CONTRACT MANAGEMENT AND PERFORMANCE OF ROAD MAINTENANCE PROJECTS IN ARUA MUNICIPALITY

By

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DECLARATION

I, Godfrey Aluonzi, declare that this is my original work; and has not been presented to any university or institution for award of a degree; and throughout the work I have acknowledged all previous work referred to.

Signature: _____ **Date**: _____

APPROVAL

This dissertation entitled “contract management and performance of road maintenance projects in Arua Municipality” has been conducted and submitted for approval under our guidance as Uganda Management Institute supervisors.

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Ms. Pross Nagitta Oluka

Signature: _____**Date**:_____

Mr. Alex Nduhura

DEDICATION

To my companion Carolyn, my brother Baker and children Denis, Cynthia and Hannah; most importantly, to God Almighty.

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I would like to express my gratitude to the management and staff of Uganda Management Institute for providing me with an ideal and enabling study environment and for selfless efforts and sacrifices made towards ensuring that I achieve true 'value' during the entire period of my study at the institute.

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To God be the Glory!

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LIST OF ABBREVIATIONS

AMC	Arua Municipal Council
CRM	Customer Relationship Management
DV	Dependent Variable
FY	Financial Year
GDP	Gross Domestic Product
HHS	Health and Human Services
IV	Independent Variable
KM	Kilo Metres
LTD	Limited
MEC	Municipal Executive Committee
NASA	National Aeronautics and Space Administration
OGC	Office of Government Commerce
OFPP	Office of Federal Procurement Policy
PDU	Procurement and Disposal Unit
PRM	Periodic Road Maintenance
RRM	Routine Road Maintenance
TPC	Technical Planning Committee
UNRA	Uganda National Roads Authority
URF	Uganda Road Fund
USA	United States of America
USHS	Uganda Shillings

ABSTRACT

This purpose of this study was to establish the relationship between contract management and performance of road maintenance projects in Arua Municipality. Objectives of the study were to:- establish the relationship between contract administration, relationship management and contract closure, and performance. A cross-sectional survey design was used, with data collected from a sample of 102 respondents using questionnaire survey and interviewing methods. Data was analysed using the statistical package for social sciences (SPSS) 16 for appropriate transformation. The study found a significant relationship between contract administration and performance of the projects; a significant link between relationship management and performance of the projects; and a significant relationship between contract closure and performance of the projects with respect to the three objectives. The study concluded that improved payment mechanism and controlled contract variations lead to better performance, improved communication channels and disputes management improve projects performance and that thorough final inspection, prompt payment of dues and stakeholders' involvement in contract management improve the projects' performance. The study recommended that government of Uganda should increase the budget for road works; on objective two, penalties should be introduced in contracts to check laxity of all parties involved, internal audit function strengthened, contract management meetings regularly held and contract specifications clearly articulated and adhered-to; and on objective three, technical staff should be trained in contract management and stringent performance measures provided as controls to adequately punish errant officials.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

According to the Works and Transport Sector Performance Report (2011), 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. In this chapter, the researcher studied the relationship between contract management and performance of road maintenance projects in Uganda. The chapter consists of a background to the study, statement of the problem, purpose and objectives of the study. The researcher further asked research questions, stated the hypothesis of the study, developed a conceptual framework, justified the study and stated its scope.

1.2 Background

1.2.1 Historical Background

Biafore (2006) observes the importance of contract management in projects performance. She notes that learning to avoid past mistakes is an important part of improving project performance. Cantabria (2011) records the use of 'rule of thumb' during the early years of industrialization as a measure (rough estimate) of things. The writer further reports the introduction of scientific management by Taylor in the early 1900s, which signaled the evolution of performance cost measurement. As industrialization entered the 20th century, Taylor mainly focused on productivity (efficiency) of the labor force that comprised mostly unskilled immigrants or field workers. It took about a century before the methods

for evaluating performance took shape and form as a business management discipline (Biafore, 2006). Memon, Rahman and Azis (2012) in a study in Malaysia found that the construction industry has been facing poor performance, resulting in failure to achieve effective time and cost performance-the major contributors of this poor performance being design and documentation issues, financial resource management and project management and contract administration issues. Martin (2012) the NASA Inspector General also identified four key factors impeding the organization's ability to deliver projects successfully as technical complexity of a project, optimistic organizational culture, unstable funding and limited opportunities for program/project manager development.

Recent studies by Le-Hoai, Lee and Nguyen (2013) in Vietnam also identified six significant variables to project time index as underground site condition, project management works, estimating works, competency of subcontractor(s), accuracy and completeness of design and owner's project financing. Gwilliam et al. (2008) in a study in Sub-Saharan Africa, observed a reasonably strong correlation between qualities of road networks in a given country. They noted more recent trends where many African countries appear to have made substantial progress in improving the quality of their road networks to good or fair condition. The writers, however, cited the very limited data available on quality trends. After noticing that quite a number of roads in the districts and urban councils were in a bad state, Government of Uganda procured road equipment for local governments as a measure to improve construction, grading and maintenance of roads, hence closing the performance gap in the road maintenance sector in Uganda

(Mutabwire, 2012). It was, therefore, the intention of this researcher to draw parallels with these findings in the context of Arua Municipality.

The history of contracting, on the other hand, can be traced to some of the oldest written records in history, providing a prolific set of documents such as the Ten Commandments in the Bible, the Magna Carta, the Geneva Convention, marriage (Chalkley, 2011 as cited by The ITAM Review, 2013). Contracting during the industrial revolution was hardly existent since most firms produced in-house. However, contract management in government has received increasing interest since the late 1980s, fostered by the 're-inventing government' movement (Osbourne and Gaebler, 1992). This movement was part of the New Public Management (NPM) that saw numerous public sector reforms, a wave of decentralization endeavors and the injection of an entrepreneurial spirit in the running of government. Managers were given much autonomy to manage, accompanied by strong measures of performance. It was, however, not until 1989 that contracting-out was formally identified as a business strategy (Rundquist, 2007; Piore and Sabel, 1990) in an effort to transfer some risks to other parties, thereby targeting better performance.

Today's project manager must, therefore, know about contract management (ESI international, 2013). More recently contracting has shifted to service sector or knowledge-intensive activities such as technology, research and development among others (Quinn, 2000). While in-house contracting remains the primary mode of government service delivery, contracting now takes a second place (Lavery, 1999; Warner and Hedbon, 2001) and this will continue to increase (Greene, 1996). Currently, procurement has expanded beyond the acquisition of supplies and administrative services

but to works as well (Rundquist, 2007; Kettl, 1993, Wise, 1990). Gwilliam, Foster, Archando-Callao, Briceno-Garmendia, Nogales and Sethi (2008) estimate average spending on roads in Africa at nearly 2% of Gross Domestic Product (GDP); the estimated expenditure in the industrialised countries is only about 1% of GDP while expenditure on roads in the fast growing economies ranges between 2% and 3% of GDP. These writers further estimate Uganda's road expenditure at 2.8% of GDP. Ssebanakitta (2013) opines that public procurement reforms in Uganda have seen a strengthened procurement function with private sector participation in road maintenance increasing from 68 % in 2008/09 to 80% in 2011/12 and administrative review applications also greatly reducing from sixteen in 2009/10 to four in 2011/12, which implies increased transparency in the conduct of public procurement. He also notes that the average procurement time reduced by 11% in 2011/12 compared to 2010/11 and the quality of the road works improved greatly during his period of reference. Burningham and Stankevich (2005) observe that without regular maintenance, roads can rapidly fall into disrepair.

