CONTRACTOR SELECTION, MONITORING AND PERFORMANCE OF ROAD INFRASTRUCTURE PROJECTS IN UGANDA

By

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DECLARATION

I, **Aloysius Byaruhanga,** hereby declare that, to the best of my knowledge and belief, I am the sole author of this proposal. The work presented in this proposal has never been submitted to Mbarara University of Science and Technology before in fulfillment for the award of a Doctor of Philosophy Degree (Business Administration) or its equivalent to any University or any other Institution for any academic award.

Date…….

Sign……..

APPROVAL

This is to certify that this proposal titled "Contractor selection, monitoring and performance of road infrastructure projects in Uganda" is submitted with our approval as the authorized and nominated supervisors.

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ACRONYMS

CSC:	Contractor Selection Criteria
IG:	Inspectorate of Government
OAG:	Office of the Auditor General
PDE:	Procurement and Disposal Unit
PPDA:	Public Procurement and Disposal of Public Assets Authority
PPDAAT:	Public Procurement and Disposal of Public Assets Appeals Tribunal
PPP:	Public Private Partnerships
PSF:	Project Success Factors
QCBS:	Quality Cost Based Selection
RAFU:	Road Agency Formation Unit
SPSS:	Statistical Package for the Social Sciences
TCS:	Technical Compliance Selection
UNRA:	Uganda National Roads Authority

CHAPTER ONE

INTRODUCTION

1.1 Introduction

Road infrastructure is a crucial driving force for economic growth in any country; and sustained access to roads is essential to improve living standards (Benamghar & Iimi, 2011:2). Productivity, welfare, and security of both rural and urban people are greatly influenced by the level of road infrastructure development in any country (Arrows, 2010). Production costs, employment creation, market access, and investment depend on the quality of infrastructure, especially road transport (Wasike, 2001:3). Due to the importance attached to road infrastructure in Uganda, the government instituted reforms in the road sector in 1996 which culminated into the creation of the Road Agency Formation Unit (RAFU) in 1998. In 2006 the government of Uganda through the Act of Parliament established the Uganda National Roads Authority (UNRA), an autonomous road agency body. UNRA became operational on 1st July 2008 with a mandate to develop and maintain the national roads network, advise the government on general roads policies, contribute to the addressing of national transport concerns, and perform certain other functions. UNRA is charged with, among other things, the selection of contractors, the supervision of construction, the scheduling of maintenance, and the prioritization of national road works *(www.unra.go.ug)*. During the first five years of the agency, the road network increased from 10,800 kilometres to 21,000 kilometres (Muleme, 2013)

In spite of the success attained by UNRA since its inception, the goal to optimize the quality, timeliness, cost effectiveness in road delivery so as to guarantee safe and efficient movement of

people and goods through the country is still difficult to achieve (MOWT, 2011). There are rampart delays in awarding and implementation of road works' contracts, which is estimated to cost the tax payer over 2.5 billion per month *(The New Vision, February 24th2014).* Identification of the factors affecting performance of road infrastructure projects in Uganda, therefore, is very crucial if road project performance is to improve.

This study therefore seeks to identify contractor selection and monitoring and investigate their influence on the timeliness, cost and quality of implementation of road infrastructure projects. Contractor selection will be measured in relation to structures, processes and methods and rules in place, while contractor monitoring will be measured in terms of the level of emphasis of the components such as use monitoring plans, communication, payment and records management. The dependent variable is performance which will be measured in terms of the timeliness, cost and quality of implementation of road infrastructure projects. Public procurement function in Uganda is regulated by PPDA and as the regulator it has an oversight role of enforcing compliance with the law so as to ensure fairness, transparency, accountability, efficiency and value for money in the conduct of public procurement. The oversight role of the regulator then becomes the moderating variable which will be measured in terms of its effectiveness.

This chapter, therefore, presents the background to the study, the statement of the problem, purpose of the study, objectives of the study, the research questions and hypothesis, conceptual framework, significance of the study, justification of the study, scope of the study and definition to operational terms and concepts.

1.2 Background to the study

1.2.1 Historical background

Globally, more governments are placing greater emphasis on the development of infrastructure projects (Orr &Kennedy, 2008:100). This is augmented by Howes and Robinson (2005:1), who state that infrastructure is central to the social-economic development of all countries and the well-being and prosperity of society. With increased globalization the level and quality of infrastructure has become critical for all national economies than ever before (Arrows, 2010). Demand for global infrastructure spending has been projected to total somewhere between $40 trillion and $50 trillion over the next two decades (Visse, 2012:8). The European Union estimates that up to $2.7 trillion in new infrastructure spending will be required through 2020 to meet the current goals (Deutsche Bank AG, 2014:4). Visse (2012:6) argued that while many developed countries face the need for substantial infrastructure improvements, the United States infrastructure is crumbling. Outside of the United States, studies in countries spanning the entire range of economic development have also revealed positive improvements in infrastructure development (KPMG, 2013:9).

Although procurement for road infrastructure poses serious challenges that are not found in other areas of public procurement because of its complexity, its performance remains critical (World Bank, 2009:2). This is supported by Visse (2012:8) who asserts that the quality of infrastructure in general is one of the prime factors separating nations that are economic winners from those that lose ground or remain non-starters (Arrows, 2010:43).

Hoon, Kwak & Chih (2009:51), contends that Public Private Partnerships (PPPs) have emerged as one of the major approaches for delivering infrastructure projects in recent years. Arrows, (2010:54)on the other hand argues that the experience of the public sector with PPPs has not always

been positive, many PPP projects are either held up or terminated due to: wide gaps between public and private sector expectations or lack of clear government objectives and commitment. This is supported by Memon, Rahman & Azis (2012:45) who established that countries such as Malaysia, where PPPs are commonly used in the road sector, also still experience cases of poor performance, resulting in failure to achieve effective time and cost performance.

In Africa, although use of roads dominates the transport sector, carrying 80 to 90 percent of passenger and freight traffic in most countries; the condition of these roads remains very poor by international standards (World Bank, 2011:17). In order to respond to this challenge, the World Bank report (2011:18) indicates that the African road sector has passed through a wide ranging and consistent set of policy reforms, with most countries embarking on creation of independent source of funding for road maintenance based on road-user charges. (Banaitiene, 2006:56) however, asserts that the reforms have also not fully improved the performance of roads in Africa. According the World Bank, (2011:29) on average, about 43 percent of the main roads networks are in good condition, a further 31 percent are in fair condition, and the remaining 27 percent are in poor condition

The Uganda Annual Works and Transport Sector Performance Report (2011), notes that availability of good-quality and reliable transport infrastructure and services is a pre-requisite for effective functioning of the service sectors, consuming about 16% of the national budget (Basheka, 2008:45). The World Bank report (2011:22), indicates that Africa has the lowest density of roads compared to other region of the world. In Africa, out of every 1,000 km2 of land area there is only 204 km of roads and only one-quarter paved, while the world average is 944 km/1,000 km2, with over half paved (Bagaka & Kobia, 2010:12). The spatial density of Sub-Saharan Africa's roads is less than 30

percent of that of South Asia, where half of the roads are paved, and only 6 percent of that of North America, where two-thirds are paved (Barasa, 2014:67).

The East Africa leaders have targeted road infrastructure as priority for stimulating economic growth in the region. According to Ng'wanalika (Reuters 2015), in the East African region, Kenya is pushing for the development of a 1,700 km northern corridor linking Uganda, Rwanda, Burundi and Congo to its port at Mombasa. On the other hand, Tanzania and Kenya also plan to invest in new port projects, at Bagamoyo and Lamu respectively. The East African Community (EAC), countries, in their 2015-2025 strategy, indicated the need to invest between $68 billion to $100 billion over the next decade to build roads, ports, railways, transmission lines and oil and gas infrastructure.

In recent years, Uganda has made significant efforts to improve infrastructure provision particularly in the roads sector (World Bank 2007:162). Institutional reforms have been initiated to enhance infrastructure performance through creation of more institutions such as the Uganda National Roads Authority and Uganda Road Funds (for funding road maintenance). In spite of the efforts made, the reasons for poor quality roads, delayed service delivery and cost overruns on road infrastructure projects in Uganda continue to elude the project implementers (Barasa, 2014:54). According to the Uganda National Roads Authority report (2014), UNRA could only absorb approximately 60% of the allocated funds for road construction and maintenance. The UNRA report highlighted 7 projects which delayed to takeoff for over one year due to complaints raised during the bidding process causing intervention of by oversight agencies such as the Public Procurement and Disposal of Public Assets Authority (PPDA) or the Inspectorate of Government (IGG), or at times Courts of Law. The researcher theorises that this could be due to the conduct of contractor selection and contractor monitoring.

1.2.2 Theoretical Background

Contractor selection and contractor monitoring is linked to the institutional theory and the principal-agent theory. The Institutional theory adopts a sociological perspective to explain organizational structures and behavior (Dunn, 2010:4). The theory draws attention to how organizations' decision making is influenced by the institutional, social and cultural factors as identified by Scott, (2001:32), and in particular how rationalized activities are adopted by organizations. The theory emphasizes the use of rules, laws and sanctions as enforcement mechanisms, with expedience as basis for compliance (Scott 2004:23). When applied, the theory will explain contractor selection as an effect of institutional decision making and the influence of the regulatory and oversight agencies in influencing performance (Scott, ibid). The institutional theory will help in showing the relevance of structures, processes and systems. It will help establish whether contractor selection has a significant effect on performance of road infrastructure projects.

According to Clarke (2004:12), the principal–agent theory defines the relationship between the principal, such as shareholders and agents or company executives and managers. In this theory, shareholders who are the owners of the company, hire the agents to perform work. Principals delegate the running of business to the managers, who are the shareholders' agents. Theory will explain the relationship between principal (Entity) and the contractor in contractor monitoring and how the actions affect road infrastructure performance in terms of cost, time and quality.

1.2.3 Conceptual Background

Arrows (2010:45), defines contractor selection as the evaluation and selection of contractors leading to the award of construction contracts which is a vital part of the road construction process. Arrows further states that repeatedly awarding contracts to a single contractor must be precluded; an

impartial method must be used for selecting contractors who are to receive bid solicitations. Chetty and Eriksson (2002:34) posit that the selection of a contractor for a project is a critical decision, because the developer often relies on the contractor to manage the process of transforming a feasible concept into a functioning project. Although some owners have the expertise, resources, and desire to lead the development effort on their own, however, choosing the right contractor can greatly improve the likelihood of project success.

According to Bubshalt & Al-Gobali (2014:57), contractor monitoring involves contractor control on projects. In addition this, arrangements aim to ensure that the monitoring process is planned and that the results, good or bad, are shared with the contractors to ensure that improvements are made and/or corrective action taken if required (Bubshalt & Al-Gobali, 2014:59). According to Clarke (2014:45), contractor monitoring involves overseeing that the contract is duly monitored. The inspection should ideally be undertaken together with the Contractor's representative to ensure that the issues raised are dealt with at the time of the inspection.

For purposes of this study, the independent variables are contractor selection; which will be measured in relation to procedures, methods, rules and criteria and contractor monitoring will be measures in relation to key components of monitoring such as planning, feedback mechanism, dispute resolution, payment management, commitment, reliability and cost effectiveness.

