In conclusion, there is a positive relationship between monitoring intensity and performance of the road construction projects in Wakiso district in form of timely delivery, quality of work, high level of customer satisfaction plus ensuring value for money.

4:5 RISK MANAGEMENT AND PERFORMANCE

Analysis was carried out in relation to risk management and performance of the road construction projects in Wakiso district. Among the variables analyzed were: identification of risks involved in the road construction projects by contractors, time taken to analyze the risks

relating to projects in road construction, timely response to the risks to achieve project objectives, difference in participants' expectations and interests, the ability to shift the risks involved to the contractors, the success of the contractors to interpret contract language of road construction projects, the challenges with design and construction complexity, availability of the required manpower, on the road construction projects, regularity in supply of construction materials, and availability of equipments to the road construction projects.

Quantitative data was presented using factor analysis with descriptive statistics (Mean and standard deviations) and a correlations analysis was finally carried out to analyze the relationship between risk management and performance in the road construction projects in Wakiso district.

Basing on the descriptive statistics, findings show that the participants on the road projects always had different expectations and interests for the generally successful projects (M = 3.66, SD = .985) (Table 4:5 below). Similar results were indicated in the unsuccessful projects (M = 4.033, SD). The difference in expectations leads to increase in construction costs and delays. In as much the district wanted to improve on the quality of the roads, findings from the interviews indicated that there was much political influence which compromised with the quality of the roads in the district right from identification of contractors, awarding of tenders, and the construction process. This not only increased the costs of road construction but also the quality was compromised. In conclusion, political influence negatively affects the performance of the road construction projects in terms of quality and costs.

Table 4:5 Descriptive statistics- Risk management

Risk Management	Generally Successful road projects (N*)		Unsuccessful Road construction projects (N**)	
	M	S.D	M	S.D
a) The contractors could easily identify the risks involved in the road construction projects	3.40	.985	3.10	.547
b) Time was always time taken to analyze the risks relating to projects in the road construction	3.53	.915	2.40	.932
c) There was timely response to the risks to achieve road project objectives	3.30	.756	1.20	.406
d) Participants on the road construction projects always had different expectations and interests	3.67	.816	4.03	.764
e) The risks involved in the road construction projects could easily be shifted to the contractors	2.47	.673	1.46	.730
f) The contractors could successfully interpret contract language of the road construction projects	3.47	.833	4.20	.550
g) The construction projects were not always challenged with the design and construction complexity.	3.20	1.146	2.46	.860
h) There was always the required manpower on the road construction projects	3.333	1.290	1.266	.520
i) There was always availability of funds for the project	3.20	1.320	1.53	.681
j) Equipments were always available to the road construction projects	2.93	1.279	2.32	.812
k) The funds were always available to execute the duties of the projects	1.45	.470	2.63	.564
l) Road construction projects were always affected by changes in weather conditions	4.28	.541	4.30	.673
m) The political influence did not affect road construction projects negatively	2.35	.473	3.45	1.134
n) The statutory regulations favored road construction in Wakiso district	4.36	.894	2.46	.765

N* = 45 N** = 41

Source: Primary data

Findings further revealed that in both the generally successful and unsuccessful road construction projects, the contractors could successfully interpret the contract language with the Mean of 3.46, SD = .833, and the mean of 4.20 and SD = .550 respectively. In conclusion, when the contractors can easily interpret the contract language of the road construction projects, the expected quality of work under the prescribed terms and conditions is attained because they aim at meeting their contractual obligations.

Findings indicated that, averagely, the contractors could identify the risks involved in the road construction projects with the mean of 3.40 and a standard deviation of .985 for the generally successful projects plus the mean of 3.10 and the standard deviation of .547 for the unsuccessful projects. The ability to identify the risks helps to plan well so that all foreseen problems are managed. In the generally successful road construction projects, there was average timely response (M = 3.40, SD = .98) as compared to the unsuccessful projects (M = 1.20, SD = .406). Findings from the interview indicated that the contractors did not have risk management plans in place and therefore they could not easily identify the risks that were involved in the road construction projects at the district. For generally successful projects, findings with CAIIP road revealed that the contractors would ask for high charges to compensate for the delays in the payments by their client. According to the district engineer, at times the contractors would expedite the work and hand over quickly to avoid incurring extra costs, others would minimize the risk by phased-stage handover, and other contractors would engage in front loading at biding price were 60 to 70 percent of the contract sum was paid to the contractors at the beginning. This posed a very high risk to the district in case the contractor abandoned the work, there was no way the district would recover the money that was paid to the contractors which could be attributed to

fake insurance bonds or security bonds. In conclusion, the failure to identify the risks leads to delays and increased cost, more especially to the district.

Further findings indicated that on average, the generally successful road construction projects are challenged with the design and construction complexity (M = 3.20. SD = 1.146), which challenge was high in the unsuccessful projects (M = 2.46, SD = .860). The design and construction complexity leads to added costs in case the contractors are to redo the work. When quality standards are not fulfilled as per the bills of quantities, accidents can easily occur to the road users on the badly fixed spots.

The generally successful projects, the contractors were found to take time to analyze the risks relating to projects in the road construction (M = 3.533, SD = .915) which was lacking in the unsuccessful projects (M = 2.400, SD = .932). Proper risk analysis helps to know the magnitude of the risks and come up with the right appropriate control, mitigation, and adaptation measures to ensure value for money, timely delivery, low cost and customer satisfaction.

Further findings indicate that on average, the generally successful projects on average had the required manpower (M = 3.33, SD = 1.29) which manpower was lacking in the unsuccessful projects (M = 1.533, SD = .520). Analysis indicated that both the generally successful (M = 2.93, SD = 1.27) and the unsuccessful (M = 1.53, SD = .681) projects lacked the major equipment for road construction such as water bousers and the trucks which were hired expensively from the original owners. With the introduction of a force account by the government, equipment for road construction were to be provided by the district which was not adequate to improve performance in terms of time and cost, hence affecting negatively the performance of the road construction projects.