A study by The World Bank (as cited by International Labour Organization, 2007) established that as early as 1988, one dollar spent on maintenance would save four spent on rehabilitation; and a constructed road merely creates access while maintenance sustains it, implying better project performance strategy. Quite a number of studies in the eastern and southern region of Africa have observed that projects are generally performing poorly. Nakonde (2012) cites examples of some of these as poor quality construction and low levels of productivity while Lema and Price (1998) hint on use of incomplete designs in preparing tender documents, poor workmanship, late nomination of sub-contractors, delay in payment of contractors and project managers who do not have

appropriate management structures to balance cost, quality, schedule and utility requirements. Rwelamila, Talikhaba and Ngowi (1999) note late arrival of project documents on site, often incomplete with large sections having irrelevant material. Lack of skilled labour was also noted, including poor site supervision skills (Rwelamila, 1996). Anvu (2012) observes that world-over, public service needs exceed resources required for providing them and hence, socio-that economic realities have intensified the search for more innovative ways of delivering public service projects and the need to achieve value for money.

However, literature on public procurement rarely addresses contract writing systems except in passing (Lloyd, 2012:295). This study therefore sought to fill this contextual gap. The study found that 68(83%) of the respondents believed that contract management records were properly kept (filed) during project execution**.** The effort was earlier supported by Oluka (2012:119) who asserted that effective contract management could determine whether or not a government meets its goals and objectives.

Notwithstanding the above, however, it should be noted that the outcome of a procurement process is an enforceable contract. For a contract to be valid under law, the process through which entities enter into contracts should have followed the government procurement procedures. Different stakeholders are involved in procurement and each of the players has a role to play in ensuring that the government of Uganda does not lose taxpayer's money through illegal contracts.

The historical perspective of government contracting can be traced from the 1960s, 1970s up to early 2000 where Government contracting was regulated by the Public Finance Act

Cap. 147. This Act provided for the control and management of all public finances. S. 6 of the Act mandated the Minister responsible for finance to make rules to operationalise government contracting and as a result, regulations No. 37 of 1977 that is; the Public Finance (Tender Boards) Regulations were issued. These regulations established the Central Tender Board whose duty was to carry out public procurement on behalf of the Government entities. This meant that procurement was centralized and all institutions had no role to play save for the Attorney General's Chambers. The Public Finance (Tender Board) Regulations No.37 of 1977 were repealed by the Public Finance Procurement Regulations, S.I No. 64 of 2000 which created the Central Tender Board as a body corporate under the ministry responsible for finance and it became the regulator of all public contracting. All the Government entities were given the mandate to manage their own contracting under the responsibility of the accounting officers. As a result, contracts committees were created and one of the members of the committee was a representative of the Attorney General. This was done in recognition of the 1995 Constitution, specifically Article 119, and so all contracts to which Government is was party or had interest in had to be approved by the Attorney General. However, all the above pieces of legislation were repealed by the Public Procurement and Disposal of Public Assets Act No. 1 of 2003 and the Regulations made there under, i.e., No. 70 of 2003.

The PPDA Act specifies key roles and responsibilities regarding contract management but to-date a lot of challenges are reported in Uganda regarding contract management. The problems noted in this respect include acceptance of goods/services contrary to what was contracted; payment of disproportionate percentages of the contract price which leads to many contractors simply going away without completing the work; failure to

impose set sanctions for breach of contractual obligations and waiver of penalties set in the contract. It is gratifying to note that the law addresses most of these areas. Hence whoever perpetrates any of these irregularities will be violating clearly laid down legal provisions with obvious consequences (Gashirabake, 2012, pp 2-3).

The annual reports of the Auditor General (2011 & 2012) show that a large sum of road maintenance funds remained unutilized nationally, indicating a big absorption problem. The reports further observe incomplete and shoddy works in a number of entities country wide. A baseline report on public procurement systems in Uganda (PPDAA, 2010) as cited by Oluka and Basheka (2012), found notable delays in contract completion times, contractual payments as well as non-appointment of contract supervisors, which led to likely delays as well as possible compromises in value for money. A report on compliance checks on 120 procuring and disposing entities in Uganda (PPDAA, 2008) also asserts that Arua Municipal Council had only few contract documents on files and no records of contract management available on file for review. The reluctance by concerned officials to follow guidelines and other relevant laws is largely incomprehensible and inconceivable.

1.2.2 Theoretical Background

Academic research in contract management is founded on several economic and management theories. The study used Transaction Cost Theory as a background to this study. Transaction Cost Theory tries to explain why companies exist, and why companies expand or source out activities to the external environment. The Transaction Cost Theory supposes that companies try to minimize the costs of exchanging resources with the environment, and that companies try to minimize the bureaucratic costs of exchanges

within the company. Companies are therefore weighing the costs of exchanging resources with the environment, against the bureaucratic costs of performing activities in-house (Businessmate.org, 2010).

According to Coase (1937), every company will expand as long as the company's activities can be performed cheaper within the company (entity), than by outsourcing the activities to external providers (contractors) in the market. He further asserts that firms exist because they reduce the transaction costs that emerge during production and exchange, capturing efficiencies that individuals cannot. Williamson (1981), also observes that a transaction cost occurs when a good or a service is transferred across a technologically separable interface, meaning a transaction cost arises every time a product or service is being transferred from one stage to another where new sets of technological capabilities are needed to make the product or service.

The agency theory, according to Alchian and Demsetz (1972), can further be used to explain the study. It lays emphasis on the governance of a firm's activities by the role of contracts to facilitate voluntary exchange, explaining how best to organise relationships in which one party (the principal/client) determines the work which another party (the agent/contractor) performs to deliver the project as required. This view is further emphasised by Oluka and Basheka (2012), who assert that when a procurement contract is well defined and planned, the principal (municipality) and agent (contractor) find it easy to meet needs of each other in an efficient way thereby resulting into timely execution of the contract. The local Governments (Public Procurement and Disposal of Public Assets) regulations of 2006 section 14 also provides that an accounting officer shall have the overall responsibility for the successful execution of the procurement,

disposal and contract management processes in the procuring and disposing entity and section 105 of the same regulations provides for employment of a supervisor by the procuring and disposing entity (who may be the relevant head of division or a technical officer appointed by the head of department) as its agent responsible for monitoring the progress and execution of the contract and generally acting on behalf of the procuring and disposing entity. These provisions of the regulations can be closely linked to the agency theory with the principal being Arua Municipal Council represented by a supervisor and the agency being the Council's providers in terms of works, supplies and services.

Project performance, on the other hand, was viewed using the theory of constraints project management as advanced by Jacob and McClelland, Jr. (2001). According to the theory, most projects are difficult to manage because of either uncertainty or involvement of the three different and opposing commitments of due date (time), budget (cost) and scope (quality). This scenario often leads to too much rework activity, promised lead times becoming undesired, disagreements over prioritisation and resource commitment, project overlaps, duplication of problems, abandonment of projects without reaping planned benefits, failure to seize important opportunities etc. These theorists show that the challenges raised above can be solved by addressing the three themes of: what to change, to what to change and how to cause the change. These theorists lay down six steps to achieve buy-in as agreeing to have the problem solved, agreeing on the direction of the solution, verifying the solution will deliver the desired results, mitigating significant potential negative side effects, identifying and addressing significant potential obstacles that could block implementation of the solution and enlisting necessary

leadership support. In an effort to meet the three often elusive project commitments of date (time), budget (cost) and scope (quality), the theory provides a solution by giving a comprehensive tool set that addresses: the nature of the project planning, project scheduling, resource behaviour, project visibility and control and finally multiple project synchronisation.

A blend of these three theories adequately guided the researcher in progressing with the work.

1.2.3 Conceptual Background

The researcher considered the main concepts of contract management and project performance in this study. OGC (2002) defines contract management as the process that enables both parties to a contract to meet their obligations in order to deliver the objectives required from the contract. Elsey (2007) classifies contract management into upstream/pre-award activities and downstream/post-award activities. The researcher however intends to concentrate the study on downstream activities, with emphasis on contract administration, relationship management (Elsey, 2007) and contract closeout (Kelman, 1994). US Legal (2013) defines contract administration as the management of contracts made with customers, vendors, partners, or employees and indeed all actions after the award of a contract in order to assure that terms of a contract are complied with. Lord (2011) defines relationship management as the management of interfaces between client and contractor to ensure that the relationship and contract performance are optimized to deliver best value. Kelman (1994) defines contract closeout as a set of activities that begin when the contract has been physically complete, i.e., all services have been performed, works completed and products delivered. Although the contract

closeout procedure entails a number of activities, the researcher intends to limit the study on final inspection, final payment and stakeholder notification/involvement (public procurement directorate, 2008).