The dependent variable is performance of road infrastructure projects. According to Clarke (2014:12), performance is the accomplishment of a given task measured against preset known standards of accuracy, completeness, cost, and speed. In a contract, performance is deemed to be the fulfillment of an obligation, in a manner that releases the performer from all liabilities under the contract. For purposes of this study, performance of road infrastructure projects will be measured in

terms of the timeliness, cost and quality of implementation of road infrastructure projects.There is a moderating variable which is the oversight role of PPDA and this will be measured in terms its relevance and effectiveness.

1.2.4 Contextual Background

Improvement of road infrastructure is taking a center stage in many African Countries. The East Africa leaders have targeted road infrastructure to stimulate economic growth in the region. (Booth and Mutebi, 2009:2) contend that although Uganda has made significant insight in the roads sector, the problem has been a combination of under-spending and weak supervision by the agencies responsible for the road development and maintenance.

Following the launch in July 2008 of the reform of the institutional framework governing road building and maintenance, the roads sector was faced with a significant set of new opportunities. If these opportunities are exploited fully, they will open up the possibility of restoring Uganda's road network (Booth and Mutebi, 2009:2). The roads sector reform includes: (1) Creation of a semi-autonomous Uganda National Roads Authority (UNRA), with responsibility for planning and procuring the services of private firms for the building and maintenance of national roads; (2) Inauguration of a Road Fund, providing for the direct transfer of fuel levies and other road user taxes directly to UNRA and district councils for road maintenance purposes; and (3) A downsizing and functional transformation of the Ministry of Works and Transport. The institutional reforms coincided with a substantial increase in national budget allocations to road intended to improve efficiency and effectiveness in the Road sector

In spite of the reforms and increased funding for the road sector from UGX 374.12 billion in 2005/06 to UGX 1,214.82 billion in 2009/10, there has been inadequate improvement of service

indicators for the sector (ACODE, 2012: V).There is also continued outcry from the general public and technocrats responsible for implementation of the procurement laws that the procurement process is cumbersome and lengthy (Ssebanakita, 2012:12). Despite the existence of a regulatory framework in the road sector, millions of dollars have continued to be lost in uncompleted contracts. Reports on performance of the road sector continue to indicate that government is still losing billions of shillings in shoddy works and services (IGG Report, 2012:34). Due to numerous complaints on the procurement process, a number of road projects' commencement was delayed. Predominately among these road projects are (1) Mukono-Kyetume-Katosi-Nyenga, (2) Mubende-Kakumiro-Kagadi, (3) Kigumba-Bulima-Kabwoya, (4) Kamudini-Gulu and Kafu-Kiryandongo-Kamudini. The above gives a clear indication that attaining fully the intended goal of timely transformation of road infrastructure in Uganda remains a big challenge, hence, the need to investigate the methods and procedures for contractor selection and contractor monitoring, and the effectiveness of the oversight role played by the regulator (PPDA)

1.3 Statement of the Problem

Empirical studies both in developed and under developed countries identify that construction projects have been performed poorly (Takim & Akintoye, 2002). Faridi and El-Sayegh (2006) assert that shortage of skills of manpower, poor supervision and poor site management; unsuitable leadership; shortage and outdated equipment are among the factors that contribute to construction delays and subsequent poor performance of construction projects. Similarly, Adero and Aligula (2012) in their study on challenges facing transport infrastructure in the East African Community (EAC) note that the cost of doing business in the region is high due to the poor state of regional transport infrastructure. In their study they used comparative indicators to assess the performance of

transport infrastructure in the EAC, middle-level economies and other major players in Africa. They cited the report by World Bank, (2010) where it was observed that the percentage of roads paved in EAC countries is still at par with low-income countries (about 10%), with only Uganda and Rwanda scoring higher (above 15%) as per the World Development Indicators. This study, however, did not explicitly bring out the performance of road infrastructure projects. The researchers noted that road infrastructure project performance should be viewed in relation to contractor selection and contractor monitoring which was the central focus of the present study.

Contextually, the enactment on the PPDA Act of 2003 resulted into decentralization of the procurement and disposal function. Among the activities that were left to the Public Procurement Entities is management of project implementation. Despite the PPDA Act of 2003 and the attendant Regulations spelling out clearly the required procedures and regulatory framework for managing project implementation in Uganda, signs of improvement have been minimal. Procurement audits sanctioned by the Public Procurement and Disposal of Public Assets Authority in public entities especially those handling public infrastructure such as roads have continuously shown that project monitoring is not given adequate attention. In 2006 the road sector in Uganda, underwent reforms aimed at ensuring timely delivery in the road sector. Key in the reforms was the creation of Uganda National Roads Authority (UNRA) a semi-autonomous institution with a mandate to procure contractors for national roads construction and maintenance. However, there has been no commensurate improvement in the 'success' rate of the road projects (Ssebanakita, 2012:12).

Poor quality roads have continues to be the norm in Uganda, with the practitioners accusing one another for poor performance. The researcher notes that despite the studies and efforts made to contract management and project performance (Rendon, 2010, Kugonza, 2012, Oluka and Basheka,

2014), the specific reasons for poor quality road works, delayed completion of road projects and cost overruns on road infrastructure projects in Uganda continue to elude the project implementers. If the contractor selection procedures and the key components that make up a successful monitoring and hence project success continue to be taken lightly, government will continue losing billions of shillings in failed or poorly executed projects. This study sought to examine the influence of contractor selection and monitoring on performance of road infrastructure projects in Uganda taking into consideration the contractor selection procedures and criteria and the key components in contractor monitoring. It is hoped that the findings will enable scholars, practitioners and policy makers appreciate the contractor selection criteria and procedures and key contractor monitoring components that influence performance of road infrastructure projects.

1.4 Purpose of the Study

To examine the relationship between contractor selection and contractor monitoring on performance of national road infrastructure projects in Uganda.

1.5 Objectives of the Study

i. To examine the relationship between contractor selection and performance of national road infrastructure projects in Uganda.
ii. To assess the relationship between contractor monitoring and performance of national road infrastructure projects in Uganda.
iii. To assess the influence of oversight role of PPDA on contractor selection, monitoring and performance of the national road infrastructure projects in Uganda

1.6 Research Questions

The research seeks to answer the following questions:-

i. What is the relationship between contractor selection and performance of national road infrastructure projects in Uganda?

ii. What is the relationship between contractor monitoring and performance of national road infrastructure projects in Uganda?

iii. How does the oversight role of PPDA influence contractor selection, monitoring and performance of the national road infrastructure projects in Uganda?

1.7 Hypothesis of the Study

H1: There is a positive significant relationship between contractor selection and performance of national road infrastructure projects in Uganda.

H2: There is a positive significant relationship between contractor monitoring and performance national road infrastructure projects in Uganda.

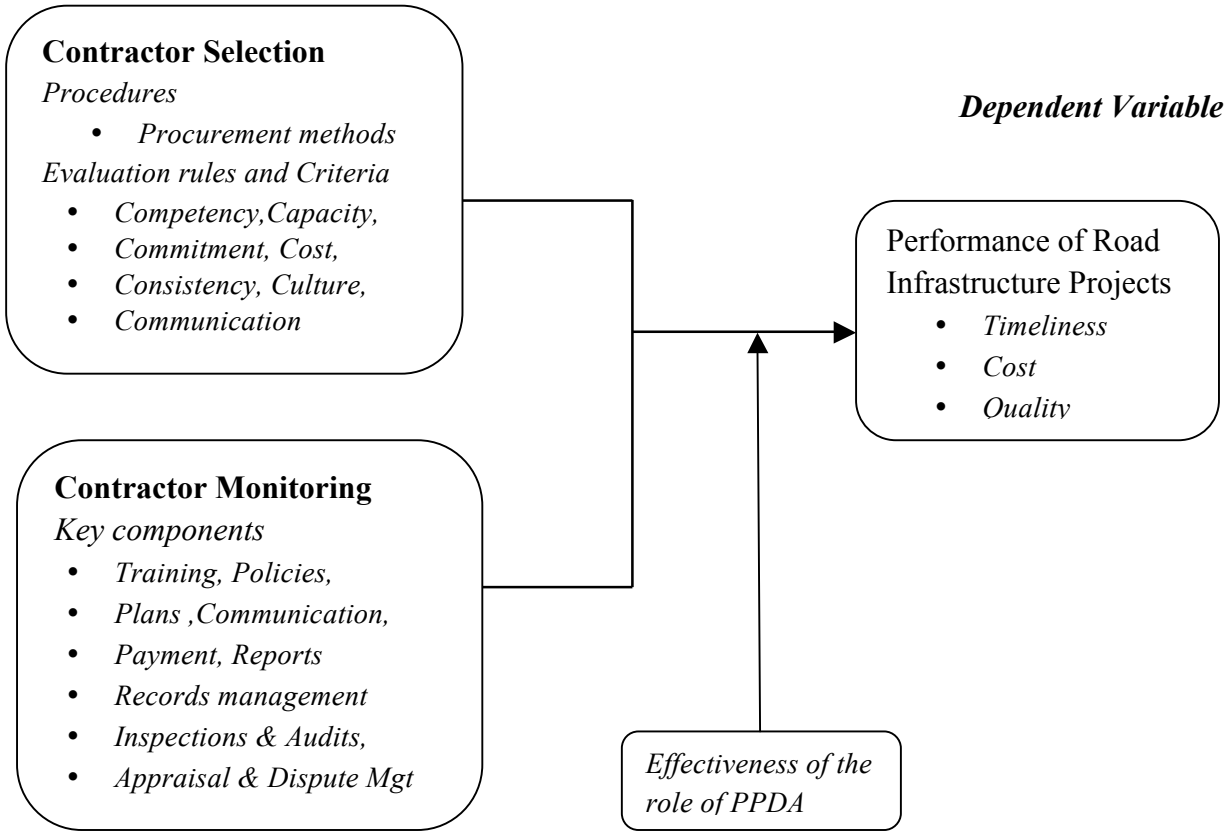
H3: The oversight role of PPDA significantly influences contractor selection, monitoring and performance of national road infrastructure projects in Uganda

1.8 Conceptual Framework

The Conceptual framework below shows the relationship model of the variables in their course of action to the desired goal.

Fig 1.1: Conceptual framework showing the relationship between the study variables

Independent Variables



***Source**: Adapted from Gitau (2013): International Journal of Business and Commerce Vol. 3, No.1, and modified by the researcher for purposes of this study*

The conceptual framework is developed from the institutional theory which adopts a sociological perspective to explain organizational structures and behavior (Dunn, 2010:34). The theory draws attention to the social and cultural factors that influence organizational decision-making and in particular how rationalized activities are adopted by organizations (Scott, 2001:23). The variables were developed from the above theory and from Seven Cs of Supplier Evaluation (Ray Carter 1995) Contractor selection and contractor monitoring (independent variables) are to be studied and examined through moderating variables. These include examining contractor selection, contractor

monitoring and effectiveness of the role of the Regulatory Body (PPDA), in order to attain performance of road infrastructure project in Uganda (the dependent variable). This is the study's desired goal, of attaining timely, cost effective and quality road infrastructure projects.

1.9 Significance of the Study

The Government of Uganda has prioritized infrastructure projects and has allocated enormous financial resources to infrastructure development especially road works. This study is critical and timely considering the public outcry on delays in implementation of road infrastructure projects, shoddy works by contractors and failure of absorption of funds allocated to the road sector. The study will hopefully guide government policy makers, agencies and all stakeholders managing infrastructure development projects in general to design robust mechanism of contractor selection and contractor monitoring that promote value for money and timely implementation of road infrastructure projects. Furthermore, the study will fill the procurement knowledge gaps left out by other researchers and writers on performance of infrastructure projects, and will hopefully improve performance of road infrastructure projects. The findings can, therefore, be referred to by government agencies, procurement regulators and procurement professionals on important aspects to be considered in ensuring proper performance of government projects. And lastly, the research may act as a foundation to indicate areas of further research to subsequent scholars in the field of contractor selection and contractor monitoring.