Findings from the focal point person in charge of monitoring at the district indicated that the contractors had risk management plans in only the initial stages which risks would include breakdown of machinery and weather changes. With time, these changes are addressed as they affect the construction process depending on the magnitude of the effect to the construction process without clear provisions of such incidences.

Correlation analysis was carried out using Pearson correlation Bi- variate to examine the relationship between risk management and performance in both the generally successful and the unsuccessful road construction projects in Wakiso district. The results were as indicated from Table 4:6 below;

Table 4:6 Pearson – Bivariate correlation between risk management and performance

		Risk management	**Performance**
Risk management	Pearson Correlation	1	.729
	Sig. (2- tailed)	.	.001
	N.	86	86
Performance	Pearson Correlation	.729	1
	Sig. (2- tailed)	.001	.
	N	86	86

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

Source: Primary data

Findings indicated that there was a significant positive relationship between risk management and performance in the road construction projects in Wakiso district with a significance value of 0.001 and r = 73% (Table 4:6).

Findings from Table 4:6 indicated that the null hypothesis can be rejected since there was a significant positive relationship between risk management and performance in the road construction projects in Wakiso district.

Further, findings indicated that performance in the generally successful road construction projects was highly related with the ability of the contractors to identify risks involved in the road construction projects, followed by the availability of funds, the political influence in the road construction projects, the difference in expectations and interests by the participants on the road construction projects, and the availability of the required manpower on the road construction projects. Findings further indicated that the performance in the unsuccessful road construction projects in Wakiso district was highly related to the challenges associated with the designs and construction complexity, followed by the time taken to analyze the risks relating to the road construction projects, and the availability of funds to execute the duties. The availability of funds plays a very significance role in the performance of the road construction projects. Inadequate and delayed disbursement of funds accounts for the delays and cost overruns.

In conclusion, risk identification and analysis, the challenges related to construction complexity and design, availability of the required manpower, political influence, and availability of funds to execute the duties were the most significant risk management factors that affected the performance of the road construction projects in Wakiso district.

4.6 EVALUATION AND PERFORMANCE

Evaluation involves constant review of the project to ascertain whether it is achieving the expected quality standards and meeting the objectives of the respective stakeholders. Evaluation is meant to be a continuous exercise throughout all the stages of the project. This helps to identify the problems and find solutions in a timely manner to ensure high quality of the goods and services delivered. Analysis of evaluation in the road construction projects in Wakiso district was carried out using a number of sub variables which include: the availability of appropriate documentation by the contractors, the availability of enough documentation by Wakiso district in relation to the road construction projects, the road construction projects give voice to participant's experience, information is always provided to enhance the quality of the road construction projects, the contractors are in position to identify the problems, the contractors are in position to identify the possible causes of the problems in the road construction projects, the contractors brainstorm on the factors that may affect the road construction projects, road contract managers always carry out assessment in relation to goals and objectives as stipulated in the initial agreement, objectives are always adjusted where there are gaps, and timely decisions about the future of the road construction project are always taken. Findings were presented using descriptive statistics and correlation analysis.

Table 4:7 Descriptive statistics- Evaluation for generally successful projects and the unsuccessful projects

Evaluation	Generally successful road Projects (N*)		Unsuccessful road construction projects (N**)	
	M	**S.D**	**M**	S.D
a) There was always appropriate documentation by the road contractors	3.96	.816	4.10	.484
b) There was always enough documentation by Wakiso district in relation to road construction projects.	4.53	.361	4.13	.507
c) The road construction projects gave voice to participant's experience	3.60	1.121	1.33	.606
d) Information was always provided to enhance the quality of the road construction projects	3.46	1.187	2.20	.996
e) The contractors were in position to identify the problems	3.73	1.125	4.20	.310
f) The contractors were in position to identify the possible causes of the problems in the road construction projects	3.40	1.183	3.90	.661
g) The contractors brainstormed on the factors that may affect the road construction projects	1.33	.899	1.36	.556
h) Road contract managers always carried out assessment in relation to goals and objectives as stipulated in the initial agreement	3.40	.985	1.40	.498
i) Objectives were always adjusted were there were gaps	1.933	.883	2.33	.479
j) Timely decisions about the future of the construction projects were always taken	2.86	.990	1.30	.466

N* = 45 N** = 41

Source: Primary data

Findings from the generally successful projects in relation to evaluation of the road construction projects in Wakiso district (Table 4:17 above) indicated that there was always enough documentation by Wakiso district in relation to road construction projects (Mean = 4.53, SD = .361). This concurs with the findings from the unsuccessful road construction projects (M = 4.13, SD = .507). The documentation was mainly in form of road construction plans and the contracts that were awarded to the contractors. The district had a five-year development plan, annual work plans, quarterly work plans with project profiles that included operation and maintenance (O& M) provision. These work plans had specific objectives which the district used to monitor the performance of the road construction projects in terms of time, costs, and value for money. The district can have work plans indicating output expectations, targets, and indicators. However, if no effective evaluation carried out to assess the worth of every phase of the road construction project, the district cannot achieve the 6Rs – right quality, in the right quantity, in the right time, at the right cost, for the right purpose, and from the right source.

The study further indicated that the road contractors had appropriate documentation in relation to the road construction projects (M = 3.96, SD = .816) for the generally successful road construction projects and the unsuccessful road construction projects (M = 4.10, SD = .484). In conclusion both the district and the contractors had the necessary documentation in relation to the road construction projects in Wakiso district.

Further, the unsuccessful road construction projects could identify the problems (M = 4.20, SD = .310) and the contractors were in position to identify the possible causes of the problems (M = 3.90, SD = .66). This is similar to the generally successful road construction projects (M = 3.73, SD = 1.12). Findings from the interviews revealed that on every road the engineer would

convene meetings. However, there was always very low turn-up for meetings and even people in attendance were not knowledgeable enough. They indicated an example of CAIIP roads where the community was supposed to sign on the CAIIP road forms, the community members did so when they did not understand the content that was involved in the contracts given the low turn-up for the meeting. Other major problems that faced the road construction projects in Wakiso district that were identified from the interviews include: the lack of due diligence in evaluation, the high bureacratic tendencies involved in the road construction projects, low sensitization and source of funding for the evaluation exercise since you must hire independent experts in the field of evaluation. Evaluation helps timely identification of gaps which call for corrective measures to be taken and other decisions are made to achieve the desired outcomes. It should be clearly spelt out in the contract process of road construction projects that an independent evaluation will be carried out all stakeholders.