In this study, a project is considered as a road maintenance project. Business dictionary (2013) defines a project as a planned set of interrelated tasks to be executed over a fixed period and within certain cost and other limitations while it defines performance as the fulfillment of an obligation. Chan and Chan (2004) outline project performance as the degree of achievement of a certain effort or undertaking which relates to the prescribed goals or objectives that form the project performance parameters of quality, cost and time. Enterprise-pm (2013) defines the scope (quality) of a project as a clear, specific statement of what has been agreed to be performed in a particular project whereas referring to cost of a project as what needs to be applied or assigned to the project in terms of money and effort (resources) in order to make things happen. It further defines time/schedule of a project as the amount of time required to complete each and every component or task of a project so as to estimate the duration of the project as well as cost/resources required for a particular project.

1.2.4 Contextual Background

One of the mandates of Arua Municipal Council (AMC) is to maintain all roads in the Municipality (Local Government Act, 1997, chapter 243, part IV, section 30, sub-section 1). Uganda Road Fund (URF) estimates that for Financial Year (FY) 2010/2011, only 60% of the municipality's tarmac roads were in fair-to-good condition while less than 20% of the gravel roads were in a fair condition (URF Report, 2013). Related to these

findings, Arua Municipal Council entered a four months contract for periodic maintenance of Oluko road with Ms Olanzicon Services Limited on 3rd March 2010 at a sum of 574,703,600/=. The contract was however not completed until 31st Jan 2011; six months after the planned completion date (URF Report, 2013). Workmanship concerns, especially at access junctions of Oluko road, were also raised in the report. Such road maintenance performance problems could probably have occurred due to poor contract management in Arua Municipality.

Table 1 below further illustrates performance of road maintenance in Arua Municipality over the study period in terms of achievement of maintenance targets.

Table 1: Performance of Road Maintenance in Arua Municipality from 2010 to 2013

Financial Year (FY)	Planned Length (km)		Actual Length Maintained (km)		Performance Level (%)	
	Routine Road Maintenance (RRM)	Periodic Road Maintenance (PRM)	RRM	PRM	RRM	PRM
2009/2010	0.0	1.8	0.0	1.7	Nil	94.4
2010/2011	3.1	7.9	3.0	4.6	96.8	58.2
2011/2012	34.8	18.4	24.7	16.8	71.0	91.3
2012/2013	45.6	12.4	43.7	6.0*	95.8	48.4

Source: Annual Road Maintenance Plans for Works in AMC (2009-2013).
*Projected to year end

Table 1 shows a comparison between length of Arua Municipality's road network planned for maintenance and actual length maintained during the study period. From table 1, it can be mathematically deduced that the Municipality's performance for routine road maintenance periodic road maintenance respectively averaged 88% and 73% during the study period, thus falling short of the intended 100% project performance level

required. The researcher pursued Arua Municipal Council's persistent moderate performance in road maintenance levels, especially for gravel surface roads, and inability to fully achieve planned targets which possibly could be as a result of poor contract management.

1.3 Statement of the Problem

When the road fund Act (2008) was operationalised in 2010, many local government entities had been largely incapacitated, often spending their entire annual central government road grants on maintenance of only one or two kilometers of the road network. Due to the reforms made in the sector, road maintenance funding to the Municipality rose to Ushs. 682,619,301 during FY 2010/2011 (Annual road maintenance plan, 2010), expected to achieve 100% maintenance coverage. Arua Municipal Council therefore embarked on maintaining additional length of the road network, averaging 43km to 53km between FY 2011/2012 and FY 2012/2013.

Despite the achievements made in road maintenance performance during the study period, many road links in Uganda are not motor-able due to probable improper contract management. Nearly 40% of Arua Municipality's road network remains either poorly maintained or unmaintained. Critical roads in the central business district such as Arua Avenue (0.8km) and Weather-head park lane (2.8km) remain riddled with potholes. An audit by Uganda Road Fund on Arua Municipal Council also found that there were no records of tests on materials/works, work measurements, site handovers, completion certificates or commissioning/final handover of completed projects, further noting that no value for money audits were carried out as required by the Local Government

(Accounting Regulation) 2007, Section 9(2)e (Audit Report, 2013). These observations can be adequately attributed to gaps in contract administration, relationship management and contract closure activities, as dimensions of contract management.

If road maintenance resources being invested in contracts are not adequately managed, Government of Uganda is likely to continue losing colossal amounts of money in the road sector without an equivalent level of actual service delivery, thus impacting negatively on people's livelihood and economic activity. Sabiiti, Muhumuza and Tumutegyereize (2013) confirm that only 29.4 % of contracts are completed within the original contract time. This indicates that contract management is a probable area of poor performance since late completion affects service delivery and usually results in cost overruns. It is therefore against this background that the researcher studied the relationship between contract management and performance of road maintenance projects in Arua Municipality.

1.4 Purpose of the study

The purpose of this study was to examine the relationship between contract management and performance of road maintenance projects in Arua Municipality.

1.5 Objectives of the study

The study was guided by the following objectives:-

i. To establish the relationship between contract administration and performance of road maintenance projects in Arua Municipality.

ii. To establish the link between relationship management and performance of road maintenance projects in Arua Municipality

iii. To establish the relationship between contract closure and performance of road maintenance projects in Arua Municipality.

1.6 Research Questions

i. What is the relationship between contract administration and performance of road maintenance projects in Arua Municipality?

ii. What is the link between relationship management and performance of road maintenance projects in Arua Municipality?

iii. What is the relationship between contract closure and performance of road maintenance projects in Arua Municipality?

1.7 Hypotheses of the study

i. There is no relationship between contract administration and performance of road maintenance projects.

ii. There is no link between relationship management and performance of road maintenance projects.

iii. There is no relationship between contract closure and performance of road maintenance projects.

1.8 Conceptual Framework

The conceptual framework for this study shows a relationship between contract management (independent variable) and project performance (dependent variable) with reference to road maintenance in Arua Municipality, as indicated in figure 1.

Independent Variable (IV): **Dependent Variable (DV):**

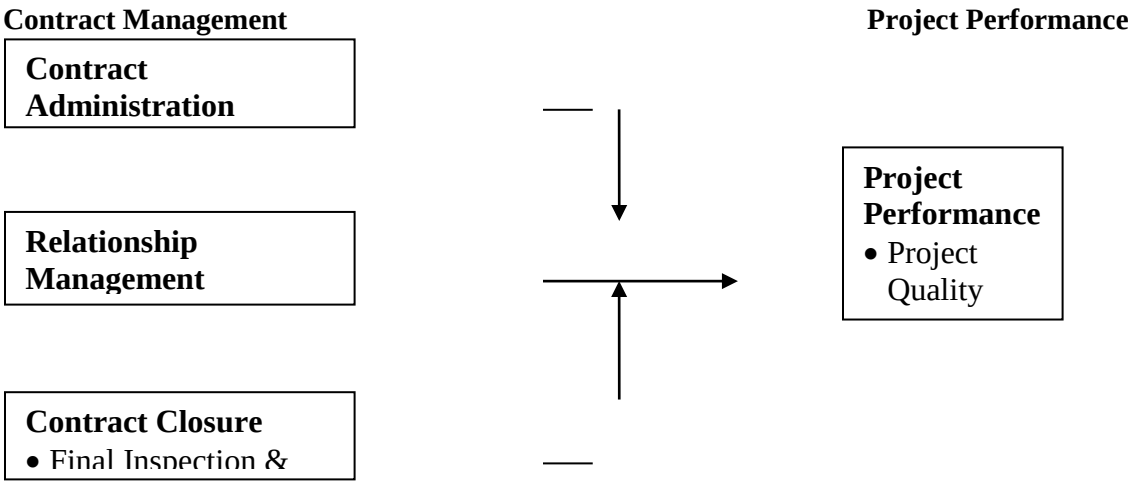

Figure 1: Conceptual Framework of Contract Management and Performance showing relationship between contract management and performance of road maintenance projects

Source: Adapted from Chan & Chan (2004), Elsey (2007), Public procurement directorate (2008) and modified by the researcher

The independent variable of study (contract management) had three dimensions namely contract administration (with indicators payment mechanism and variations to the contract), relationship management (with indicators communication channels and dealing with disputes) and contract closure (with indicators final inspection/payment and stakeholder involvement). On the other hand, the dependent variable (performance) was the main focus of this study. The researcher studied performance of road maintenance projects through three indicators viz: project quality, cost and time.