1.10 Justification of the Study

Adequate infrastructure is key for economic grow and competitiveness in Uganda. However, the current inadequate infrastructure is impeding faster growth. Evidence from surveys suggests that in 2006 infrastructure constraints were responsible for as much as 58 percent of the productivity

handicap faced by Ugandan firms (World Bank AICD Report, 2012:4). In order to enhance delivery the much need infrastructure, the public procurement rules were amended in 2003, decentralising procurement to entities such as UNRA. In line with efficiency in service delivery, government called upon by procurement official in entities to adopt the private sector business model when handling public infrastructure procurement. In spite of the reforms and call by government, the procurement system continue to be clogged with numerous complaints casing delays in implementation and where infrastructure contracts are signed, poor quality of works and cost overrun are evident. Little has been done to establish the causes of numerous complaints and continuous delays, shoddy works and escalation of costs in the implementation of road infrastructure projects so as to design appropriate mitigating strategies. This study intends to investigate the influence of contractor selection and monitoring on performance of road projects in Uganda. The study will also inform government policy with regard to designing changes aimed at improving the contractor selection and contract monitoring under the road projects and related public infrastructure projects. It will also form a basis on which academic researchers can do further studies on contract management of public infrastructure projects.

1.11 Scope of the Study

1.11.1 Geographical Scope: The study will be carried out in Kampala. The targeted respondents will be procurement professionals who will be obtained from a list of procurement professional registered by the Institute of Procurement Professionals in Uganda (IPPU), the Ministry of Finance Policy Unit and these will be compared with the records in the PPDA. The Contractors will be those registered by UNABCEC and that of Consulting Engineers will be accessed from UACE. The Members of Parliament will be those on the Infrastructure Committee and a list will be accessed

from the Parliamentary Commission. A list of engineers supervising road projects will be obtained from UNRA, and those in the ministries of works and local government will be accessed from the records of Ministries of Works and Local Government.

1.11.2 Content Scope: The study will examine the effect of contractor selection and contractor monitoring on performance of roads infrastructure projects in Uganda. Contractor selection and contractor monitoring are the independent variables and performance of roads infrastructure projects in Uganda is the dependent variable. The moderating variable is the oversight role of the regulator (PPDA).

1.11.3 Time Scope: The study will be limited to a period running from 2008 to 2016, eight (8) years since UNRA became functional. This is the period when road infrastructure performance has raised questions among members of the general public. This is augmented by the PPDA Compliance Report (2014) where it is observed that 90% of the procurements at UNRA face delays between initiation of the procurement process and contract signing. The UNRA Annual Report (2014) cites cases of delays during actual contract implementation. The constant delays coupled with cost overruns have created doubt in the methods and procedures applied to award tenders and monitoring contractors. This has created a knowledge gap hence prompting the researcher to examine the relationship between contractor selection and contractor monitoring on performance of national road infrastructure projects in Uganda.

1.12 Definitions to Key Terms and Concepts

Contractor selection refers to the choosing of the most appropriate contractor to deliver the project as specified so that the achievement of best value for money is assured (Arrows, 2010:2)..

Contractor monitoring is the regular process of evaluating contract performance based on measurable deliverables and verifying contractor compliance with the terms and conditions in the contract (Russells &Ryan, 2010:5).

Project performance is the accomplishment of set tasks as measured against preset standards of accuracy, cost, completeness and quality (Alchian & Demsetz 2012:14).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature reviewed on the basis of the study objectives The literature review focuses on the effects of contractor selection and contractor monitoring and oversight role on performance of road infrastructure projects The literature is organized in five (5) themes; (1) theoretical review, (2) review of related literature on contractor selection and monitoring, (3) performance of road infrastructure projects, (4) Oversight role and (5) synthesis of literature and research gap analysis. Literature sources will include books and journals.

2.2 Theoretical Review

Theories that explain contractor selection and contractor monitoring on performance of road infrastructure projects will be examined. In particular, the institutional and principal-agent theories will be examined.

The institutional theory is selected because it adopts a sociological perspective to explain organizational structures and behavior (Dunn, 2010:34). The theory draws attention to the social and cultural factors that influence organizational decision-making and in particular how rationalized activities are adopted by organizations (Scott, 2001:23). Scott (2004:56) further states that one of the pillars of institutional theory that relates to the proposed study is the regulatory pillar. This pillar emphasizes the use of rules, laws and sanctions as enforcement mechanism, with expedience as basis for compliance.

Institutional theorists such as (DiMaggio and Powell, 1983:23; Meyer and Rowan, 1977:77), contend that the institutional theory can strongly influence the development of formal structures in an organization. This was augmented by (Obanda, 2010:45) who postulated that institutional theory is the traditional approach that is used to examine elements of public procurement, such as the elements proposed in the conceptual framework. It will be of interest to establish how this relates to the proposed variables of this study.

Mitnick, (2006) asserts that Principal-Agency theory was first proposed explicitly by Stephen Ross and Barry and was later developed by Alchian and Demsetz (1972). The theory defines the relationship between the principals and agents, such as shareholders and company managers. The theory envisages that shareholders, who are the owners of the company, hire the agents (managers) to perform their work. Principals delegate the running of the business to the managers, who are the shareholders' agents (Clarke, 2004). Xingxing and Kaynak, (2012) identify the important assumptions underlying agency theory as: potential goal conflicts exist between principals and agents; each party acts in its own self-interest; information asymmetry frequently exists between principals and agents; agents are more risk averse than the principals; and efficiency is the effectiveness criterion. As argued by Health & Norman, (2004), the theory deals with situations in which the principal is in a position to induce the agent to perform some task in the principal's interest, but not necessarily the agent's. In contractor selection and monitoring, the Entity plays the principal role and the staff or contractor, the agent role. The PPDA Act, 2003, places the overall responsibility to award and manage contracts with the Entity's staff. The law further envisages that the entities employ professionally qualified and trained procurement staff to select and monitor

contractors. This theory explains how the actions of the agent affect the principal's intended goals such as performance of road infrastructure projects.

2.3 Key Concepts

Contractor selection refers to the choosing of the most appropriate contractor to deliver the project as specified so that the achievement of best value for money is assured (Arrows, 2010:2). For purposes of this study and with reference to the concepts as highlighted in the conceptual framework, contractor selection will be looked at in relation to structures, processes, methods and rules in place.

Contractor monitoring is the regular process of evaluating contract performance based on measurable deliverables and verifying contractor compliance with the terms and conditions in the contract (Russells &Ryan, 2010:5). Contractor monitoring in the proposed study will be measured in relation to compliance with evaluation mechanisms, communication (feedback mechanism) and record management and reporting.

Project performance is the accomplishment of set tasks as measured against preset standards of accuracy, cost, completeness and quality (Alchian & Demsetz 2012:14). For purposes of this study, performance of road infrastructure projects will be measured in terms of time, cost and quality. The moderating variable is oversight role of the regulator (PPDA) and will be measured in terms of effectiveness and relevance.

2.3.1 Contractor Selection

Contractor Selection is the process of choosing the most appropriate contractor to deliver a specified project so as to ensure achievement of best value for money. It is one of the main decisions made by the clients and in order to ensure that the project can be completed successfully, the client must

select the most appropriate contractor. Contractor Selection process involves the use of different procurement and evaluation methods (Lynch, 2014).

Selecting a contractor is one of the major decisions which influences the progress and success of any construction project (Banaitienė and Banaitis, 2006: 277). Cheng and Li, (2004:1022) posit that existing literature on contractor selection mainly deals with how to identify and assess the criteria to make the most appropriate decisions. A study conducted within the United Kingdom (U.K) construction industry indicated that some of the contractor selection decisions were based on cost (Holt et al. 1995; Holt 1998). These practices, however, are characterized by major weaknesses, because achieving lower costs does not necessarily give the best value. On the other hand, studies in the United States of America indicate that contractor selection is mainly by alternative procurement methods (APM) in which ownership (of decision making) and responsibility for design and operation is passed to the contractor with the state adopting a regulatory role (Regan, 2012). Regan posits that evidence suggests that APM is achieving better time and cost performance than adversarial methods and contributing to improved service delivery and lower lifecycle costs. It is not, however, proven whether APM is applicable in all procurement setups where contractor selection is critical.

Other studies have been undertaken by experts regarding the issue of contractor selection for implementing construction projects. Holt *et al*. (1994) identified prequalification criteria to be included in the quantitative model for choosing main contractors. Bubshait and Al-Gobali (1996) determined the criteria that are considered in prequalification practices for private and semi-public projects in Saudi Arabia. Holt *et al.* (1995) revealed that the choice of contractor should be made on a value for money basis rather than automatically accepting the lowest bid because the main

objective is to identify best tender not lowest bidder. Hatush and Skitmore (1997) focused on identifying universal criteria for prequalification and bid evaluation. Their results show that the most common criteria considered by clients are those pertaining to financial soundness, technical ability, management capability and health and safety performance of contractors. Holt (1997) explained the cluster analysis technique in a contractor valuation and selection setting. Though technical ability and financial soundness are of critical requirements for the contractor to perform, the challenge may be the process and procedures of selecting the contractor.

Hatush and Skitmore (1998) described a systematic multi criteria decision analysis as a contractor selection method based on utility. Skitmore (1995) investigated the perceived relationship between twenty contractor selection criteria and project success factors in terms of time, cost and quality. He sampled eight experienced construction personnel, including two validators. The results of the research indicate "past failures, financial status, financial stability, credit ratings, experience, ability, management personnel, management knowledge" as the most dominant in Contractor Selection Criteria. The above study focused on what causes contractors to fail in projects implementation but did not address what would lead to a weak contractor being selected. Sodangi and Amra (2011) investigated a selected sample of 150 construction professionals operating in Malaysia to identify the actual criteria used by clients for the selection of contractors from the current practice in Malaysia. The results showed that track performance, financial capacity and technical capacity were the most important criteria considered crucial for the selection of contractors in Malaysia. The study also focuses on the criteria and not the entire process of contractor selection and possible challenges.

Schmitz and Platts (2004:56), note that the most common issues that procurement staff have to face are the constant rush and lack of operational planning in selecting contractors. Other issues that

make the work more difficult are a shortage of demand forecasts and a poor quality services as well as a poor information flow within the organisation (Schmitz and Platts, 2004:58). Schmitz and Platts, 2004 further assert that the present content of procurement and the selection criteria do not encourage developing knowhow, procedures or the product itself. The invitations for tenders are very precise and give no opportunity to offer innovative solutions. Flexibility in contractor selection can have an influential role in the procurement process, for example in the definition of the contents of the procured item and its goals (Bagaka & Kobia, 2010:45). On the contrary, the aims and goal of contractor selection and how this is connected to the whole service delivery is often left out from the definition. The conclusion and recommendations of the above authors mainly focused on the criteria for contractor selection, the researcher intends to widen the scope to include the effect of the staff competence and regulatory function in the conclusions and recommendations.