On average, the generally successful road construction projects carried out assessment in relation to the goals and objectives as stipulated in the initial agreement (M = 3.46, SD = .985), However, the findings indicated that in the unsuccessful road construction projects no assessment was carried out to relate the goals and objectives as stipulated in the initial agreement. This hindered to check on the level of progress on the various road construction projects to come up with timely solutions to the challenges that were experienced not until the contracts would came to an end.

Findings revealed that information was averagely provided to enhance the quality of the road construction projects in the generally successful road construction projects (M = 3.46, SD = 1.187). However, for the unsuccessful road construction projects, there was very limited flow of information to enhance the quality of the road construction projects (M = 1.36, SD = .556). The

failure to get timely and accurate information negatively affects performance of road construction projects. Findings further indicated that the generally successful road construction projects gave voice to participant's experience (M = 3.66, SD = 1.121). The findings were in contrast of the unsuccessful road construction projects (M = 2.20, SD = .996). Whenever, the road construction projects begin when the communities expect to tap the opportunities such as starting up business ventures, they provide the expected support to the contractors which improve performance.

However, both the generally successful and the unsuccessful road construction projects could not brainstorm on the factors that would affect the road construction projects (M = 1.33, SD = .899) and (1.36, SD = .556) respectively, the objectives of the road construction projects were rarely adjusted where there were gaps for the generally successful road construction projects (M = 1.93, SD = .883)and the unsuccessful road construction projects (M = 2.33, .479), there was no timely decision making about the future of the construction projects for the generally successful (M = 2.86, SD = .990). The same variables were found to be lacking in the unsuccessful projects where rarely would the contractors brainstorm on the factors that affected the road construction projects, (M = 1.36, SD = .556). Findings from the interviews indicated no evaluation was carried out to check on the quality and performance on the road construction projects in Wakiso district. In conclusion, when an independent evaluation on road construction projects is not conducted, the quality of the completed works keeps on demanding.

Further analysis was carried out to examine the relationship between evaluation and performance of the construction projects in Wakiso district. The findings were as presented in Table 4:8 below;

Evaluation was found to have a much higher positive correlation with performance in the road construction projects (r = 89%) in Wakiso district with a significant value of 0.000. In conclusion construction projects in Wakiso district.

Table 4:8 Pearson – Bivariate correlation between Evaluation and performance

		Evaluation	**Performance**
Evaluation	Pearson Correlation Sig. (2- tailed) N.	1 . 86	.885 .000 86
Performance	Pearson Correlation Sig. (2- tailed) N	.885 .000 86	1 . 86

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

Source: Primary data

Analysis revealed that independent evaluation variables that influenced performance in the road construction projects in Wakiso district included: the ability of the contractors to identify the problems, appropriate documentation by the road contractors, the ability by the contract managers to carry out assessment in relation to goals and objectives as stipulated in the initial agreement, timely decisions about the future of the construction projects, and provision of information to enhance the quality of the road construction projects. In conclusion, provision of information relating to the construction projects, appropriate documentation, and the ability of the contractors to identify problems were the most significant evaluation factors that affected the

performance of road construction projects in both the generally successful and the unsuccessful road projects.

CHAPTER FIVE

DISCUSSION OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the findings, conclusions, and recommendations of the study. The discussion follows study objectives which were: to examine the role of monitoring intensity in enhancing performance of the road construction projects in Wakiso district; to analyze the relationship between risk management and performance of the road construction projects in Wakiso district; to assess the role of evaluation in enhancing performance of the road construction projects in Wakiso district.

5.2 Discussion of the findings

5.2.1 Monitoring Intensity and performance

Monitoring intensity has been one of the most commonly known measures to enhance performance, more especially in an environment that involves a master (the government) and the agent (the contractor). The master normally has objectives and must ensure the agent's work finally meets his expectations. However, the agent too has objectives which he can achieve by exploiting the weaknesses of the master and among the weaknesses is failure to monitor the projects which give chance to the contractors to do substandard work or fail to complete projects within the budgeted time frame, resulting into cost overruns as was the case for the unsuccessful road construction projects in Wakiso district. This concurs with Ngosong (2015) who indicated that lack of quality in the construction is manifested in poor or non-sustainable workmanship and unsafe structures; and in delays, cost overruns and disputes in construction contracts.

According to the district engineer, monitoring helps to ensure compliance to the guideline and set standards for road construction, ensure value for money through economy, efficiency, and effectiveness. He further indicated that monitoring intensity is the objective of the project. However, despite all those benefits out of monitoring intensity, he cited the non availability of funds to facilitate regular monitoring of all projects in the district on the part of the contractors and the district local government.

In the interview with the Engineer Nansana Town Council, it was indicated that monitoring intensity helps to establish the status of the project, it provides checks and balances of whether the intended objectives were achieved, and relevance of the projects to the surrounding communities.

Findings indicated that though the generally successful projects complied with the service quality level which had been specified in the bidding document, the unsuccessful road construction projects were found not to comply with the service quality level as per the bidding document. This concurs partly with the findings by the World Bank report, 2004 which indicated that in order to be entitled to the monthly payment for maintenance services, the contractors must ensure that the roads under contract comply with the service quality levels which have been specified in the bidding document. It is possible that during some months they will have to carry out a rather large amount of physical works in order to comply with the required service levels and very little work during other months. Yet their monthly payment remains the same as long as the required service levels are complied with. Findings indicated that for the unsuccessful road construction projects, though no visible work was done, payments had already been made to such projects which caused the district to lose a lot of funds to such projects.

Findings indicated that the district had a proper maintenance plan in place indicating the type of roads to be constructed, their related costs and the nature of funding. These plans were drawn by the district engineer in consultation with the district construction committee. According to the district engineer planning helps the district to solicit for funds from the central government and monitoring the progress in the district by relating what was planned with the actual achievement over a given period of time.