It is worth noting that regular road maintenance financing is a key moderating variable that could have possibly affected the outcome of this study. However, the researcher focused the study on the relationship between contract management (with dimensions of

contract administration, relationship management and contract closure) and project performance (with dimensions of quality, cost and time).

1.9 Significance of the study

This study is significant because it is likely to highlight effects of contract management on road maintenance project in AMC, establish competencies of contract managers and administrators of government (Municipal) projects and guide stakeholders in efforts to fill any gaps identified, by proposing appropriate mitigation measures against possible unsatisfactory performances of projects in the Municipality. The study is also likely to establish the consumer's perception of level of service delivery in the road sector and in effect promote a bottom-to-top approach to planning and implementation of road maintenance activities in Uganda. It is hoped that findings of this study will be of use to different organisations, stakeholders, policy makers interested in improved contract management.

1.10 Justification of the study

This study is justified because its intension is to establish likely causes of alleged poor performance of road maintenance projects so as to propose amicable solutions in order to achieve economy, efficiency and effectiveness, measured in terms of quality, cost and time.

1.11 Scope of the study

Geographical scope: The geographical scope of this study covered Arua Municipality. The intention of the researcher was to generalise these findings later on.

Time scope: Time scope of the study covered the period 2010 to 2013. This is the period during which government agencies have received funding for road maintenance from Uganda Road Fund.

Content scope: The content scope of the study covered contract management and project performance. The study further explored contract administration, relationship management and contract closure as dimensions of contract management (independent variable). On the other hand, this study covered details of project performance, which are project quality, cost and time (dependent variable).

1.12 Operational Definitions

Theory: This refers to a strongly held view through which a disturbing situation can be explained

Principal: This is a party to a relationship described in the agency theory, such as a client or stakeholder

Agent: This is a party to a relationship described in the agency theory, such as a broker, contractor or company's executives

Agencies: These are administrative divisions of government that include local governments and urban councils of Uganda as well as Uganda National Roads Authority

Contract: This refers to a legally binding agreement between two or more competent parties

Project: This is a planned set of interrelated tasks to be executed over a definite period and at a specific cost and other limitations, including quality and quantity

Performance: This refers to the accomplishment of a task with respect to preset standards of accuracy. Transaction Cost: A transaction cost is a cost incurred in making an economic exchange, with a supposition that companies try to minimize the costs of exchanging resources with the environment and to minimize bureaucratic costs of exchanges within the company.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter seeks to explore related literature about contract management and road maintenance project performance in Uganda, drawing various contrasts and similarities. It is presented according to the three objectives of the study. The chapter includes theoretical review, conceptual review and an actual review of literature structured according to the themes of study.

2.2 Theoretical Review

The study used transaction cost theory and agency theory to understand the concept of contract management. In economics and related disciplines, a transaction cost is a cost incurred in making an economic exchange (Akbari, 2005). Examples cited include search and information costs, bargaining costs, policing and enforcement costs and taking appropriate action (often through the legal system) if this turns out not to be the case. Akbari (2005) further submits that transaction costs consist of costs incurred in searching for the best supplier/partner/customer, the cost of establishing a supposedly "tamper-proof" contract, and the costs of monitoring and enforcing the implementation of the contract. Vannoni (1999) also agrees that transaction cost theory is successful in explaining why firms internalise some stages of the manufacturing process.

Agency Theory also explains how to best organize relationships in which one party determines the work (principal) while another party does the work (agent). For instance, in corporations, the principals are the shareholders of a company, delegating to the

agent (company management), to perform tasks on their behalf. To determine when an agent does (and does not) act in their principal's interest, the standard of "Agency Loss" has become commonly used. Agency loss is the difference between the best possible outcome for the principal and the consequences of the acts of the agent. (Seven Pillars Institute, 2013). These two theories pointed to a scenario of ensuring best practice in contract management.

On the other hand, the theory of constraints (TOC) project management was used to view project performance. This theory asserts that most projects are difficult to manage because of two things, namely involvement of uncertainty, and involvement of three different and opposing commitments of due date (time), budget (cost) and content (quality). The Theory of Constraints Project Management provides a comprehensive solution to address these root causes and coping mechanisms, including: - a robust planning process, a more effective scheduling process, a methodology for introducing work that actually leads to increased capacity, execution processes that provide excellent project control, visibility and decision support, and work behaviors that are more conducive to good project performance (Jacob and McClelland Jr, 2001). This theory thus linked the study to three commitments of time, cost and quality.

2.3 Conceptual Review

In this study, the researcher's conception was the relationship between contract management (independent variable) and project performance (dependent variable) with reference to road maintenance in Arua Municipality, as already discussed in chapter 1. Dimensions of the independent variable of study were contract administration,

relationship management and contract closure meanwhile the dependent variable was visualized through project quality, cost and time as indicators.

2.4 Thematic Review

The researcher grouped and discussed the literature sources in terms of themes or topics formulated out of the objectives of this study, as presented below.

2.4.1 Contract administration and project performance

Kelman (1994) defines contract administration as a set of activities performed by government officials (client's representatives) after a contract has been awarded to determine how well the government (client) and the contractor perform to meet the requirements of the contract. While strategizing to ensure that contract management successfully takes the right course, all the parties involved must keenly pay attention to all provisions in the given or existing contract (Sanders, Locke, Moore, & Autry, 2007; Laratta (2009) and Saunders (2000) as cited by Oluka and Basheka (2012). Successful and efficient contract management practices are those that meet the needs of the company's (client's) stakeholders, achieve optimum conditions and value in regard to the allocation of scarce tax payers resources, ensure rational and efficient use of funds available, stimulate valuable competition and manage the risk and potential liabilities to the buyer thereby improving service delivery. Thus enforcement of existing regulatory measures must be enforced to avoid pitfalls of inefficient contract management process and eventual poor service delivery (project performance). The people in charge of the contracts need to play an important and meaningful role in ensuring that the company's (client's) contractual goals are fully achieved at the minimum cost possible. As a result,

consideration should be given to address the questions in the procurement contract literature as to how the supplier can provide the buyer with sufficient flexibility while not assuming all the risk due to demand uncertainty (Golovachkina and Bradley, 2002) as cited by Oluka and Basheka (2012).

Quite a number of writings reviewed seem to blame the client's team for most of the performance shortfalls encountered in management of projects. Mansfield, Ugwu and Doran (1994) argue that the problem of untimely financing and delayed payment for completed works, poor contract administration, change in site conditions and shortages of materials are the four most important causes of delays and cost overruns in public highways and building projects in Nigeria. Alinaitwe (2007) also links poor performance of construction projects in Uganda to poor contract administration, arguing that lack of regular meetings between client and contractor leads to client's failure to track project developments, thereby contributing highly to substandard projects and variation of prices. Alinaitwe (ibid) further attributes the delays of projects to delays in interim payments to a contractor by the client. He submits that delayed payments to contractors often demoralize the contractor and therefore reduce speed of project activities. Ssebanakitta (2013) argues that despite the benefits the public procurement system has brought to the road sector, there are a number of challenges such as lack of capacity by the domestic construction industry; overwhelming stakeholder/public expectations; delayed approvals by statutory agencies; uncoordinated and repetitive audits by the various overseeing bodies (government agencies) reducing the sector's focus on its day-to-day procurement and contract management activities as most staff spend time attending to audit queries.