In Africa, empirical studies indicate that contractor selection is one of the main decisions made by the clients. In order to ensure that the project is completed successfully, the client must select the most appropriate contractor (Ocharo, 2013:35). According to Ocharo (2013:27), contractor selection process involves the use of different procurement and evaluation methods. Manthosi and Thawala (2012:86) and Ganderton (2012:14) identify the commonly applied procedures for contractor selection in construction projects in Africa as open competitive, selective, negotiation, and design and build tendering approaches. The open tendering procedure allows practically any contractor to submit a tender for the work. This procedure involves either the client or consultant (on behalf of the client) placing a public advertisement giving a brief description of the work. Normally the client will require a cash deposit when contract documents are requested (Manthosi and Thawala, 2012).

The study by Manthosi and Thawala (2012:86) mainly relied on secondary data, however, the proposed study will rely on both primary and secondary data.

The procurement law clearly defines the procedures for contractor selection leading to contract awards. Different kinds of methods can be applied when the requirements are fulfilled. The available options include a negotiated procedure, direct award of contracts, competitive dialogue, framework agreement and design contests (Cheng and Li, 2004:1022). Prior information notice, contract notice and contract award notice and possible other notices depending on the method of contract award need to be published by the contracting authorities. An important factor to be considered is fixing the appropriate time limits for a tender. The time limits can be shortened or extended when the arguments respond to the requirements (Cheng and Li, 2004:1022).

Contract selection has become a priority for public entities. In a developing country like Uganda, having an effective contractor selection system is still a major challenge to many public entities (Oluka, 2013:16). Contractor selection is one area that needs careful attention from all stakeholders in public entities because it has a huge budget and if this budget can be managed in an accountable manner, then there will be improved service delivery and this is one way of accounting to the tax payers(Muhwezi, ibid). Muhwezi, 2013:45 contends that the Public Procurement and Disposal Authority (PPDA) must play a central role in providing training, technical guidance and ensuring compliance to all set rules. Sabiti, Basheka and Muhumuza (2011:23) in their study on developing public procurement performance measurement systems in developing countries the Uganda experience, note that proper contractor selection influences procurement performance. The nature and extent of contractor selection will vary between organizations (Muhwezi, 2012:34). It can be influenced by the nature and the type of relationship the agency has with the contractor both in the

short and the long term. Contract selection revolves around selecting the right contractor (Muhwezi, ibid).The PPDA Act of 2003 recommends different procurement methods namely open competitive bidding method, restricted bidding method and direct award. The default method for procurement for road works is open competitive bidding method. It is not clear as to how this and other methods would affect the performance of road projects on time, cost and quality.

Open tendering is a competitive public procurement method used for acquiring goods, services and infrastructure works Lynch (2014).This method is most favoured as observed by (Murdoch and Hughes 1992; Dawood 1994; Holt et al 1995). In the studies conducted by Merna and Smith (1990), Trickey (1982) and Smith (1986) competitive tendering is seen as the best way to select a contractor with the lowest price. It was argued in the above studies that using lowest price as a yardstick for selecting contractors ensures that the client gets value for money through free and fair competition. However, this argument was challenged by Pearson (1985), Dawood (1994), Pasquire and Collins (1997) who argued that the lowest contemporaneous price is not a guarantee for yielding the overall lowest project cost after execution. It should be noted that it is common for contractors to adjust their bid prices in an attempt to underbid fellow competitors and to win contracts which they may not be qualified to undertake.

This practice was supported by (Kwakye 1994, Herbsman & Ellis 1992) who argued that contractors unrealistically lower bids in some open tenders and they cautioned that lowest price syndrome does not guarantee best product. Similarly, Holt et al (1995) observes that research has evidence to indicate that contracts awarded under open competition are less successful and exhibit greater divergence between final contract value and tender value than contracts awarded by other means. It is likely that competitive tendering serves to increase contracting uncertainty arising from estimating

errors or the deliberate submission of an unrealistically low bid. The practice of reducing a bid to the value that the contractor believes is sufficiently low to win the job also exposes clients to the risk of opportunistic behavior such as post-contractual claims and price overruns (Crowley and Hancher 1995a). This position is supported by Lysons and Farrington, (2006) who argues that although it is presumed that this open competitive method fosters effective competition and adds value for money; there are arguments to the contrary, given that the open tendering method is strictly procedures-based. This, therefore, raises the argument that open competition may not be suitable for complex procurements where the focus is more on the output and outcome of the contracting process rather than on strict adherence to standard and procedures.

On the other hand, Restricted Tendering Method limits the request for tenders to a select number of contractors Lynch (2014).According to the PPDA Regulation 2014, the restricted procurement method is a two-stage process. In the first stage, the employer advertises his project under open competition inviting contractors to express interest to be placed on a selected list of contractors to be invited to bid for the project. In stage two, the shortlisted contractors who meet the selection criteria are then invited to submit a more detailed tender submission. Oluka (2013:17), in her article on procurement performance notes that contractors applying are given a list of information they should supply about themselves in order to 'pre-qualify. According to Lynch (2014), any decision to use the restricted tendering procurement method must conform to the policies and procedures governing the procurement system. And the basic characteristic of this method is that competition is confined to a certain number of firms either because only a few firms are qualified to fulfill the specific type of requirement, or certain conditions warrant the use of a limited number of firms in order to reduce the time and cost of the selection process. Although considered a competitive procurement method,

competition is limited to only firms shortlisted and the method involves two processes and it typically takes longer than the open competitive process which may result in contractor submitting speculative bids. Oluka (2013:23) posits that some methods used in Uganda such as restricted tendering method limit contractor selection to a number of contractors.

Direct procurement is acquisition of goods, services or works from only one source. This is a non-competitive procurement method used when there is a very tight deadline, or emergency works (Ntende, 2011:12). PPDA Act, 2013 requires under direct procurement, the PDE to invite directly one contractor to submit a bid for a project based on the set rules (Muhwezi, 2013:12). It is assumed a directly procured contractor has a good chance of performance because, more often than not, it is based on previous satisfactory working together by the employer and the contractor. Although assumed to take a shorter time it may be costly since the contractor has no competitors.

Important to note, evaluation of bids is also a critical stage in the process of selecting a contractor from a number of bidding contractor that have submitted bids for a specified project (Nguyen, 2015:31).Huang (2011:41) argues bid evaluation is one of the major challenges that face owners and consultants in the public and private sectors. There is need to objectively gauge the ability of a contractor to properly manage a construction project following the frameworks created to evaluate contractors' bids (Nguyen, 2015:31). According to the PPDA Act of 2003, the applicable bid evaluation methods for works are technical compliance selection and quality-cost based selection method.

Evaluation of bids is done through a verification process that begins with a categorizing of whether the candidates are suitable or not. After that the contracting authorities can exclude tenderers from the tender competition if they meet the exclusion criteria (Muhwezi, 2013:45). Measuring the

suitability of the candidates is based on the financial situation of the bidder as well as their technical performance and professional qualifications. The contracting authorities must select the offer that presents the economically most advantageous solution or the selection can be made based on the lowest price (Oluka, ibid). Ocharo (2013:35) notes that in many cases, the contracting authority mentions that alternative solutions and offers are not accepted which limits the creativity of the suppliers. Where flexibility is allowed, however, productivity can be increased through new ideas and solutions. This can be achieved through emphasising development responsibility and the effects of the procured item. The selection criteria is essential for ensuring that the needed services will meet the requirements and needs of the buying organization (Ocharo, 2013:43). Therefore, emphasis on the determination of the weight values should be established. When the service and its goals require more immaterial wealth, placing more emphasis on the quality weight values is worthwhile. On the contrary when, the acquired service is a routine job, the price can have a bigger role in the definition of the weight values (Oluka, 2012:66). However, in many cases the opportunity to use innovation and cooperation ability as one of the subcategories of quality weight values is not utilised. This offers another opportunity to use innovation in the procurement process of the organisation. Conceptually, this study will reveal the critical components of contract selection ranging from the procedures and criteria involved in contractor selection.

2.3.2 Contractor Monitoring

Contractor monitoring is a management aspect that involves active monitoring and control of the relationship between the supplier and the contracting authority. Contractor monitoring involves those activities performed by the employer/client after a contract has been awarded to determine the performance of the contractor in meeting the terms and conditions of the contract. It encompasses all

dealings between the employer and the contractor from the time the contract is awarded until the work has been completed.

Hinton (2003:61) in his study on the "Best practices in government: Components of an effective contract monitoring system", notes that until recently, different portfolio managers have been responsible for determining the cost savings and other effects of procurement on their own. According to Hinton (2003) contractor monitoring is a process of ensuring that a vendor adequately performs a contracted service. It focuses on collecting and analysing information in order to provide assurance on the performance of the contractor as regards agreed time frames in provision of the contract deliverables. Hinton (2003:56), further, in his study carried out in England, identifies capacity of employees; written policies and procedures; contingency plans; clear communication of expectations to vendors, performance measures, and post-award meetings; administration plan; organized contract files as effective components for contract monitoring. The other components Hinton mentions are timely payment; regular reports; access to records and right to audit; and, dispute resolution procedures (Hinton, 2003:46). Hinton notes that acceptable performance monitoring approaches must be applied and these approaches may include direct monitoring by the procuring agency, independent third party monitoring or a combination of the two approaches. He further says that direct contract monitoring approach ensures that the agency is in control of the monitoring process. Although this may allow timely resolution of any problems that are detected, it may increase the costs to the agency since this may need staff recruited on permanent basis hence the rise in wage bill.

While these are crucial components, not all contracts are monitored using the same components to measure success (Arrows, 2010:34). Arrows, (2010) argues that Key Performance Indicators (KPIs)

should be clearly set within the contract and then measured, reported and monitored on a regular basis. Arrows (ibid), further observes that while significant contract monitoring occurs when the contractor is actually performing the service (contract period), preparation during the pre-contract period is essential for effective contract monitoring. In the proposed study, contract monitoring involves those activities performed by the employer after a contract has been awarded to determine how well the government and the contractor performed to meet the requirements of the contract. It encompasses all dealings between the employer and the contractor from the time the contract is awarded until the work has been completed.

Rendon (2010:19) in his study on the 'critical success factors in government contract management' outlines qualified workforce, clear processes, relationships, resources, leadership and policies as critical success factors for contract management. All these have a direct impact on an organisation's contract management processes as well as resulting outcomes (Rendon, ibid).

Arrows (2010:12) in his book on contract monitoring noted that contract monitoring is essential for achieving the most profitable benefits from supplier relationships and to optimize total costs of the procurement function. On the other hand, Donovan (2013:65) in a theoretical underpinning of the challenges of contractor monitoring in Canada, asserts that the important issue in monitoring a supplier's performance is deciding who is best placed to actually monitor that performance. The supplier's performance must be assessed objectively against criteria that are pre-determined, clearly understood and agreed upon by both parties in the conditions of the contract (Donovan, 2013:44). In bridging the gap, this research is not contrary to the idea of contractor monitoring which includes monitoring and controlling operations. The study will apply some of the above components to test their effect on contract monitoring on performance of road infrastructure projects in Uganda.

Schmitz and Platts (2004:77) in their study conducted in Ghana on the procurement reforms in Ghana assert that the main aim of contract monitoring is to ensure that goods or services are delivered on time, at the agreed cost. This implies developing effective working relationships with your suppliers, ensuring effective service delivery and providing consistent quality for stakeholders and end users (Schmitz and Platts, 2004).The primary goal for contractor monitoring within any company is to ensure that commitments and obligations to customers and suppliers are clearly visible to the relevant people in the organization and that they are executed upon (Schmitz and Platts, 2004:76). Contracts are used to control virtually every part of the trading relationship between buyers, sellers, and intermediaries, and have an impact on various functions within the enterprise (Arrows, 2010:13). For example, the sell-side involves sales, marketing, finance, legal, sales operations and customer service. The earlier study pre-tested the results based on qualitative approaches; in bridging the gap, this study will pretest the results using both quantitative and qualitative methodological approaches.