Findings indicated that monitoring intensity helped to ensure that funds were utilized for the fulfillment of project objectives. However, the projects experienced delays in the disbursement of funds. This was further confirmed by the district engineer who indicated that the funds were not always available which make contractors to charge high rates for road construction because they delayed being paid by their client.

Further, findings indicated that the contractors complied with the service quality levels as specified in the bidding documents. However, the standards set for the contractors from their clients were found to be low for example the road size, the amount of materials such as gravel to be used were low since high specification level would mean high related costs to the clients which funds would not be solicited to facilitate road construction of high standards. In this case the specifications are low which were always met by contractors but it affected negatively the quality of the roads in terms of size and longevity. The quality of the road had to depend on the expected level of funding.

In the generally successful projects, funds were utilized for the fulfillment of project objectives and the contractors complied with the service quality levels which were specified in the bidding documents. However, the officer in charge of road projects monitoring in Wakiso district

indicated that there were challenges of meager resources which led to cheaper methods and materials being used for example instead of using asphalt, bitumen was used for surfacing.

On average, the findings indicated that there was monthly inspection in the generally successful road construction projects and the managers carried out the necessary road inspection which aspect was lacking in the unsuccessful road construction projects. This contrasted with Queiroz (2005), five steps that can be followed to ensure the quality in monitoring intensity such as: Contractor's self-control system; (2) formal monthly inspections; (3) supervisors (formal/informal) inspections; (4) project managers (formal/informal) inspections; and (5) maintaining a record book to follow the comments or complaints of roads users. This approach is able to ensure the quality of maintenance work. However, the district was found not to maintain any record book to follow the comments or complaints of the user. In the long run the expectations of various stakeholders could not be met and iron out the weakness before the final completion of the road construction projects.

However, in the generally successful projects the contractors were found not to use the stipulated amount of material while constructing roads as per bills of quantities (BOQs), the contractors did not do the required amount of work during the month which was basically attributed to shortage of funds provided by the district and they did not have a well maintained record book to follow the complaints of the road users. This would help two identify the problems early enough to find appropriate solutions before the conditions worsen for example some roads were too narrow and others caused drainage challenges to the residents which led to destruction of property.

Findings indicated that there was more diversion of funds in the unsuccessful project as compared to the generally successful projects. The poor performance in the generally successful road construction projects was basically attributed to the delayed disbursement of funds to the road construction projects. According to the officer in charge of monitoring the road projects in Wakiso district, she indicated that road maintenance plans were executed basing on the availability of funds.

Findings indicated that monitoring intensity for the generally successful projects in Wakiso district was highly related to the district's ability to have a proper road operation and having a maintenance plan in place, followed by the contractor's ability to comply with the service quality level which is specified in the bidding document, and the ability by the project managers to carry out the necessary road inspection to meet the required standards. However, for the unsuccessful projects, more correlation was realized in the utilization of funds to fulfill project objectives, followed by the ability by project managers to carry out the necessary road inspection, and the ability of the road authorities to carry out the monthly inspections. This concurs with the findings from the district engineer who indicated that the district lacked sufficient manpower to efficiently supervise all the respective road construction projects.

Findings indicated that there was a higher positive significant relationship between monitoring intensity and performance in both the unsuccessful projects and the generally successful road construction projects in Wakiso district. In conclusion, monitoring intensity plays a very significant role to the performance of both the generally successful and the unsuccessful road construction projects in Wakiso district.

5.2.2 Risk Management and Performance

According to Hannington and Hiehaus (2015), the term risk has a variety of meaning in business and everyday life. In most cases, risk refers to any situation where there is uncertainty about what outcome will occur. In financial management and investment management, risk is often used in a more specific sense to indicate possible variability in income around some expected value. Risk further, analyses the expected value as the outcome that would occur on average if a person or business were repeatedly exposed to the same type of risk. Risk management involves the tools used to guard against the possibility of a loss.

The study examined the tools being used in both the generally successful and the unsuccessful road projects in Wakiso district and their effect on performance which include: identification of risks involved in the road construction projects by contractors, taking time to analyze the risks relating to projects in road construction, timely response to the risks to achieve project objectives, harmonizing participant's expectations and interests, shifting the risks involved to the contractors, interpretation of contract language for road construction projects, understanding the design and construction complexity, regular supply of the required manpower, regular supply of construction materials and equipments to the road construction projects.

Findings from the respondent indicated that both the successful and the unsuccessful road construction projects could interpret the contract language. In this case the terms and conditions under which the district and the contractors were supposed to work were very clear on both sides. These included the mode of delivery and the penalty in case of non compliance to the terms in the contract. This would finally help to ensure value for money, completion of projects within the stipulated time and to avoid cost overruns. The findings concurs with Hyman, 2009, Austroads, 2003; Hardy 2001 who indicated in their studies that risk management results in

better outcomes at lower cost with less risk and more financial predictability for highway agencies. Austroads (2003) and Hardy (2001) further indicated that risk allocation to the contractors would be beneficial for the road authorities only when contractors are better to manage the risk and the contractors must be able to properly understand risk management to successfully interpret contract language and share the risk.

According to the district engineer, normally the contractors would expedite the work and hand over quickly for example the CAIIP roads where the contractors would avoid incurring added costs. Secondly, the contractors would use phased stage handing over which would help to reduce delays and at the same time minimizing the related costs. However, some contract terms like front loading at bid pricing would increase the risks to the district. In this case the contractors would be paid a given percentage say 60 to 70 percent of the sum of the contract cost at the beginning. Finding indicated that even if the contractors abandoned work, there was no way to recover the money paid to the contractors. According to the district engineer, this could be as a result of fake insurance bonds or security bonds.

Further findings indicated that the participants on the road projects which include the contractors, community, government officials always had different expeditions and interests. This very issue was evident in both the generally successful and the unsuccessful projects. With diverging interests there was a higher possibility of fund diversion and the funds would not be fully utilized to specifically meet the goals of the projects more especially the non successful projects since those who would ensure that resources were put to the right usage could have the authority but not the strength to ask the contractors to fully account for resources. The findings concurs with Banaitiene and Banaitis (2012) who indicated that construction projects are exposed to uncertain environment because of such factors as planning, design and construction complexity, presence

of various interest groups (owner, consultants, contractors, suppliers etc), resources (manpower, materials, equipment, and funds) availability, environmental factors, the economic and political environment.