He further states that failure to appreciate that variations in civil works are more of the norm than the exception (so that approval may be required retrospectively) and lack of PPDA accredited procedure to address road sector specific issues have also created challenges. Other challenges cited by the author include extensions of time-where contractors submit claim for time extension at the last minute of the contract, understanding when the objective of the contract is accomplished or the time stipulated in the contract expires, what the market price of a road contract is, misunderstandings and misinterpretations of contract price adjustment or variation of price by the different stakeholders and the PPDA procedure's lack of clear provisions on resolutions of claims and disputes by providers.

There are, however, other authors that have laid the blame of poor project performance on contractors' failures and shortfalls. Studies undertaken by Ogunlana et al. (1996) in Thailand and Kaming et al. (1997) in Indonesia also agree with this claim, blaming most project delays on contractors. Majid and McCaffer (1998), having conducted a literature survey on causes of project delays, also find that 50% of the delays could be categorized as in-excusable delays for which contractors are held responsible. Other writers reviewed have identified weaknesses on both sides of the project cycle. Chan and Kumaraswamy (1997) identify some common and significant factors affecting both building and civil engineering projects as poor site management and supervision, low speed of decision making involving project teams, client initiated variations, other variations of works and inadequate contractor experience. Love and Smith (1999) equally raise concern about the absence of quality focus throughout the supply chain in the construction (project), often

resulting in rework, which invariably takes the form of changes, errors omissions and as a result adversely affects project performance. Thai (2004); Lysons and Farrington (2006) assert that contract administration focuses on achievement of the three goals of product quality, delivery on time and within the budget. This idea is further supported by Xiao and Proverbs (2002), who assert that contractor performance has long been defined in terms of cost, time and quality, and is therefore critical to the success of any construction project since it is contractors who convert designs into reality. They argue that improved contractor performance leads to enhanced client satisfaction, and hence an improvement in the contractor's reputation and competitiveness in the market. The writers further argue that the client's long term interests lie in the quality of the project, insisting work performed must conform to specifications established for the project. They however caution against low-cost speedy construction being achieved at the expense of quality of the project. This researcher therefore notes that studies reviewed touch on the shortfalls of both contactor and client but are largely skewed towards construction projects, leaving a gap for road maintenance projects. This is an area that required further studies. Findings of this study show that in a majority of cases, contractors implemented road maintenance works according to specifications, contractors' payments for road works followed relevant public procurement (PPDA) guidelines and though common and often genuine, variation orders in road maintenance projects led to increased costs, increased project completion time, delayed procurement processes and defective quality of work.

2.4.2 Relationship management and project performance

A study by Coltman, Devinney and Midgley (2009) that examined the impact of customer relationship management (CRM) on firm performance reveals a positive and significant path between a superior CRM capability and firm performance. This study shows that CRM initiatives that jointly emphasize customer intimacy, cost reduction and analytic intelligence outperform those that take a less balanced approach. Soliman (2011) also finds a positive relationship between CRM and performance. Smith et al. (2004) are concerned that the financial risk and reason for dispute and arbitration mainly arises from the shortage of necessary capital, often resulting in delayed payments by clients to contractors as well as delayed payments by contractors to sub-contractors or contractors' employees. The writer further indicates that possibilities for disputes, arbitrations and other risks arising from time, cost and quality slippage are largely a result of failure to execute sound construction management and administration. However, according to Dew (2008); Thai (2005) and Bolton (2006) as cited by Oluka and Basheka (2012), contract management challenges in both public and private organisations are inevitable in any contractual relationship due to lack of transparency and poor record keeping. Thai, 2004) contends that successful contract management and completion is often defined, as procurement of the right item, in the right quantity, for the right price, at the right time, with the right quality, from the right source (project performance).

William (2006) argues that purchasing has the ultimate responsibility of establishing and maintaining good supplier relationships. According to this author, the type of relationship is often associated with the length of a contract between buyers and sellers. He argues

that keeping good relations with suppliers is becoming increasingly recognized as an important factor in maintaining a competitive edge-with many companies often adopting their suppliers as partners, especially in instances where the suppliers are reliable, provide high quality goods, (including works and services), maintain precise delivery schedules and are flexible in cases of alterations to specifications. Elsey (2007) also argues that as the supplier/provider gains greater understanding of the organization's business needs and style and develops a level of confidence and trust, the supplier/provider will be more willing to be proactive and innovative to bring forward improvements and savings to mutual benefit, more willing to share problems, plans and concerns, more willing to negotiate and more confident in investing for the longer term. He further guides that chosen requirements underpinning the performance measures should form the framework on which information needs and flows and contract management teams, skills, processes and activities are developed and improved in conjunction with the supplier/provider, seen as a proactive means of improving the performance of a supplier/provider. Acharya and Young (2006) also argue that claims, disputes and omissions adversely affect the performance and quality of the finished product. Arguments by the various writers indeed emphasize the need to keep close ties between the contracting parties. However the extent of this relationship and its relevance to road maintenance management required more research. Findings of this study show that in a majority of cases, site instructions and other communications between council and contractors was done in writing, concerns of contractors and suppliers were heard by the client, site meetings for road maintenance projects often organised, site instructions issued by the projects manager. Each road project site had a clerk of works regular and routine feedback was also given to suppliers

or contractors concerning their performance of road maintenance. Disputes occurred regularly in contract management processes of Arua Municipal Council, affecting final performance level of road maintenance projects, Arua Municipal Council resolved contract disputes amicably, contractors informed the client about likely incidences that could lead to disputes and there were cases of disputes in road maintenance in the Municipality that needed arbitration or litigation.

2.4.3 Contract closure and project performance

A contract is considered closed when it is physically as well as administratively completed, the end result of the closeout process being a closed contract (HHS, 2012). PPDA Regulation 264 (1) & (2) mandates a contract manager or a procurement and disposal unit (PDU) to submit a recommendation for termination of contract, together with a copy of the contract, to a contracts committee (CC) stating personnel details, reasons for termination, any actions earlier taken to prevent the scenario, contractual grounds for termination, cost implications, if any, and other relevant information.

Shen and Walker (2001) allude to time management as an important part of the construction management process, thus an important factor of closeout, aimed at ensuring timely completion of the project. Acharya and Young (2006) also point out that any errors made in the process of meeting quality in technical performance or time commonly result in loss to a contractor or dissatisfaction of the client. HHS (2012) urges contract managers to ensure that contracts are closed in a timely and effective manner in order to avoid any negative ramifications, financial or otherwise. The writer further argues that delayed closure may lead to difficulty in closing a contract due to, say, contractor

bankruptcy, loss of business or having lost critical human resource base over time. The author further contends that if closeout is delayed, the Government (client) may also not be able to obtain a true accounting of funds invested. These arguments seem to point out that the contract closeout process has a considerable effect on the final output quality.

Contract closure concerns the activities associated with closing the project down, whether in accordance with the contract or as a result of early termination (Elsey, 2007). Lee (1996) guides that in cases where arbitration does not work and termination becomes inevitable, the consequences of termination must be taken into account and appropriate provisions made in the outsourcing contract, covering issues like buy-back arrangements for equipment, transfer of relevant third party contracts and leases, transfer of staff, assurance of cooperation from the vendor. Thai (2004) recommends that there should be an explicit agreement in relation to the termination of services in cases where service levels are not met or when the vendor goes into liquidation. Ackerman (1996) further notes that sometimes it is the service failures themselves which cause a termination of the partnership, often occurring due to financial reasons or the apparent inability of the contractor to satisfy the service levels required by the buyer and hence the partnership is ended so as to satisfy the requirements of the contract of service. Winters (2005) advises that a service provider in the public sector is guided by financial controls/obligations, while availing a list of owned and leased equipment, turnover of technical personnel, training and user guides, publication of final performance metrics, inventories and issuance of reconciled final financial statement (statement of account). Young (2008), in a study on health services in United Kingdom, finds that contract termination occur mainly due to contractor's inability to perform the work to the required outcomes due to

under pricing or misunderstanding the specifications. Non-inclusion of all transaction costs was also noted to have affected efficiency.