Agere (2009:69) in his study on the effectiveness of contract management in Austria noted that contract monitoring requires the systematic management of contract creation, execution, compliance and analysis to maximize performance and minimize risk (Agere, 2009:71). With the increase in the complexity of doing business in public entities coupled with the increase in transaction volumes and value in an ever tightening regulatory framework, has resulted in businesses taking note of the importance of proper monitoring of contractors (Bagaka & Kobia, 2010:49). The missing link on the earlier study is on the sampling techniques used. Non probability sampling techniques, specifically convenient sampling was adopted to select the sample, in creating a nexus between the two studies, the proposed study will rely on both probability and non-probability sampling techniques to select

the sample. In creating a nexus between the earlier study and this study, the researcher will introduce the aspect of contractor selection and contractor monitoring and incorporate it within his study.

Contractor monitoring is the active control of the contract between the procuring and disposing entity and the contractor, in order to ensure delivery of a cost effective and reliable service at an agreed standard and price. It is the final stage in the bidding process and marks the beginning of a contractual relationship between the procuring and disposing entity and contractor in the process of managing and administrating the contract implementation (Muhwezi and Ahimbishibwe, 2015:76). Contractor monitoring cycle is the process of systematically and efficiently managing contract creation, execution and analysis for maximising operational and financial performance and minimizing risk (Kamya, 2011:52). Mbalangu (2013:56) in his study on compliance monitoring and procurement performance carried out in Uganda notes that supplier contractor monitoring has slowly become an important component for effective supplier relationship management that is directly linked to securing the supply of key commodities needed for sustaining business. On the other hand, Kansiime (2014:12) in his study on the impact of public procurement reforms on service delivery in Uganda notes that, monitoring of this formalized relationship allows an organisation a degree of control over the deliverables and performance requirements.

The use of contracts in business relationships has long been the lifeblood of a business, as the contracts provide the terms, pricing, and service levels of customer-supplier relationships (Mbalangu, 2013:43). Contracts provide a framework by which an organisation manages and mitigates risk in its supplier relationships (Mbalangu, ibid). As a result, contracts have become the living documents that control the dynamics of everyday business in an ever increasing fashion. The above study adopted qualitative techniques of data analysis compared to the proposed study that will

adopt mixed methodological approaches of data analysis. The above studies, however, are not explicit on how contractor monitoring affects performance of projects and which aspects of contractor monitoring one has to focus on in order optimise contactor performance on projects.

In other related studies in Uganda, Oluka and Basheka (2014) examined the determinants and constraints of effective contract management and its implications on service delivery. The study was motivated by persistently low compliance levels reported by procurement authority as far as contract management is concerned. Data was collected using a closed ended questionnaire and the study identified determinants for effective contract management. These include clear definition of processes and having in place contract management plans, appropriate methods of capturing key lessons from contract management process, accurate definition of roles and having a knowledgeable contract Manager.

Alinaitwe, Apolot and Tindiwensi, (2013) investigated the causes of construction project delays and cost overruns in Uganda's public sector with an intention of ranking them according to their frequency, severity and importance. A total of 30 projects at Civil Aviation Authority were reviewed. Five most important causes of delays and cost overruns were found to be changes in the work scope, delayed payments to contractors, poor monitoring and control and high inflation and interest rates. Ahimbisibwe, Muhwezi & Eyaa (2012), examined the relationship between supplier opportunism, contract management and service delivery in outsourced contracts in Uganda. The study was conducted in the 116 Procuring and Disposing Entities in Uganda and the findings reveal that supplier opportunism and contract management are significant predictors of service delivery. This study, however, does not address the impact of supplier determination process on contract performance.

In another study, Oluka (2012) made a theoretical examination of the challenges of procurement contract management and their implications on the delivery of public services. The review concludes that contract management success is strongly influenced by what happens at tendering and award phase. She noted that contract management should be a continuum planned from the start of the procurement process. These studies, however, do not provide a detailed analysis of how contractor monitoring affects project performance. In creating a nexus between the earlier studies and the proposed study, contractor monitoring will be looked at in this study from both the internal and external aspects (Kamya, 2011:47), and it will be measured in terms of compliance monitoring, communication, and records management and reporting.

2.3.3 Oversight Role of PPDA

The oversight is a role or function of governmental bodies such as the Public Procurement and Disposal of Public Assets Authority (PPDA) and the Procurement Appeals Tribunal in the case of Uganda (PPDA Act, 2003). These agencies are specifically created to monitor and enforce compliance with the specific procurement laws. The other oversight bodies in the case of Uganda that participate in enforcing procurement laws are Inspectorate of Government and office of the Attorney General. The PPDA is mandated to set standards, monitor and enforce compliance through conducting of audits and responding to complaints by bidders. On a number of occasions, the PPDA in executing its mandate intervene in the procurement process to address complaints raised. On the other hand the office of Attorney General as a constitutional requirement is involved in clearing all draft contracts before they are signed by the PDEs. The other important oversight function is done internally in the Entity where the procurement structures under the law made up of Accounting Officer, Contracts Committee, User Departments, Procurement and Disposal Unit and evaluation

committee act independently to oversee the procurement processes. There is no specific literature available on the influence the oversight agencies on performance on the road infrastructure projects in Uganda The researcher will seek to establish the effect of the oversight agencies on contractor selection and monitoring and performance of road infrastructure projects in Uganda

2.3.4 Performance of Road Infrastructure Projects

In the European Community, Canada, Australia and South Africa, approximately 30 per cent of infrastructure procurement is delivered using non-adversarial procurement methods (Regan 2012:2). Regan notes that the methods include franchises and concessions, build own transfer (BOT) arrangements (including public private partnerships), relationship and outsourcing (collectively, alternative procurement methods or APM). In both developing and transition economies, non-adversarial contracting and private investment accounts for a greater share of major infrastructure projects, mainly because of constraints on public sector borrowings and greater dependency on private foreign investment and expertise to fast-track improved economic and social infrastructure, and boost both economic and social development (World Bank, 2011).

In the emerging democracies of Central Europe, PPPs are becoming the delivery model of choice for new infrastructure, with governments viewing the partnerships both as a way to complete projects on time and on budget (Eggers, 2006: 4). The World Bank,(2014) report indicated that India's infrastructure deficit is creating significant challenges for the country's continued economic growth. The same report, however, indicates that India has to significantly step up and improved the quality of infrastructure investment. This is augmented by Eggers (2006:4) who posits that 75 percent of India's highway infrastructure projects worth US$1 trillion were to be conducted through public-private partnerships and in Europe, the volume of PPP deals has significantly increased. In spite of

the developments, the World Bank (2014) report highlights a country like Brazil, despite the PPPs and the size of its economy; still faces a substantial infrastructure gap that threatens to limit its growth and competitiveness. The studies by World Bank (2014) may not directly apply to the situation in Uganda given that Uganda is still a developing economy with a small infrastructural base.

Empirical studies both developed and under developed countries identify that construction projects have performed poorly (Takim & Akintoye, 2002). Faridi and El-Sayegh (2006) assert that shortage of skills of manpower, poor supervision and poor site management; unsuitable leadership; shortage and outdated equipment are among the factors that contribute to construction delays and subsequent poor performance of construction projects. This is further augmented by (Hanson et al., 2003) who identify conflict; poor workmanship and incompetence of contractors are among the factors affecting project performance. Meyer, Witt, Kashiwagi & Kashiwagi (2010) posit that the problem of underperformance is not only affecting the road construction projects but also the construction industry. On the other hand, Nichola and Babajide (2010) in their study on evaluation of risk events impacting highway and roads in Nigeria noted that risk events associated with highway and road construction projects have a major impact on issues related to cost, time and quality of project delivery. A questionnaire instrument containing these 10 risk events was sent out to professionals working on highways and road schemes in Nigeria, and 44 completed questionnaires were received from 33 private and 11 public sector related organizations. The findings revealed risk events as (1) “contaminated soil and unstable soil condition”, (2) “design changes and inaccurate design details”, (3) “defective material and material shortages” and (4) “poor quality control and performance control”. The research, however, on top of covering a relatively small area, it does not

relate it to the contractor selection and monitoring and also does not propose solutions to the identified risks.

Similarly, Adero and Aligula (2012) in their study on challenges facing transport infrastructure in the East African Community they note that the cost of doing business in the East African Community is high due to the poor state of regional transport infrastructure. In their study they used comparative indicators to assess the performance of transport infrastructure in the EAC, middle-level economies and other major players in Africa. They cited the report by World Bank, (2010) where it was observed that as per the percentage of roads paved in EAC countries is still at par with low-income countries (about 10%), with only Uganda and Rwanda scoring higher (above 15%) as per the World Development Indicators. This study however did not explicitly bring out the performance of road infrastructure projects. The researcher notes that road infrastructure project performance should be viewed in relation to contractor selection and contractor monitoring which is the central focus of the proposed study.

Uganda's transport network grossly deteriorated along with the rest of the country's infrastructure during the 1970s and early 1980s. This was attributed to civil strife, low prioritization and the country's multiple needs at the time (Magidu, Alumai and Nabiddo, 2010:5). Since then, the performance of road construction projects has been a subject of concern in Uganda for quite some time (Otim, 2012). In spite the civil strife, the World Bank (2007: 162), indicated that Uganda has made strong efforts to improve infrastructure provision particularly in roads and institutional framework. The World Bank report observes that reforms were initiated to enhance infrastructure performance through creation of more institutions such as the Uganda National Roads Authority and Uganda Road Funds (for funding road maintenance). Following the launch in July 2008 of the

reform of the institutional framework governing road building and maintenance, the roads sector was faced with a significant set of new opportunities.

Booth and Mutebi, (2009) posit that if these opportunities are exploited fully, they will open up the possibility of restoring Uganda's road network. The roads sector reform includes: (1) Creation of a semi-autonomous Uganda National Roads Authority (UNRA), with responsibility for planning and procuring the services of private firms for the building and maintenance of national roads; (2) Inauguration of a Road Fund, providing for the direct transfer of fuel levies and other road user taxes directly to UNRA and district councils for road maintenance purposes; and (3) A downsizing and functional transformation of the Ministry of Works and Transport. The institutional reforms coincided with a substantial increase in national budget allocations to roads intended to improve efficiency and effectiveness in the Road sector (*www.statehouse.go.ug)*.Mutabazi (2011) contends that of recent, Uganda has witnessed highest levels of road construction since independence. However, Kavuma (2013) argues that although a lot is being done on road transport which caters for over 95% of both cargo and human traffic, only 3,400 kilometers out of the 20,000 kilometers of the national roads are paved. This is augmented by Booth and Mutebi, (2009:2) who note that Uganda has made significant insight in the roads sector, however, the problem has been a combination of under-spending and the very low efficiency. In spite of the reforms and increased funding for the road sector, there has been abysmal improvement of service indicators for the sector and millions of dollars have continued to be lost in uncompleted contracts (ACODE, 2012:V).The performance of road construction projects has been a subject of concern in Uganda and many countries for quite some time. There is continued outcry from the general public and technocrats on delayed road projects' implementation and lengthy procurement process (Ssebanakita, 2012:12).