The findings indicated that the contractors would again identify the risks related to the road construction projects. In the generally successful projects at times the contractors would take time to analyze the risks relating to the road construction projects which was lacking in the unsuccessful road construction projects. According to the Monitoring officer at Wakiso district, the major risks include; the meager resources which lead to use of cheaper methods and materials for example using asphalt instead of bitumen for road surfacing, resistance by the citizens to widen the roads, difficult terrain such as swamps, weather changes where water washes away the surface, change of policies by the government in relation to road construction contracts such as the use of force account where the district provides equipment to be in the construction process which demoralizes the contractors, risks relating to the burning of bitumen which can catch fire, accidents on the road, high traffic and increase in maintenance cost as the market price for the major raw materials change.

Findings revealed that there was average response to the risks to achieve road project objectives and the risks involved could not be shifted to the contractors. The Nansana Town clerk indicated that the contractors would ask for higher prices to avert any risk associated with the increase in price because of the delayed payments from the central government. Further, the findings revealed that the contractors for the generally successful projects were rarely challenged with the design and construction complexity and they had the required manpower on the project. However, they lacked the risk management specialist that would help them to identify, analyze and control the risks related to the construction projects.

Findings from the study indicated that both the generally successful and the unsuccessful projects lacked equipments for road construction. These include; the water bousers, gravel stones and good quality murram. Some of the raw materials were transported from far areas which increased the construction costs and some were forced to use raw materials which would not meet the expected standards hence affected the quality of the roads negatively.

Findings from the interviews indicated that the contractors were challenged with change of policies by the government which increased the risk to the contractors for example the introduction of force account the district receives road equipment from the central government and uses local labor in form of road gangs. The long lists of the prequalified contactors were rendered redundant, secondly, the income projections were affected leading to losses, and indirect losses are experienced as their equipments were left redundant.

Findings show that there was a high correlation between the timely response to risk to achieve road project objectives with the regularity in supply of the construction materials and the availability of the required manpower on the road construction projects. Findings further show that time taken to analyze the risks was related to the interpretation of the contract language and the different expectations and interests by participants on the road construction projects. When the participants basically the client has different personal interest in the road construction project, then he/she will not be bothered by the quality of work of work done by the contractors and since the contractors will not be accountable for their actions, then they do not waste their time in managing risks.

Findings show that there was a very high positive relationship between risk management and performance in both the generally successful and the unsuccessful road construction projects. In

this case, the null hypothesis can be rejected since there is a significant relationship between risk management and performance.

5.2.3 Evaluation and Performance

Evaluation is a quality assurance management tool which is used to check on the level of success, the problems that are faced, the efficiency in the use of resources, the ability of the project to meet the expectations of the shareholders, and the way forward to ensure high quality service delivery. It is recommended that project evaluation should be a regular ongoing exercise which should be carried out at all project stages. According to DAAD (2010), a critical self – evaluation is important because we are at times too eager to accept that everything is good which concurs with the road projects in Wakiso district. In many cases a self – evaluation serves as a preparation for site visits by external experts. However, site visits by external evaluation experts were lacking in Wakiso district road construction projects. The self- evaluation report provides the external experts with basic information. It provides an opportunity for discovering quality, and it provides information not known to everyone. This contrasts with the findings at the district where project related information was not fully disclosed to all the stakeholders.

The information exists but only a small group of people knows it, it shows which consideration choices need to be made, and the information gathered is brought to bear on base line information. Evaluation answers the following questions: why do we do what we are doing?, do we indeed do the right thing?, do we do the right thing in the right way?, do we have a thorough command of the process to actually realize what we want?, do we actually achieve what we

want?. The researcher based on the above questions to assess how evaluation affects the performance of the road construction projects in Wakiso district.

Findings in relation to evaluation of the road construction projects indicated that the district had proper documentation in relation to the construction projects. Information was available in relation to all ongoing projects and their status which included those that were completed and ongoing. However, information relating to the level of success could not be accessed at the district. This information could not used by the district to take the future course of action in relation to the road construction projects. The findings concurs with Oluka and Basheka (2015), who indicated that lack of access to information, limited stakeholder involvement/participation, and lack of political will to monitor contracts were among the major constraints in contract management.

According to the engineer Nansana Municipal Council, the district had a five year plan. In either the annual work plans or quarterly work plans, the operation and maintenance was catered for as the operation and maintenance plans were partly implemented. The district would base on the work plan to evaluate whether the set targets were achieve and establish the variance between what was planned and the actual achievements. This would check on the timely completion of the projects and value for money by checking on the quality of the roads as per the plans.

Findings further indicated that the road construction projects were affected by weather changes more especially too much rains. This did not only account for delays but also loss of materials since the rain could wash away some materials such as soil and the stones being used. During the dry season, the cost of watering the road increased as residents got fed-up of the dusty environment where some would reach an extent of staging strikes in resistance of the prevailing

dusty conditions which would put the employees and their construction materials such as tracks at a greater risk of being destroyed. To avoid such incidences, water bousers had to be used on the daily basis which was always at high cost on the part of the constructors.

Further, the findings in relation to the generally successful road construction projects indicated that they gave voice to participant's experiences. The different stakeholders basically the community would air out their view through organized meetings. According to the co-coordinator for CAIIP roads, on every road the engineer convened meetings. However, there was always low turn-up and yet people were found not to be knowledgeable enough in relation to the content involved in the contracts they were given to sign. In conclusion though there was an open forum for the participants to share their views as provided by the district, the low turn- up for the meetings hindered the full exploitation of this opportunity. There was increased sensitization of the masses and co-funding was carried out where the community would buy the culverts to their premises. This helped to reduce the costs on the road construction materials and increased responsibility by the community to ensure that the roads construction process would proceed as planned without delays. However, the unsuccessful road construction projects were found not to give participant's experience to the community other than the district. The community could know little about the contractor's activities

Findings in relation to the unsuccessful projects, it was indicated that there was appropriate documentation by the contractors and the contractors were in position to identify the problems plus there possible causes. However, despite the fact that they knew the problems, they could not come up with measures to address those challenges before they could worsen to unmanageable situations that resulted into great losses especially on the side of their client that is Wakiso district. This concurs with DAAD (2010) which indicated that information concentrate in just a

small group of individuals and once no effort is taken by the entity to find it, then the problems persist which affects negatively the performance of the entity.