On the other hand, contracts can be ordinarily closed out as per agreement signed as previously observed. Thai (2004) notes that contractors usually honor their contracts; thus triggering closeout the contract. This exercise involves many activities and requirements such as meeting all contractual issues, accommodating any changes to the final project document, ensuring all deliverable items are received, all bailed /hired equipment and other classified documents are returned, and the final payments are made. Zhou, et al. (2007) concur with this submission, reporting that in China, all contracts are required to be audited at practical completion stage. This is ideally a final account audit, requiring thorough investigation by the client. The audit identifies final project cost and reconciles the makeup of the final price, while noting any significant variations for further verification with authorities.

It is worth noting, however, that detailed studies on contract management have been quite rare to come by in the road maintenance sector and so the effect of contract management on performance in these circumstances remained largely unknown. Findings of this study show that in a majority of cases, road maintenance projects were not completed on time, shorter construction time led to improved client satisfaction whereas increased construction time led to a drop in quality standards due to rushed work.

2.5 Summary of the literature review

The literature reviewed here, seems to indicate that contract administration, relationship management, contract closure indeed have respective relationships with project

performance (Alinaitwe, 2007; Soliman, 2011 and Young 2008). However, the extents of these relationships, with specific emphasis on road maintenance, have not been established in the various studies reviewed by the researcher. There was hence a need to carry out a research to establish the nature of relationships between contract management including its dimensions of study and road maintenance performance in Arua Municipality. Findings of this study showed a highly positively relationship of 76.1% between contract management and performance of road maintenance projects in Arua Municipality by multiple Pearson's Correlation. This relationship was further emphasised by a multiple regression between the study dimensions of contract management and performance of road maintenance projects in Arua Municipality which showed that contract management had a moderate significance and effect on performance of road maintenance projects in Arua Municipality as explained by the R Square of 0.588, meaning a change in project performance could be explained by contract management up to 58.8%.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

In this chapter, the researcher explained the various steps that were taken to execute the intended study. The chapter contains details of the research design, study population, method of determination of the sample size, sampling techniques and procedure, data collection methods, data collection instruments, quality control mechanisms, procedure of data collection, data analysis and measurement of variables.

3.2 Research Design

The study used a cross sectional survey design because it enabled collection of information from the field over a short period of time from a sample at a particular time. The study obtained information about preferences, attitudes, practices, concerns etc. of a group of people, as supported by Amin (2005). A triangulation (mixed method) of quantitative and qualitative research techniques was adopted by the study so as to exploit the synergies offered by use of different methodologies (Barifaijo, Basheka and Oonyu, 2010) and embrace consistency of findings through use of different instruments tested to complement each other, as cited by Sekaran (2003). This research design enabled a snapshot study of the relationship between contract management and road maintenance project performance in Arua Municipality.

3.3 Study Population

The study population comprised people of different categories of knowledge in Arua Municipality. It consisted of the Mayor (1), Town Clerk (1), members of technical planning committee, TPC (10), municipal councilors (12) and staff from related departments such as works and technical services (7); finance, planning and internal audit (9), the procurement and disposal unit (PDU) and contracts committee (4), road contractors (2) and local council 1 chairpersons (44) *(Source: primary data).*

3.4 Sample Size and Selection

The sample size was determined using table 2 below. The sample size of 102 respondents was selected by adding up 58 key informants (purposively selected from seven categories of the population) to 44 respondents (selected from among the Municipality's Local Council 1 leaders) by simple random sampling technique. The formula used for determining sample size for the given population was as follows:

$s = X^2 NP(1-P) \div d^2 (N-1) + X^2 P(1-P)$ where by s = required sample size, X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level, N = the population size, P = the population proportion and d = the degree of accuracy expressed as a proportion (Krejcie and Morgan, 1970).

Table 2: Sample Size and Selection Frame

S. No.	Target Population Category	Accessible Population (N)	Sample Size (s)	Sampling Technique
1.	Mayor & Town Clerk	02	02	Purposive
2.	Members of TPC	15	15	Purposive
3.	Municipal Councilors	13	13	Purposive
4.	Works/Technical Services	09	09	Purposive
5.	Finance, Planning & Internal Audit	10	10	Purposive
6.	PDU and Contracts Committee	05	05	Purposive
7.	Road Contractors	04	04	Purposive
8.	LC I Chairpersons	50	44	Simple Random
	Total	**108**	**102**	

Source: primary data

Table 2 indicates the sample selection frame used to select the sample used in the study. The target population categories included the top management comprising mayor and town clerk, members of technical planning committee, municipal councilors, staff members from works and technical services department, staff members from finance, planning and internal audit department; staff members from the procurement and disposal unit, road contractors and local council 1 chairpersons. It is from the accessible population (N) that samples (s) were drawn using either purposive or simple random sampling techniques.

3.5 Sampling Techniques and Procedure

This study employed purposive and simple random sampling technique to select the required sample. Oliver (2006) defines purposive sampling as a form of non-probability sampling in which decisions concerning the individuals to be included in the sample are taken by the researcher, based upon a variety of criteria which may include specialist

knowledge of the research issue, or capacity and willingness to participate in the research.

Purposive sampling technique was relevant for this study because of its ability to ensure selection of useful cases. It gave opportunity for the researcher to actively select the most productive samples to answer the research questions. Elements were handpicked because they were either informative or had the required characteristics. Simple random sampling technique was used in the category of local council 1 chairpersons whereby their sample was drawn from a known population in such a way that every possible sample of similar size had the same chance of being selected. Garton (2012) defines a simple random sample as a sample of size s drawn from a population of size N in such a way that every possible sample of size s has the same chance of being selected.

3.6 Data Collection Methods

Two methods were used to collect data, namely questionnaire surveys and face-to-face interview.

3.6.1 Questionnaire Surveys

According to Peil (1995), questionnaire surveys are large-scale surveys involving literate people. The purpose of using this data collection method is that the targeted respondents are literate people who often prefer privacy and anonymity. Milne (1999) adds that responses are standardised and hence more objective. He identifies some disadvantages as possibility of participants forgetting important issues due to occurrence of the questionnaire surveys after the event and difficulty of handling misinterpretation of some questions by participants (for closed-ended questionnaires). Milne (ibid) also suggests

respective mitigation measures as involvement of knowledgeable people and piloting questions on other people with similar characteristics.

The researcher used this method for collecting data from members of technical planning committee (TPC), municipal executive committee (MEC), other councilors and staff from related departments and road contractors. Respondents were urged to reply honestly and told why the information was being collected and how the results would be beneficial. Identity of the respondent on the questionnaire was also made optional.

3.6.2 Interviewing

Kumar (2005) defines interviewing as the person-to-person interaction between/among two or more people with a specific purpose. Using face-to-face interviews for collecting information is preferred when social cues of the interviewee (such as voice, intonation, body language) are very important information sources for the interviewer, when the interviewer has enough budget and time for travelling or when the interviewees live near the interviewer and standardization of the interview situation is important (Opdenakker, 2006). Some shortfalls of interviewing method include requirements for training and practice for the interviewer, time and confidentiality for the exercise.

The interviewer also has a potential to influence, cue, bias or distort the interviewee's responses (Hidayah, 2011). The researcher used this method to collect data from the Mayor and Town Clerk because of its ability to clarify questions and even explore further into some issues being studied. A professional research assistant was hired to handle the sampled officials.