The IGG Report, (2012:34), on the performance of the road sector indicated that government is still losing billions of shillings in shoddy works and delayed implementation. Road project such as (1) Mukono-Kyetume-Katosi-Nyenga has been affected by corruption, (2) Mubende-Kakumiro- Kagadi, (3) Kigumba-Bulima-Kabwoya, (4) Kamudini-Gulu and Kafu-Kiryandongo-Kamudini have been affected by the rigid procurement rules and some other roads like Fort Portal Hima, Oluyo-Pakwarch – Arua have shown clear signs of shoddy works *(www.newvision.co.ug)*. This is augmented by Alinaitwe, Apolot and Tindiwensi, (2013:56) who investigated delays in construction project and cost overruns in Uganda's public sector. In their study they identified five most important causes of delays and cost overruns as changes in the work scope, delayed payments to contractors, poor monitoring and control and high inflation and interest rates.

The researcher notes that despite the studies and efforts made to improve road project performance, the specific reasons for poor quality road works, delayed completion of road projects and cost overruns on road infrastructure projects in Uganda continue to elude the project implementers. The above studies give a general picture on the performance of the road project in Uganda and other African countries, however, in creating a nexus between the earlier studies and this study, the researcher will introduce the aspect of contractor selection and contractor monitoring and incorporate them within his study.

2.7 Synthesis of the Literature and Research Gaps Analysis

The literature review above confirms that different scholars have conducted several studies to establish the correlation between contractor selection, contractor monitoring and performance of projects. A number of gaps, however, have been identified as per the literature reviewed which this research will bridge. Most of the studies on the subject are based on developed countries with a well-

developed private and public sector yet the proposed study will centre on Uganda. Most studies were qualitative and do not guide us on the relationship between the study variables. The scholars did not specifically focus on the variables as laid down in this study. This therefore, creates a knowledge gap. It is imperative to investigate the two variables; contractor selection and contractor monitoring in relation to performance of road infrastructural projects. Considering the above, the proposed study will focus on contractor selection and contractor monitoring and performance of road projects.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This Chapter presents and describes the approaches and techniques the researcher will use to collect data and investigate the research problem. They include the research philosophy, research design, study population, sample size and selection, sampling techniques and procedure, data collection methods, data collection instruments, data quality control (validity and reliability), procedure of data collection, data analysis and measurement of variables.

3.2 Research Philosophy

A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analysed and used. The researcher used positivism as the guiding philosophy. Positivists believe that reality is stable and can be observed and described from an objective viewpoint (Levin, 1988:23), that is without interfering with the phenomena being studied. Levin (1988:56) further contends that positivists assume that reality is fixed, directly measurable, and knowable and there is just one truth, one external reality. "Positivism has a long and rich historical tradition, it is so embedded in our society that knowledge claims not grounded in positivist thought are simply dismissed as a scientific and therefore invalid" (Hirschheim, 1985:33). This view is indirectly supported by Alavi and Carlson (1992:34) who, in a review of 902 IS research articles; found that all the empirical studies were positivist in approach.

The researcher found positivist philosophy ideal because the positivists design their work to test the informed guesses, in this case hypotheses about what the findings were. The positivist researcher

examines the relationship between only two or three factors termed as variables at a time holding the rest constant and assumes that respondents understand the meaning of their questions in an identical way. This will help the researcher design structured survey questions to administer to randomly selected sample.

3.2.1 Positivistic Approaches

Positivism originates in the study of natural sciences using so-called scientific methods to develop theory through hypothesis formulation and testing (Ramsay, 1998 ibid.). This involves developing covering laws of cause and effect between parameters of the subject of the research and the laws then being used to explain the natural world, or in this case, the social world (Hume, 2011:23). Facts are emphasised rather than values, meanings and laws being assumed to give a definitive explanation. Positivism is described as a mechanistic worldview of closed systems operating like machines, where changes to inputs lead to predictable changes to outputs (Bhaskar 1978:63-90). Examples of positivism researchers include Ritter and Gemunden (2004:33), who investigated relationships between quantitative measures of innovation performance and strategy using structural equation modeling.

The research will attempt to gain empirical proof of a hypothesised model of covering laws, with a focus on statistical generalisation (Yin 2003:18) to a large quantitative sample. However, positivism has been criticised for use in the study of social systems as they are not closed or mechanistic. Bhaskar (ibid.) suggests that a closed system is isolated from external influences or any change in the influences and its internal structure of actors and processes must be constant, and finally that performance of the system as a whole must arise as a result of the performance of system components alone. The literature has shown that producing an innovative product is inherently an

inter-organisational process (Tidd , 2005:52-55) and that the networks of relationships involved are actually open systems with only an arbitrary boundary for research purposes (Harland , 2004). Further, a huge number of factors are involved in performance and innovation as shown in the literature review. Additionally the discussion of network competence in Ritter and Gemunden (ibid.) implies that external influences are at work, suggesting that use of the positivistic quantitative methods would be at best blunt and forced for this research. Ramsay (ibid.) points out that the actors in the research subject are all human and are, therefore, not uniform, passive and unchanging. They will change as they learn and develop the element of newness that is essential for the innovative product. Ramsay (ibid.) and Sayer (1984:33) suggest that this ability to generate meaning is not ontologically compatible with a positivistic philosophy. For the above reasons a positivistic stance is very limited in its appropriateness for this research and the next section discusses interpretivist approaches.

3.2.2 Interpretivist Approaches

Whereas positivism assumes that the human actor is uniform and not implicated in the subject of the research, interpretivism is built on the recognition of the human actor and their influence (Ramsay ibid.), tending to concentrate more on qualitative data. Interpretivism typically works with qualitative data to generate meanings rather than rules and covering laws and may try and gain analytical rather than statistical generalisability (Yin, 2003:18). Mir and Watson (2001:45) state that the phenomenon being researched exists only as far as it is interpreted by the researcher, with a lack of ultimate truth. This research studies performance measurement and performance management processes, a topic that has seen different interpretations (Lebas, 1995, Halachmi 2005:41 and Bourne, 2005:31) and a lack of clarity about what the processes are (Radnor & McGuire 2004:56).

This demonstrates a key principle of interpretivism, that the same research subject is viewed in different ways by different researchers, often giving different results. However interpretivist stances are subject to criticism for resulting in theories that are not a description of reality, but simply generated by the researcher (Mir & Watson 2001:29). The open systems involve limited theoretical generalisability of research findings. This is because of a lack of objective data as the philosophical position may influence research findings (Ramsay, ibid). While both positivism and interpretivism have aspects that limit how appropriate they are for use in this research, an interpretivist stance is more suitable. An interpretivist point of view accepts realities that are created by the researcher with limited generalisability. They are, however, not the sort of totally objective, blunt realities of a closed mechanistic system that lead to drawbacks in conducting research from a positivistic stance.

Interpretivism allows some explanation of performance measurement and management of innovative products and their influence on performance. An interpretivist stance is also appropriate for the phenomena studied in this research. Later on, the chapter describes how some of the shortcomings of interpretivism are mitigated, and the next section continues to develop the methodology by discussing further aspects of the research approach and process.

3.3 Research Approach and Process

The choice of research philosophy is reflected in the aligned research approach and process. The key research approaches are found in research in the social science literature as a whole. Firstly, a deductive approach (Gill & Johnson, 1997:19) advocates theory development before empirical work, which is used to test the theory. A deductive approach fits closely with a positivistic philosophical stance and quantitative data, an example of deduction being theoretical model testing in Ritter and Gemunden (2004:55). Deduction may be said to produce more objective, unbiased empirical data

because of its positivistic alignment. Secondly, an inductive research approach (Merton, 1957:99) involves theory development after empirical work and is aligned with a phenomenological standpoint, frequently using qualitative data. An example is the development of the interaction model (Ford, 1986:31), showing how inductive research can benefit from serendipitous data and explanations discovered during empirical work in the social sciences. Just as positivist and interpretivist standpoints both have their drawbacks, so does following a purely deductive or inductive approach.

Social science research has often shown aspects of both deduction and induction in research approach, both developing theories from literature that are then empirically tested, as well as refining the theory following empirical work where new data was gathered. Dubois &Gadde (2002:44) describe this as an iterative research process of systematic combination of existing theories and those discovered through the empirical work. Ayer (1968:67) agrees, having named this research process 'abduction'. Abduction is well aligned with the chosen interpretivist philosophy as it both attempts to develop explanations and allows for unexpected findings. Abduction also offers a truthful and pragmatic description of the overall research process in reality. The following sections continue to describe the research process, focusing on matters of methodology, unit of analysis, sampling and data collection.

3.4 Qualitative Approach as a Research Method for the Study

The researcher will adopt qualitative research because of its phenomenological position, unlike Quantitative research which is based on positivism (Maykut and Morehouse, 1994:31).This phenomenological position will allow the researcher to gain insight into reality of contractor selection and contractor monitoring such as their social relations (Flick, 2002:19). As a general

theme, Brockington and Sullivan (2003:57) maintain that qualitative research first tries to "understand the world through interacting with, empathizing with and interpreting the actions and perceptions of its actors." Berg (1995:7), while contributing to the explanation and understanding of the qualitative method, writes that "qualitative research properly seeks answers to questions by examining various social settings and the individuals who inhabit these settings". Another reason for employing a qualitative data collection method is because of the complexity that underlines contractor selection and contractor monitoring. Thus, the qualitative method will be considered in order to obtain in-depth knowledge and gather relevant information to the study.

3.5 Research Design

The descriptive, correlational survey design will be adopted because it provided a systematic description that is as factual and as accurate as stated by Amin (2005:56). A correlational survey enables the researcher to find out the relationship between the study variables (Sekaran, 2003:34). The study also applied quantitative and qualitative approaches. Amin (2005:58) states that quantitative approaches are plans for carrying out research oriented towards quantification and are applied in order to describe current conditions or to investigate relationships, including cause and effect relationships(Ezeani, 2005:31). Quantitative approaches help to describe the current conditions and investigate the established relationships between the identified variables (Bill, 2011:34). Quantitative approaches will be adopted in sampling, data collection, data quality control and in data analysis. The rationale for the approach is that the analysed quantitative data provides insights of addressing the research problem and qualitative data refines and explains the quantitative statistical results by purposively selected participants' opinions and attitudes in-depth (Creswell & Clark, 2007:72-73).

This study will also apply qualitative approaches which involved an in-depth probe and application of subjectively interpreted data (Sekaran, 2003:23). Qualitative research enables the researcher to gather in-depth information about the study. For example, unstructured qualitative interviews serve this purpose (Ezeani, 2005:42). Qualitative approaches will be used when sampling, collecting of data, during data quality control and in data analysis.

3.6 Study Population

According to Sekaran and Bougie (2013:262), population refers to the entire group of people; things or events that the researcher wishes to investigate and make inferences. There are numerous key players involved in the national road sector procurements that include; Procurement Professionals in government, the engineers in the department of roads and bridges in the Ministry of Works and Transport, the engineers in local governments who take responsibility for urban and community roads under local governments, the staff in Uganda National Roads Authority (UNRA) mandated to develop and maintain the national roads network, the Uganda Road Fund created to collect and extend finance for routine and periodic maintenance of public roads, the members of Parliaments who are members of the Infrastructure Committee of Parliament and the civil society organisation who represent the interest of the general public.