Findings further indicated that the unsuccessful projects could not make timely decisions about the future of the construction projects, rarely were the objectives adjusted where there were gaps, and the contractors could not brainstorm on the factors that may affect the construction projects. Brainstorming helps to identify the project problems, examine the level of success and come up with solutions in the timely manner.

Findings further indicated that performance in the generally successful road construction projects was more related with the contractor's ability to identify the problems, the political influence in the construction projects, and the availability of funds to execute the duties of the road projects. For the unsuccessful road construction projects, performance was found to be highly correlated with the availability of funds to execute the duties of the projects, appropriate documentation by the contractors, the ability by the contractors to carry out assessment in relation to the goals and objectives as stipulated in the initial contract agreement, timely decision about the future of the construction projects and the ability to get information to enhance the quality of the road construction projects.

The study found out that the road construction projects lacked evaluation programs at all stages. This was attributed to the limited funding to facilitate the exercise and it was not clear who would be the final beneficiary and who would finance the evaluation process between the contractors and the district. However, there was a high positive significant relationship between evaluation and performance of the road construction projects in Wakiso district in both the generally successful projects. For this reason the null hypothesis can be rejected that there is no

significant relationship between evaluation and performance of the road construction projects in Wakiso district.

5.3 Conclusions

5.3.1 Monitoring intensity and Performance

If monitoring intensity is not taken seriously in the road construction projects, this contradict with the guidelines and set standards for road construction projects resulting into poor performance.

Monitoring intensity in the road construction projects is positively related to performance.

5.3.2 Risk Management and performance

Performance in the road construction projects is enhanced when risk management is carried out at all stages. The measures to control risk by contractors such as expediting the work and hand over quickly and use front loading at bid pricing where contractors are paid 60 to 70 percent of the contract value at the beginning enables contractor to shift risk to the district.

Inadequate and untimely funding can result into project delays, high cost of the road construction shoddy works.

Risk management is related to the availability of resources in the road construction projects. These include the human resources, and the physical resources such as raw materials, tractors, water bousers. The risk tend to be low when the resources are in abundance and the risk tend to be high when there is shortage in supply of the resources which results into poor performance in form of delays, cost overruns and construction of substandard roads.

5.3.3 Evaluation and Performance

Failure to carry out evaluation was in the road construction projects hinders timely response to the problems which negatively affect the quality of work in the road construction projects. This leads to poor accountability, lack of transparency, lack of value for money, and finally it creates a pool of dissatisfied stakeholders.

Road inspection by the district authorities plays a very significant positive role to enhance performance in any project be it public or private.

Evaluation, monitoring intensity, and risk management are equally important to enhance performance in the construction projects.

5.4 Recommendations

5.4.1 Monitoring intensity and performance

There is need to increase on the number of road inspectors. The government should recruit more inspectors at Wakiso district to ensure value for money and timely completion of the road construction projects. There were few inspectors with the technical competence to effectively, monitor, manage the risk, and at the same time carry out the evaluation since the few that were already at the district were already on full caseload. Given, the insufficient funds at the district, the added cost of hiring new inspectors on the road construction projects won't be equated to the amount of loss incurred as a result of totally failing to effectively supervise the road construction projects.

Monitoring intensity should be increased in both the generally successful and the unsuccessful road construction projects.

5.4.2 Risk management and performance

The district must first ensure that there is enough resources basically the finances and the human resources before they can embark on any project to avoid frustrations on the side of the contractors which finally lead to poor performance as the real costs tend to be high in the long run.

The district must reduce political influence in the road construction projects since it reduces the command of the process

5.4.3 Evaluation and Performance

Evaluation must be carried by the district to ensure value for money. Both internal and evaluation should be carried out to establish whether the projects achieved the intended goals and objectives. However, evaluation requires technical internal and external experts to influence any decision making in relation to the goals and objectives, it requires a lot of funds to facilitate the exercise which could currently be lacking at the district. There is therefore a need to include the evaluation costs on the budget while planning for the road construction projects.

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Appendices: Appendix I: Krejecie and Morgan table for sample determination

Table for Determining Sample Size for 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

Note: "N" is population size
"S" is sample size.

Source: Krejcie & Morgan, 1970

Appendix II: Questionnaire to the unsuccessful road construction projects

Dear respondent,

My name is Mayie Banyenzaki, pursuing a master degree in Project Monitoring and Evaluation at Uganda Technology and Management University (UTAMU). You have been selected as one of the respondents in this research as I am assessing the effect of contract management practices on road construction project performance in Wakiso district with generally successful projects, These include; Nakakolo – Luggo in Busukuma sub – county, Kigoogwa Wabitembe Buwambi in Gombe sub- county, and Kyooga - Banda- Mende in Wakiso district. All responses given are for educational purposes thus are considered confidential.

BIO DATA

- What is your gender

  Male ☐ Female ☐

- Age group

  Below 20 ☐

  20-30 ☐ 41-50 ☐ above 60 years ☐

  31-40 ☐ 51-60 ☐

- Number of years in working with road construction projects

  Less than a year ☐ 4 - 6 ☐ above 9 years ☐

1 – 3 years ☐ 7 - 9 ☐

- What is your education level

Secondary school College/university ☐

Professional PHD

SECTION B

You are required to respond to each item in subsequent sections using the following scale by ticking the appropriate option.