3.7 Data Collection Instruments

The researcher used questionnaires and interview guides as the tools for data collection. This was in agreement with the nature of data required, time available and objectives of the study. The researcher concentrated on views, perceptions, opinions, feelings or attitudes of selected respondents. Bell (1993); Toliatus and Compton (1998) as cited by Oso and Onen (2009) opine that the kind of information required can best be collected through the questionnaires and interview guides.

3.7.1 Questionnaire

The researcher used questionnaires which covered all aspects of the study variables on Arua Municipality (see appendix 1). Section A of the questionnaires covered demographics while sections B and C had closed-ended questions. Likert Scales as laid out by Amin (2005) were designed to be used with categories of response continuum stating strongly agree (5), agree (4), undecided (3), disagree (2) and strongly disagree (1) (Amin, 2005 p265).

3.7.2 Interview Guide

This instrument was used to conduct interviews with two individuals believed to have important information for detailed understanding of the subject matter, but with limited time to fill the questionnaire. The guide was intended for the top two council officials, the Mayor and Town Clerk as interviewees and contained open-ended questions.

3.8 Validity and Reliability

These two terminologies emphasise data quality control.

3.8.1 Validity

Validity refers to the extent to which results can be accurately interpreted and generalised to other populations (Oso and Onen, 2008). These writers further define validity as the extent to which instruments measure what they are intended to measure. The researcher gave instruments to two experts/judges to evaluate the relevance of each to the objectives of the study. The judges then rated each item on a scale of very relevant, VR (2) and not relevant, NR (1). Validity was then determined using content validity index (CVI), which is defined as average number of items rated very relevant by both judges divided by the total number of items in the questionnaire, mathematically expressed as CVI = n/N, where n is the average number of items rated very relevant and N is the total number of items in the questionnaire.

Table 3: Validity rating of questionnaire by judges

Category	Number of items rated very relevant (VR)	Number of items rated not relevant (NR)	Total Number of items in the questionnaire	Percentage of items rated very relevant (%)
Judge 1	61	3	64	0.95
Judge 2	63	1	64	0.98
Average Score	62	2	64	0.97

Source: primary data

Table 3 above shows the validity rating of the research questionnaire by the two judges. Using the formula above, CVI was obtained as 0.97. Amin (2005) considers an instrument valid if its CVI is greater than 0.7. The instrument was therefore considered valid.

3.8.2 Reliability

Reliability of an instrument is the ability of the instrument to collect the same data consistently under similar conditions (Amin, 2005). Instruments were pre-tested in Arua District Local Government which is another public entity with similar projects, to determine their reliability. The instrument was pilot-tested on 10 respondents and the scores of the responses from the pre-test analysed using Chronbach's Alpha (α) coefficient due to likelihood of options for answers exceeding three, that is, Likert scale of 5 continuums.

Table 4: Reliability statistics for questionnaire pretest

Cronbach's Alpha	N of Items
0.759	65

Source: primary data

Table 4 above indicates the reliability coefficient of the instrument pretested on 10 questionnaires. The α coefficient was found to be 0.759 using Cronbach's Alpha. Amin (2005) considers an instrument reliable when its reliability coefficient is greater than 0.7. The instrument was therefore considered reliable.

3.9 Procedure of Data Collection

The researcher developed and completed a proposal within the first four months of the programme, under the guidance of the two Supervisors. Thereafter, permission was sought from the Town Clerk of Arua Municipal Council to proceed with the study. The research instruments were then pilot-tested successfully, followed by the researcher proceeding to collect data. The researcher distributed the questionnaires to the respondents in hard copies through knowledgeable research assistants. Face-to-face

interviews were administered through a trained research assistant while the researcher reviewed all sampled documents physically. Collected data was then assembled, analysed and presented accordingly.

3.10 Data Analysis

Data was analysed both quantitatively and qualitatively.

3.10.1 Quantitative Data Analysis

Sekaran and Bougie (2010) guide that the first step in data preparation is data coding, involving assignment of a number to the participants' responses so as to have them entered into a data base. First, coding sheets were used to transcribe this data from the questionnaire, followed by the data being keyed-in. This method avoids flicking through all questionnaires for each item, thus minimising confusion, especially when the questions are many and the number of questionnaires is quite large. Following this stage, questionnaire items were coded in respect to the study variables they related to. The items were then entered into the statistical package for social sciences (SPSS) 16 for appropriate transformation. Data was then summarised using descriptive statistics so that the researcher would meaningfully describe a distribution of scores of measurements using a few statistics (Mugenda & Mugenda, 2003). Descriptive statistics involved computation of frequencies, percentages, means and standard deviations to determine the respondents' views on each of the study variables whereas the Pearson's correlation technique was used to determine the relationship and dependence between variables while inferential statistics involved regression analysis. Results were then summarised and tabulated for easy analysis and interpretation.

3.10.2 Qualitative Data Analysis

Content analysis was used to edit the qualitative data from interviews and have it organised into shorter meaningful statements. This analysis was aimed at collecting information on the themes in question from the responses. Responses were then analysed with the purpose of identifying common trends of agreement or disagreement on the issues being discussed (Amin, 2005).

3.11 Measurement of Variables

Different variables can be measured at different levels (Bell, 1997). Both nominal and ordinal scales of measurement were used in the questionnaire. The nominal scale of measurement was used in the demographics section of the study area to record qualification (level of education), which has some common sets. According to Mugenda & Mugenda (2003), nominal scales are assigned only for purposes of identification but do not allow comparisons of the variables being measured; that is to say, contract management and project performance in the Municipality's road maintenance sector.

The researcher used an ordinal scale to measure contract management and performance of road maintenance projects in Arua Municipality. Contract management was measured through three dimensions including contract administration, relationship management and contract closure. Contract administration focused on the Municipality's contract payment mechanism and variations; relationship management focused on communication channels and handling disputes while contract closure focused on final inspection, payment and stakeholder involvement. On the other hand, measurement of performance of Arua Municipality's road maintenance projects was focused on quality of work done, project cost and time spent.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

This chapter contains a presentation of data, analysis of the data and interpretation of the results. Its arrangement follows an introduction, the response rate, results on the background characteristics of the respondents and results on the substantive objectives covering descriptive results, correlation results and regression results.

4.2 Response Rate

Table 5 below shows a tabulation of responses received, which led to computation of the overall response rate for the study.

Table 5: Data collection instruments response rate

S. No.	Data Collection Method	Planned Number of Respondents	Actual Number of Respondents	Response Rate (%)
1.	Questionnaire Survey	100	88	88.0
2.	Interview	02	02	100.0
	Total	102	90	88.2

Source: primary data

From the table, it can be noted that 100 questionnaires were distributed by the researcher to sampled respondents in hard copies, following the selection frame; and 88 questionnaires were received from respondents. The same table shows that the planned interviews were both held. The overall response rate for the study was therefore 88.2%. According to Amin (2005), a response rate of 70% is a good representation of the survey population. Therefore, the researcher proceeded to present, analyse and interpret the

results. The 14 questionnaires could not be retrieved because at the time of data collection, some of the sampled respondents were away from the Municipality for private, business or official reasons. The researcher was also able to conduct interviews with the two top leaders of the Municipality, the Mayor and the Town Clerk, as planned.

4.3 Results on the Background Characteristics of Respondents

The purpose of obtaining background information was to check the authenticity of respondents. The researcher omitted other aspects of demographics such as age, gender or level of income because both the independent variable and dependent variable of study were cross-cutting. The performance of road maintenance projects was considered relevant across the divides of age, gender or level of income. This study concentrated on level of education of the respondents since knowledge of literacy levels of the respondents was relevant to establish their understanding of the questionnaire. Table 6 below shows the level of education of the respondents in this study.