The total population for this study will be 500 and the researcher will focus on national road projects. The sample will be drawn from bodies and agencies involved in procurement and monitoring construction of road infrastructure projects. The proposed breakdown of the study population is as follows: 300 Procurement Professionals from PDEs and Oversight agencies, 60 Engineers from UNRA and Ministry of Works, 50 Contractors from UNABSEC, 40 Engineers from

UACE, 30 Members of Parliament on Infrastructure Committee and 20 members from Civil Society Organizations.

3.7 Determination of the Sample Size

The sample size is to be determined by the size of the sample population (Nueman, 1997:33), and it shall neither be excessively large, nor too small but should be optimum. It shall fulfill the requirements of efficiency, representativeness, reliability and flexibility (Shajahan, 2004:45) which are needed to ensure accurate sample size. Increased sample size will, in general, improve the quality of the statistical results (Ghauri, 1995:77). Yin (2003:23), suggests that sampling possesses the possibility of better interviewing (testing), more thorough investigation of missing, wrong, or suspicious information, better supervision and better processing than it is with complete coverage. The reasons for this will be guided by sampling cost limitations, need for accurate results and required speed for data collection as determined by time constraints.

The sample size that will enable the researcher collect the necessary data for this study will be determined using the Creswell (2009) formula which states as follows:

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

Where: (N) is the total population size from which to sample randomly, 1 is a constant, (e) is the assumed level of precision/sampling error which is taken as 5% (0.05). Where N = 500

$$\mathbf{n} = \frac{\mathbf{500}}{\mathbf{1+500(0.05)^2}}$$

n which is the targeted population = 222

The strata sample sizes are determined by the following equation:

$$n_h = (N_h / N) * n$$

Where n_h is the sample size for stratum ***h***, N_h is the population size for stratum *h*, **N** is total population size, and n is total sample size.

Table 3.1: Sample Size selection

Category	**Targeted Population**	**Sample Size**
Procurement Professionals	300	133
Private Consulting Engineers (UACE)	40	27
Project Engineers from UNRA and MOWT	60	18
Contractors under UNABSEC	50	13
Members of Parliament on Infrastructure Committee	30	22
Civil Society organizations	20	9
Total	**500**	**222**

Source: Primary Data (2015)

3.8 Sampling Technique and Procedure

Israel (1992:1) notes that sample size can be determined using various strategies. These include census, imitation of sample used in similar studies, use of tables and application of formulas. The study will adopt probability sampling, or random sampling, which is a sampling technique in which the probability of getting any particular sample may be, calculated (Ezeani, 2005:44). The advantage of probability sampling is its lower cost compared to probability sampling. Stratified sampling will be adopted in sampling procurement professionals, private consulting engineers (UACE), project engineers. According to Creswell (2009:48), stratified sampling ensures that every member has an

equal chance of being recruited into the sample. Stratified random sampling may also lead to data skewed to a particular subgroup and hence introduces sampling error (Eisenhardt, 1989; Patton, 1990) and is as a result not recommended for this research. A sample frame was constructed and then the members were randomly sampled.

3.9 Data Collection Methods and Instrument

The choice of method is influenced by the data collection strategy, the type of variable, the accuracy required, the collection point and the skill of the enumerator. Links between a variable, its source and practical methods for its collection can help in choosing appropriate methods.

The main data collection methods will be:

3.9.1 Questionnaire Survey

The researcher will adopt the questionnaire as a method of data collection because it is less expensive compared to other methods of data collection (Amin, 2005:12). A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents (Bill, 2011:12). Although they are often designed for statistical analysis of the responses, this is not always the case. The researcher intends to use the questionnaire survey because it is practical, large amounts of information can be collected from a large number of people in a short period of time and in a relatively cost effective way. A questionnaire is proposed because it allows in-depth research, to gain first hand information and more experience over a short period of time (Sekaran, 2003:23). A questionnaire increases the degree of reliability due to the many items in it and it as well enhances the chances of getting valid data (Amin, 2005:45). The close ended questionnaire will capture questions on the independent and

dependent variable. The researcher will ensure that all categories of respondents receive the questionnaires in time (Were, 2012:31).

The instruments to be used will be the structured questionnaire; developed in line with recommended guidelines by various scholars that include Kothari (2004:34); Sekaran and Bougie (2013:76) and Saunders (2007:31). Section **A** has Demographic questions, the participants' age, gender, employment and degrees earned. Some questions in the survey will have an open-ended "Other (specify)" option to provide one correct answer for every subject in the study. The last question on the survey will be open-ended and will ask for additional information about the participant's experiences in the procurement of road infrastructure projects. Section B and second and **C** of the survey will ask questions related to the Contractor Selection, Contract Monitoring and participants' experiences in it. It will include the contractor selection questions related to the evaluation process and factors contributing to the decision to award contracts. The latter will be measured on a 5-point Likert type scale from "Strongly disagree" to "Strongly agree" and will provide data regarding how the institutional-related factors impact contractor selection. The second section will measure the components of contractor monitoring and how they relate to each other. A 5-point rating scale from "Strongly disagree" to "Strongly agree" was used. The section D will require participants to comment on whether there is need to adjust the current procedures and require making proposals where adjustment will be recommended.

3.9.2 Interviews

The researcher will also conduct interviews to gathers information through verbal direct interaction with participants (Kothari, 2004:17). As a research technique, the interview is a conversation carried out with definite purposes of obtaining certain information by means of spoken word. Interview

requires the actual physical proximity of two or more persons and generally requires all information channels of communication to be open (Kothari, 2004:18). The interviews will capture views of selected few of the respondents on the independent and dependent variable. The data obtained from the interviews will be used in the qualitative analysis to re-affirm the findings of the quantitative analysis. In addition the interviews will provide an opportunity to the researcher to revisit some of the issues that had been an over-sight in other instruments and yet they are deemed vital for the study (Creswell, 2009:41).

An interview guide will be developed, piloted, refined and updated throughout the course of the empirical work as part of the abductive process. Questions will be designed according to Bryman (ibid.), for example, not to be leading the respondent into a particular answer. They will also contain prompts in case the interviewer senses the need to delve deeper into some aspect of the responses, or if the respondent needs additional triggers. As such, the interviews will be conducted in the style of a guided conversation. The majority of interviews will be face to face. Average duration of the interviews will be for about an hour. Confidentiality of the interview data will be guaranteed and the purpose explained.

As part of the semi-structured interviews, additional data will be gathered from the respondents by involving them in drawing network pictures (Oberg, 2007:31, Iacobucci, 1994:97) in which they will be asked about contractor selection, contractor monitoring and oversight role of PPDA. Interview guide will be used to assist the researcher in comparing the answers that will be obtained (Amin, 2005:31).

3.9.3 Document Review

Documentary review will be used to supplement other information about contractor selection and contractor monitoring. Official primary documents and secondary documents shall be reviewed to investigate the research problem under study (Kothari, 2004:19). Primary documents refer to eye witness accounts to produce an experience about a particular event or behavior (Sekaran, 2003:45). On the other hand, people who are not present at the scene but who receive high witness account produce secondary documents (Bailey, 2004:13).

In this study, the researcher will use written documents to provide the qualitative opinions on the study problem. The lists of public documents that will be reviewed include the, Annual Audit Reports by OAG, Investigation Reports by IGG, PPDA Annual Procurement Audit Reports, past dissertations, reports, manuals and other written documents and statistical records to provide important information related to the study.

3.10 Data Quality Control and Management

3.10.1 Validity

Validity is the ability to produce findings that are in agreement with theoretical or conceptual values (Sekaran, 2003:21). The research is said to be valid when it measures what it is supposed to measure. To establish validity, the instruments will be given to two experts to evaluate the relevance of each item in the instrument to the objectives and rate each item on the scale of very relevant (4), quite relevant (3), somewhat relevant (2), and not relevant (1).

3.10.2 Reliability

Reliability is a measure of the degree of which the research instruments yield consistent results or data after repeated trials (Mugenda and Mugenda, 1999:23). For qualitative data, the researcher will give the instruments to the experts to confirm that responses against previous answers are appropriate and detected questions likely to elicit inadmissible responses (Amin, 2005:27). The researcher will also use the standardized methods and protocols for capturing observations, alongside recording forms with clear instructions. A pretest of the instrument in a time lapse of 2 weeks will be carried out on qualitative to establish consistence in responses. According to Amin (2005:32), pre-test reliability can be used to measure the extent to which the instrument can produce consistent scores when the same group of individuals is repeatedly measured under same conditions. The results from the pretest will be used to modify the items in the instruments.

For quantitative data, Cronbach's alpha coefficient will be used to determine reliability as pointed out by Cooper and Schindler (2003). Cronbach"s alpha is a reliability coefficient that indicates how well the items in a set are positively correlated to one another (Sekaran and Bougie 2009). As reported by Tavakol & Dennick (2011) in their study "Making sense of Cronbach's alpha," Alpha was developed by Lee Cronbach in 1951 to provide a measure of the internal consistency of a test or scale; it is expressed as a number between 0 and 1 and describes the extent to which all the items in a test measure the same concept.

In order to avoid incurring huge costs and expenses at research preparation stage, participants will be selected on the basis of convenience, accessibility and geographic proximity. Also, the selection of participants will depend on their availability and willingness to assist with feedback and comments. The pilot study will be used to test out the interviewing questionnaires and identifying whatever

shortcomings in the interviewing process (Zikmund, 1997:39). The experience from the pilot study will help to fine tune the research design and field procedures.

3.11 Procedure of Data Collection

The researcher will seek for a specific introduction in form of a letter from the University introducing the researcher to the target government agencies, and members of parliament, association of engineers and contractor and procurement professionals. A cover letter will be attached to the research instrument explaining the purpose of the research and assuring the respondents of the confidentiality involved. The researcher will distribute the questionnaires and collect the data from the various respondents and will ensure constant follow-up in order to minimize non-responses (Kizilcec, 2014:56). Both qualitative and quantitative data will be collected concurrently at the same time in the same visit to the field (Creswell, 2009).Data collection will done by the Principal researcher and one research assistant that is fully trained on the objectives of the study, how to use questionnaires and other tools in order to get the intended data. This is in line with the argument by Mugenda and Mugenda (2003:185) when they pointed out that; the quality of data depends to a great deal on the ability of the research assistants and enumerators. It is very important to train them on the research instruments in use. Using the instruments developed and discussed in the above section, both quantitative and qualitative primary data were collected.

3.12 Data Analysis

This is the process of systematically applying statistical or logical techniques to describe and illustrate, condense and evaluate data. Data will be analysed both qualitatively and quantitatively.

3.12.1 Quantitative Data Analysis

Data will be sorted using the Statistical Package for Social Scientists (SPSS) method. The researcher will employ Univariate analysis techniques in analyzing this data. Univariate analysis is the simplest form of quantitative (statistical) analysis. It is carried out with the description of a single variable in terms of the applicable unit of analysis (Sekaran, 2003:25). Univariate analysis is commonly used in the first, descriptive stages of research, before being supplemented by more advanced, inferential bivariate or multivariate analysis (Creswell, 2009:45). In addition to frequency distribution, univariate analysis commonly involves reporting measures of central tendency (location). In summary, the researcher will apply the Pearson correlation coefficient to test the degree of relationship between the study variables. The researcher will also analyse the raw data using regression analysis. The background variables will be analysed using both the two-way and one way analysis of variance.

3.12.2 Qualitative Data Analysis

The qualitative part of this research will be used to build further understanding of factors influencing project performance. With these objectives in mind, the qualitative research will be less structured aimed at comprehending the meaning of the data and enabling reflection and conceptualisation. Qualitative data will be analysed using both thematic analysis and content analysis (Holsti, 1969). Content analysis will involve coding the data and later processing it (Babbie, 1992). This is because the two approaches complement each other since the theme emerges from the researcher and the description summaries from the responses (Sekaran, 2003:34).