SA (5) = Strongly agree D(2) = Disagree

A (4) = Agree SD (1) = Strongly disagree,

NS (3) = Not sure

B1- Monitoring Intensity	SA (5)	A (4)	N (3)	D (2)	SD (1)
a) Road authorities follow standards developed for their methods of contracting					
b) The contractors always comply with the service quality level which has been specified in the bidding document					
c) Contractors always do the required amount of work during the month					
d) The contractors have always used the stipulated amount of					

materials while constructing roads as per bills of quantities(BOQs)					
e) Formal monthly inspections are carried out by the road authorities					
f) Supervisors on the road projects carry out the necessary road inspection					
g) Project managers carry out the necessary road project inspection to meet the required standards.					
h) There is a well maintained record book to follow the complaints of the road users					
i) Always funds are allocated only for the fulfillment of project objectives					
j) Always funds are utilized only for the fulfillment of project objectives					
k) The district has a proper road operation and maintenance plan in place.					
B – 2 **Risk Management**					
a) The contractors can easily identify the risks involved in the road construction projects					
b) Time is always taken to analyze the risks relating to projects in road construction					
c) There is timely response to the risks to achieve road project					

	objectives					
d)	Participants on the road construction projects always have different expectations and interests					
e)	The risks involved in the road construction projects can easily be shifted to the contractors					
f)	The contractors can successfully interpret contract language of the road construction projects					
g)	The construction projects are not always challenged with the design and construction complexity.					
h)	There is always the required manpower on the road construction projects					
i)	There is regular supply of construction materials to the road construction projects					
j)	Equipments are always available to the road construction projects					
	Risk Management	SA (5)	A (4)	NS (3)	D (2)	SD (1)
k)	The funds are always available to execute the duties of the projects					
l)	Road construction projects are always affected by changes in weather conditions					
m)	The political influence does not affect road construction projects negatively					

n)	The statutory regulations favors road construction in Wakiso district					
	B- 3 Evaluation					
k)	There is always appropriate documentation by the road contractors					
l)	There is always enough documentation by Wakiso district in relation to road construction projects.					
m)	The road construction projects give voice to participant's experience					
n)	Information is always provided to enhance the quality of the road construction projects					
o)	The contractors are in position to identify the problems					
p)	The contractors are in position to identify the possible causes of the problems in the road construction projects					
q)	The contractors brainstorm on the factors that may affect the road construction projects					
r)	Road contract managers always carry out assessment in relation to goals and objectives as stipulated in the initial agreement					
s)	Objectives are always adjusted were there are gaps					
t)	Timely decisions about the future of the construction projects are always taken					

C- Project Performance					
a) The contractors always complete the projects within the budget estimates					
b) The cost of constructing roads is averagely low					
c) Most of the road users are relatively satisfied with the standard of roads in Wakiso district					
d) The road projects are always completed in the scheduled time frame.					
e) The road projects meet the expected quality specifications					
f) The roads are always safe for the road users					

One item in the model is not included in the performance construct. Just to iterate the point we discussed some time ago when we were looking through this instrument: these statement will encourage the respondents to be subjective.

It is also going to be difficult for one to trust the face validity of these items when in your measurement of variable section the source of these items from the previous studies is not indicated.

Thank you

Appendix III: Interview Guide

Dear respondent,

My name is Banyenzaki Mayie, pursuing a master degree in Project Monitoring and Evaluation at Uganda Technology and Management University (UTAMU). You have been selected as one of the respondents in this research as I am assessing the effect of Contract Management Practices on road construction project performance in Wakiso district , all responses given are for educational purposes thus are considered confidential.

1. Explain the importance of monitoring intensity in relation to the performance of road construction projects in Wakiso?
2. How are the risks managed by the contractors in road construction projects?
3. Do the contract managers of road construction projects have risk management plans in place? If yes, are they executed?
4. Is project evaluation understood by the stakeholders in road construction in Wakiso district? How often is project evaluation undertaken in road construction projects?
5. How are the contractors performing on the road construction projects in Wakiso district?
6. How has contract management affected the road construction projects in Wakiso district?
7. Do you have a road operation and maintenance plan at the district? If yes, is it being implemented?

Thank you for your time

Appendix IV: Questionnaire Form For Generally Successful Projects

Dear respondent,

My name is Banyenzaki Mayie, pursuing a master degree in Project Monitoring and Evaluation at Uganda Technology and Management University (UTAMU). You have been selected as one of the respondents in this research as I am assessing the effect of Contract Management Practices on road construction project performance in Wakiso district with generally successful projects. These include; Upgrading of Western Ring road in Kasanje Sub- county, Road Spot improvement by Swamp Rising and Culvert installation of Selected Swamps in Kiira Town council all responses given are for educational purposes thus are considered confidential.

The selected projects were as indicated in the table below;

BIO DATA

- What is your gender

  Male ☐ Female ☐

- Age group

  Below 20 ☐

  20-30 ☐ 41-50 ☐ above 60 years ☐

  31-40 ☐ 51-60 ☐

- Number of years in working with road construction projects

  Less than a year ☐ 4 - 6 ☐ above 9 years ☐

  1 – 3 years ☐ 7 - 9 ☐

- What is your education level

  Secondary school College/university ☐

  Professional PHD

SECTION B

You are required to respond to each item in subsequent sections using the following scale by ticking the appropriate option.

SA (5) = Strongly agree D(2) = Disagree

A (4) = Agree SD (1) = Strongly disagree,

NS (3) = Not sure

B1- Monitoring Intensity	SA (5)	A (4)	N (3)	D (2)	SD (1)
l) Road authorities follow standards developed for their methods of contracting					
m) The contractors always comply with the service quality level which has been specified in the bidding document					
n) Contractors always do the required amount of work during the month					
o) The contractors have always used the stipulated amount of materials while constructing roads as per bills of quantities(BOQs)					
p) Formal monthly inspections are carried out by the road authorities					

q) Supervisors on the road projects carry out the necessary road inspection						
r) Project managers carry out the necessary road project inspection to meet the required standards.						
s) There is a well maintained record book to follow the complaints of the road users						
t) Always funds are allocated and utilized only for the fulfillment of project objectives						
u) The district has a proper road operation and maintenance plan in place.						
B – 2 **Risk Management**						
o) The contractors can easily identify the risks involved in the road construction projects						
p) Time is always taken to analyze the risks relating to projects in road construction						
q) There is timely response to the risks to achieve road project objectives						
r) Participants on the road construction projects always have different expectations and interests						
s) The risks involved in the road construction projects can easily be shifted to the contractors						
t) The contractors can successfully interpret contract language						