3.13 Measurement of Variables

Measurement is the assigning of numbers or codes according to prior-set rules. It is how we get the numbers upon which we perform statistical operations. There are many ways to classify measurements. The software name originally stood for Statistical Package for the Social Sciences (SPSS). SPSS classifies measurements as nominal, ordinal, or scale (Velleman& Wilkinson 1993:73). The independent variables will be measured in terms structures, process and methods and the dependent variable will be measured in timeliness, cost and quality. The moderator variable which is the oversight role of PPDA will be measured in terms of effectiveness and relevancy.

The instrument will include 60 items. The independent variables and the dependent variable will be measured using the works of Tadesse (2006:34) that focus on the planning, controlling, decision making. The items in the questionnaire will be scored on the 5 point Likert scale ranging from strongly agree (1) to strongly disagree (5).Contractor selection and contractor monitoring strategies- will be measured according to the dimensions developed by Tekeu (2013:39). The items in the domain will be scored on the 5 point Likert scale ranging from strongly agree (1) to strongly disagree (5).

3.14 Ethical Considerations

The ethical issues considered in this study include worthiness, consent, and confidentiality. To ensure informed consent, respondents and all those who participated in this study will be provided with all the relevant information about this study. This is to ensure that they understand the nature of the study, objectives of the research and the benefits to the researcher. This will be done via the letter of introduction that will be sent to the interviewees seeking access to organizations and to individuals, to collect, analyze and report on findings. This process further will ensure that the study

does not transgress the behavioral norms established by organizations being studied. Also, findings will be reported in a complete and honest fashion, without misrepresenting any responses given or intentionally misleading readers and researchers interested in this study. Furthermore, this study will respect participants' right to privacy. Each case study and participant will be allocated alphanumeric codes that will be used throughout the research process instead of using their actual names.

Embarking on a fieldwork "remains one of the most challenging of all social science endeavors (Yin, 2013:11). However, in most situations, "it contributes to our knowledge of individual, group, organisational, social, political and related phenomena (Yin, 2013:12). Generally, some of the respondents may doubt my person, but a presentation of my introduction letter will assist me and as such discussions will progress very openly. Interview sessions will be managed tactfully; even when an informant tends to digress. The ethical considerations are essential in undertaking any research, therefore, the nature; timing and location of my research make it very imperative that ethics and rules of research are observed.

The researcher will adequately ensure that no suppression, falsification or inventing of evidence occurs at the point of transcription and analysis. This will be done through processes such as reaffirmation of unclear issues from respondents or retrieving and re-examining of raw data and indexed documents. Newman (2000:12) argues that engaging in such fraudulent practices is not acceptable in professional research communities as they constitute scientific misconduct. However, as a compromise to avoid putting the respondents in any danger, the categories of respondents in the interviews are listed without their names.

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APPENDIX 1: QUESTIONNAIRE

SECTIONA:

Demographic Information

1. Your position: Male Female	
2) **No of years in the organisation**	1 - 5 Yrs[ ] 5-9Yrs [ ] 10-14 Yrs [ ] Over 15Yrs [ ]
3) **Highest level of education**	Diploma [ ] Degree [ ] Post Graduate [ ] Others (specify)……..

SECTION B

CONTRACTOR SELECTION:

(For National Road Projects under Uganda National Roads Authority –UNRA)

Strongly Disagree (SDA)	Disagree (D)	Not Sure (NS)	Agree (A)	Strongly Agree (SA)
1	2	3	4	5

Please tick the most appropriate to indicate your position on the statements below

Procurement Procedures and Evaluation criteria						
CS1	The current procurement procedures cause unnecessary delays in contractor selection process	**1**	**2**	**3**	**4**	**5**
CS2	The current procurement procedures are the cause of inefficiency in the selection process	**1**	**2**	**3**	**4**	**5**
CS3	The current procurement law has many gaps that provide room for unnecessary complaints.	**1**	**2**	**3**	**4**	**5**
CS4	Contractor selection criteria focus more on compliance with the law than the factors that affect the ability of the contractor to perform.	**1**	**2**	**3**	**4**	**5**
CS5	Prohibiting price negotiations is affecting selection of quality contractors	**1**	**2**	**3**	**4**	**5**
CS6	Inadequate experience and skills among PDE staff is affecting contractor selection process.	**1**	**2**	**3**	**4**	**5**

CS7	The evaluation process during contractor selection for public infrastructure projects should be outsourced to independent parties	**1**	**2**	**3**	**4**	**5**
CS8	The current functions of key players in the PDEs should be streamlined to eliminate unnecessary conflicts that cause delays	**1**	**2**	**3**	**4**	**5**
CS9	A special Public Infrastructure Body should be setup to provide professional support public infrastructure procurements	**1**	**2**	**3**	**4**	**5**
CS10	The interference by oversight agencies affects the selection process	**1**	**2**	**3**	**4**	**5**

SECTION C

CONTRACTOR MONITORING

(For National Road Projects under Uganda National Roads Authority –UNRA)

Strongly Disagree (SDA)	Disagree (D)	Not Sure (NS)	Agree (A)	Strongly Agree (SA)
1	**2**	**3**	**4**	**5**

Please tick the most appropriate to indicate your position on the statements below

CM1	Inadequate supervisory skills among PDE Staff designated to monitor contract is affecting performance	**1**	**2**	**3**	**4**	**5**
CM2	Failure by contract managers to clearly understand contractor monitoring procedures is affecting performance	**1**	**2**	**3**	**4**	**5**
CM3	Contract monitoring staff do not care to prepare contractor monitoring plans.	**1**	**2**	**3**	**4**	**5**
CM4	Project staff do not care to communicate to contractors expected project goals and expectations	**1**	**2**	**3**	**4**	**5**
CM5	Contract monitoring staff do not bother to make appraisal of contractors during project implementation.	**1**	**2**	**3**	**4**	**5**
CM6	Record management during project implementation is never taken serious contract monitors.	**1**	**2**	**3**	**4**	**5**
CM7	Delayed payment of contractors affects contractor monitoring	**1**	**2**	**3**	**4**	**5**

CM8	Laxity to invoke penalties due to delayed or poor quality works affects monitoring	**1**	**2**	**3**	**4**	**5**
CM9	There are irregular site inspections by contract monitors	**1**	**2**	**3**	**4**	**5**
CM10	Poor feedback between contractor and employer affects contractor monitoring.	**1**	**2**	**3**	**4**	**5**

SECTION D

PERFORMANCE OF ROADS PROJECTS (*Cost, time and quality)*

Strongly Disagree (SDA)	Disagree (D)	Not Sure (NS)	Agree (A)	Strongly Agree (SA)
1	**2**	**3**	**4**	**5**

Please tick the most appropriate to indicate your position on the statements below

PERFORMANCE (*Cost, time and quality)*

(For Road Infrastructure Projects)

Strongly Disagree (SDA)	Disagree (D)	Not Sure (NS)	Agree (A)	Strongly Agree (SA)
1	**2**	**3**	**4**	**5**

Please tick the most appropriate to indicate your position on the statements below

Cost of implementation						
C1	Most road projects are never implemented within the contracted costs	**1**	**2**	**3**	**4**	**5**
C2	Corruption is affecting road project costs	**1**	**2**	**3**	**4**	**5**
Time of delivery						
T1	Most road projects are never completed in project scheduled time	**1**	**2**	**3**	**4**	**5**
T2	Contractor capacity gaps are affecting road projects schedules	**1**	**2**	**3**	**4**	**5**
T3	Delayed payment to contractors is affecting project performance	**1**	**2**	**3**	**4**	**5**
T4	Inadequate equipment is affecting road project performance	**1**	**2**	**3**	**4**	**5**

T5	Delays in designs is affecting road project performance	**1**	**2**	**3**	**4**	**5**
T6	The current land policy on land aquisition is affecting road project performance	**1**	**2**	**3**	**4**	**5**
Quality						
Q1	Use of poor material is affecting road infrastructure	**1**	**2**	**3**	**4**	**5**
Q2	Inexperienced contractors is affecting road performance	**1**	**2**	**3**	**4**	**5**
Q3	Poor designs are affecting road performance	**1**	**2**	**3**	**4**	**5**
Q4	Poor public sensitization is affecting road performance	**1**	**2**	**3**	**4**	**5**
Q5	Inadequate funding is affecting road projects	**1**	**2**	**3**	**4**	**5**
Q6	Corruption is affecting quality road projects	**1**	**2**	**3**	**4**	**5**

SECTION E -THE REGULATOR'S ROLE

Please tick the most appropriate to indicate your position on the statements below

Strongly Disagree (SDA)	Disagree (D)	Not Sure (NS)	Agree (A)	Strongly Agree (SA)
1	**2**	**3**	**4**	**5**

Functions of PPDA

ROP1	PPDA has not been effective in ensuring compliance in the procurement for road project procurements	**1**	**2**	**3**	**4**	**5**
ROP2	PPDA has not been effective in its advisory role in procurement for national road projects	**1**	**2**	**3**	**4**	**5**
ROP3	PPDA has not been effective in setting standards in procurement road projects	**1**	**2**	**3**	**4**	**5**
ROP4	PPDA intervention during the procurement processes has not been effective improving performance of road projects	**1**	**2**	**3**	**4**	**5**
ROP5	PPDA has not effectively built capacity of key players on road projects.	**1**	**2**	**3**	**4**	**5**

INTERVIEW GUIDE

A: Contractor Selection

1. To what extent is the current contractor selection procedure appropriate for national road projects?
2. To what is the current selection process cause for delays in implementation of road projects?
3. To what extent does the current contractor process affect the quality and cost of road projects?
4. What do you think should be done to address the challenges in contractor selection?

B: Contractor Monitoring

1. What is the most appropriate way to monitor contractors?
2. Which method of contractor monitoring will address the escalating cost for road projects in Uganda?
3. Of the contractors monitored internally by UNRA staff and those monitored by external out sourced firm, which do you think offers the best roads?
4. What is the best method UNRA can adopt for contractor monitoring?

C: Oversight Role of Agencies

1. To what extent does the oversight role by PPDA and IGG ensure quality delivery of roads?
2. What extent does the oversight role by PPDA and IGG ensure that projects are delivered at low costs?
3. What extent does the oversight role by PPDA and IGG ensure that projects are delivered on time?
4. How can the oversight role be made more proactive?

B: Performance of Road Projects

1. To what extent has UNRA achieved the road work projects on time?

2. To what extent has UNRA achieved the road work projects at a least cost?
3. To what extent has UNRA delivered quality roads in Uganda?
4. What can be done to enhance the performance of national road projects under UNRA?

LIST OF DOCUMENTS FOR REVIEW

1. Ministerial Policy Statement for Ministry of Works and Transport
2. Ministerial Policy Statement for UNRA
3. Ministerial Policy Statement for PPDA
4. Annual Engineering Audit Reports by UNRA
5. UNRA performance reports issued by the World Bank missions
6. Report by Tribunal investigating the UNRA performance
7. Annual Audit Reports of the Office of the Audit General on UNRA and Ministry of Works and Transport
8. Procurement Audit reports on UNRA by PPDA
9. PPDA Act of 2003 and PPDA Regulations of 2014
10. Procurement Performance Management System (PPMS) reports by PPDA