	of the road construction projects					
u)	The construction projects are not always challenged with the design and construction complexity.					
v)	There is always the required manpower on the road construction projects					
w)	There is regular supply of construction materials to the road construction projects					
x)	Equipments are always available to the road construction projects					
	Risk Management	SA (5)	A (4)	NS (3)	D (2)	SD (1)
y)	The funds are always available to execute the duties of the projects					
z)	Road construction projects are always affected by changes in weather conditions					
aa)	The political influence does not affect road construction projects negatively					
bb)	The statutory regulations favors road construction in Wakiso district					
	B- 3 Evaluation					
u)	There is always appropriate documentation by the road contractors					

v) There is always enough documentation by Wakiso district in relation to road construction projects.					
w) The road construction projects give voice to participant's experience					
x) Information is always provided to enhance the quality of the road construction projects					
y) The contractors are in position to identify the problems					
z) The contractors are in position to identify the possible causes of the problems in the road construction projects					
aa) The contractors brainstorm on the factors that may affect the road construction projects					
bb) Road contract managers always carry out assessment in relation to goals and objectives as stipulated in the initial agreement					
cc) Objectives are always adjusted were there are gaps					
dd) Timely decisions about the future of the construction projects are always taken					
C- Project Performance					
g) The contractors always complete the projects within the budget estimates					
h) The cost of constructing roads is averagely low					
i) Most of the road users are relatively satisfied with the standard					

of roads in Wakiso district					
j) The road projects are always completed in the scheduled time frame.					
k) The road projects meet the expected quality specifications					
l) The roads are always safe for the road users					

Thank you

Appendix V: Questionnaire Form For Unsuccessful Projects

Dear respondent,

My name is Banyenzaki Mayie, pursuing a master degree in Project Monitoring and Evaluation at Uganda Technology and Management University (UTAMU). You have been selected as one of the respondents in this research as I am assessing the effect of Contract Management Practices on road construction project performance in Wakiso district with unsuccessful projects, these include; Maintenance of Nsangi – Buloba Kakiri road in Nsangi Kakiri subcounty, Spot improvement of Mabombwe – Bulondo by Mbogo Construction, and Rehabilitation of Kigoogwa - Wabitemde road in Gombe sub- county by Construction Component Solutions Ltd all responses given are for educational purposes thus are considered confidential.

The selected projects were as indicated in the table below;

BIO DATA

- What is your gender

  Male ☐ Female ☐

- Age group

  Below 20 ☐

  20-30 ☐ 41-50 ☐ above 60 years ☐

  31-40 ☐ 51-60 ☐

- Number of years in working with road construction projects

  Less than a year ☐ 4 - 6 ☐ above 9 years ☐

  1 – 3 years ☐ 7 - 9 ☐

- What is your education level

Secondary school		College/university	
Professional		PHD	

SECTION B

You are required to respond to each item in subsequent sections using the following scale by ticking the appropriate option.

SA (5) = Strongly agree

A (4) = Agree

NS (3) = Not sure

D(2) = Disagree

SD (1) = strongly disagree,

B1- Monitoring Intensity	SA (5)	A (4)	N (3)	D (2)	SD (1)
v) Road authorities follow standards developed for their methods of contracting					
w) The contractors always comply with the service quality level which has been specified in the bidding document					
x) Contractors always do the required amount of work during the month					
y) The contractors have always used the stipulated amount of materials while constructing roads as per bills of quantities(BOQs)					
z) Formal monthly inspections are carried out by the road authorities					

aa) Supervisors on the road projects carry out the necessary road inspection						
bb) Project managers carry out the necessary road project inspection to meet the required standards.						
cc) There is a well maintained record book to follow the complaints of the road users						
dd) Always funds are allocated and utilized only for the fulfillment of project objectives						
ee) The district has a proper road operation and maintenance plan in place.						
B – 2 **Risk Management**						
cc) The contractors can easily identify the risks involved in the road construction projects						
dd) Time is always taken to analyze the risks relating to projects in road construction						
ee) There is timely response to the risks to achieve road project objectives						
ff) Participants on the road construction projects always have different expectations and interests						
gg) The risks involved in the road construction projects can easily be shifted to the contractors						
hh) The contractors can successfully interpret contract language						

of the road construction projects					
ii) The construction projects are not always challenged with the design and construction complexity.					
jj) There is always the required manpower on the road construction projects					
kk) There is regular supply of construction materials to the road construction projects					
ll) Equipments are always available to the road construction projects					
Risk Management	SA (5)	A (4)	NS (3)	D (2)	SD (1)
mm) The funds are always available to execute the duties of the projects					
nn) Road construction projects are always affected by changes in weather conditions					
oo) The political influence does not affect road construction projects negatively					
pp) The statutory regulations favors road construction in Wakiso district					
B- 3 Evaluation					
ee) There is always appropriate documentation by the road contractors					

ff) There is always enough documentation by Wakiso district in relation to road construction projects.					
gg) The road construction projects give voice to participant's experience					
hh) Information is always provided to enhance the quality of the road construction projects					
ii) The contractors are in position to identify the problems					
jj) The contractors are in position to identify the possible causes of the problems in the road construction projects					
kk) The contractors brainstorm on the factors that may affect the road construction projects					
ll) Road contract managers always carry out assessment in relation to goals and objectives as stipulated in the initial agreement					
mm) Objectives are always adjusted were there are gaps					
nn) Timely decisions about the future of the construction projects are always taken					
C- Project Performance					
m) The contractors always complete the projects within the budget estimates					
n) The cost of constructing roads is averagely low					
o) Most of the road users are relatively satisfied with the standard					

of roads in Wakiso district					
p) The road projects are always completed in the scheduled time frame.					
q) The road projects meet the expected quality specifications					
r) The roads are always safe for the road users					

Thank you