Table 6: Level of Education of the respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary	12	13.6	14.0	14.0
	Secondary	14	15.9	16.3	30.2
	Certificate	17	19.3	19.8	50.0
	Diploma	21	23.9	24.4	74.4
	Degree	16	18.2	18.6	93.0
	Others (Please specify)	6	6.8	7.0	100.0
	Total	86	97.7	100.0	
Missing	System	2	2.3		
Total		88	100.0		

Source: primary data

Table 6 shows that a majority of the respondents 21(24.4%) had attained a diploma as their highest level of education. This was followed by 17(19.8%), 16(18.6%) and 14(16.3%) of respondents who had respectively attained a certificate, degree and secondary as their highest level of education. Only 12(14.0%) and 6(7.0%) of respondents had respectively attained primary and others as their highest level of education. These findings revealed that respondents had generally attained a fair literacy level to understand the research instruments, therefore providing reliable data. Other background characteristics of relevance include:-

4.4 Research Question Number One: The Relationship between contract administration and performance

4.4.1 Descriptive Statistics on payment mechanism and contract variations

The researcher considered payment mechanism and variations to contracts as two dimensions of contract administration for this study. This consideration was to know whether contracts are administered properly. Table 7 below indicates descriptive statistics (findings) from respondents on various statements on payment mechanism.

Table 7: Responses on payment mechanism

		5	4	3	2	1
1.	Arua Municipal Council ensures prompt payment of contractors and suppliers	25(28.7%)	35(40.2%)	5(5.7%)	20(23.0%)	2(2.3%)
2.	All payments to contractors and suppliers are cleared in less than 30 days	15(17.9%)	29(34.5%)	15(17.9%)	22(26.2%)	3(3.6%)
3.	Interim certificates are prepared for completed sections of work done before payments are made	35(41.2%)	28(32.9%)	15(17.6%)	6(7.1%)	1(1.2%)
4.	Materials supplied are received in store before being paid for	33(39.3%)	26(31.0%)	12(14.3%)	9(10.7%)	4(4.8%)
5.	Inspection reports are prepared for every payment certificate to be honored	29(34.1%)	41(48.2%)	8(9.4%)	5(5.9%)	2(2.4%)
6.	Payments for work done are made through the bank	55(64.0%)	20(23.3%)	7(8.1%)	2(2.3%)	2(2.3%)

Source: Field research findings, 2013

Table 7 shows that 60 respondents representing 68.9% agreed that Arua Municipal Council ensures prompt payment of contractors and suppliers whereas 5 respondents representing 5.7% were undecided and only 22 respondents representing 25.3% disagreed. This can be interpreted to mean that a majority of the respondents affirmed that Arua Municipal Council ensures prompt payment of contractors and suppliers.

The table indicates that 44 respondents representing 52.4% agreed that most payments to contractors and suppliers are cleared in less than 30 days whereas 15 of the respondents representing 17.9% were undecided and only 25 respondents representing 29.8% disagreed with the statement. This shows that a majority of the respondents affirmed that most payments to contractors and suppliers are cleared in less than 30 days.

During an interview with one top manager, he said that he had never witnessed circumstances where contractors were paid beyond contractual terms. The other respondent agreed that:

> Payment for works did not delay because the money for projects was made ready before contracts were awarded to contractors, especially so with the introduction of force account policy of road maintenance in the District, Urban and Community Access Roads (DUCAR) agencies.

Table 7 indicates that 63 respondents representing 74.1% agreed that interim certificates are prepared for completed sections of work done before payments are made whereas 15 of the respondents representing 17.6% were undecided and only 7 respondents representing 8.3% disagreed. This shows that a majority of the respondents affirmed that interim certificates are prepared for completed sections of work done before payments are made.

It is noted from the table that 59 respondents representing 70.3% agreed that materials supplied are received in store before being paid for whereas 12 of the respondents representing 14.3% were undecided and only 13 of the respondents representing 15.5% disagreed. This shows that a majority of the respondents affirmed that materials supplied are received in store before being paid for. This is as per the procurement procedures and is aimed at reducing liabilities on the part of the entity.

The table indicates that 70 respondents representing 82.3% agreed that inspection reports are prepared for every payment certificate to be honored whereas 8 of the respondents representing 9.4% were undecided agreed that and only 7 of the respondents

representing 8.3% disagreed. This shows that a majority of the respondents affirmed that inspection reports are prepared for every payment certificate to be honored.

It is also be noted from the table that 75 respondents representing 87.3% agreed that payments for work done are made through the bank whereas 7 of the respondents (representing 8.1%) were undecided and only 4 of the respondents (representing 4.6%) disagreed. This shows that a majority of the respondents agreed that payments for work done are made through the bank.

Table 8 below indicates findings from respondents on various statements on variations to the contract.

Table 8: Responses on variations to the contract

		5	4	3	2	1
1.	Cases of variation orders in road maintenance projects are common in Arua Municipality	23(26.7%)	40(46.5%)	11(12.8%)	10(11.6%)	2(2.3%)
2.	Variation orders lead to increased costs	26(31.0%)	37(44.0%)	12(14.3%)	7(8.3%)	2(2.4%)
3.	Variation orders increase project completion time	26(31.0%)	38(45.2%)	11(13.1%)	6(7.1%)	3(3.6%)
4.	Variation orders delay procurement processes	20(24.1%)	37(44.6%)	8(9.6%)	15(18.1%)	3(3.6%)
5.	Cases of variation orders affect quality of work	20(23.5%)	28(32.9%)	9(10.6%)	18(21.2%)	10(11.8%)
6.	Variation orders in road maintenance works are genuine	18(20.9%)	39(45.3%)	17(19.8%)	9(10.5%)	3(3.5%)

Source: primary data

From the table, it is noted that 63 respondents representing 73.2% agreed that cases of variation orders in road maintenance projects are common in Arua Municipality whereas 11 of the respondents representing 12.8% were undecided and only 12 of the respondents representing 13.9% disagreed. This shows that a majority of the respondents agreed that

cases of variation orders in road maintenance projects are common in Arua Municipality. Both top managers of the Municipality admitted having variations to contacts in the Municipality.

It is also noted that 63 respondents representing 75.0% agreed that variation orders lead to increased costs whereas 12 of the respondents representing 14.3% were undecided and only 9 of the respondents representing 10.7% disagreed. This shows that a majority of the respondents agreed that variation orders lead to increased costs.

Table 8 indicates that 64 respondents representing 76.2% agreed that variation orders increase project completion time whereas 11 of the respondents representing 13.1% were undecided and only 9 of the respondents representing 10.7% disagreed. This means that a majority of the respondents agreed that variation orders increase project completion.

From the table, it is indicated that 57 respondents representing 68.7% agreed that variation orders delay procurement processes whereas 8 of the respondents representing 9.6% were undecided and only 18 of the respondents representing 21.7% disagreed This shows that a majority of the respondents agreed that variation orders delay procurement processes.

From the table above, it can also be noted that 48 respondents representing 56.4% agreed that cases of variation orders affect quality of work though some 28 respondents (representing 33.0%) disagreed and 9 respondents representing 10.6% were undecided. This shows that a majority of the respondents agreed that cases of variation orders affect quality of work.

It is also noted that 57 respondents representing 66.2% agreed that variation orders in road maintenance works are genuine whereas 17 of the respondents representing 19.8%

were undecided and only 12 of the respondents representing 14.0% disagreed. This means that a majority of the respondents agreed that variation orders in road maintenance works are genuine.

One of the two top managers of Arua Municipality interviewed had this to say:

> I personally do not like variations because contractors who do more work should be paid more money for the extra work done. This brings problems to contract managers.

He associated these variations to fluctuation in prices as a result of delays in central government transfers that could change the cost of contracts.

4.4.2 Correlation Results-Objective One

Testing Hypothesis (H1): There is no relationship between contract administration and performance of road maintenance projects in Arua Municipality. To test this hypothesis, the researcher measured the variables by generating indices called contract administration and performance of the projects by obtaining mean responses. The data was then analysed using Pearson's Correlation and Regression techniques to respectively determine the relationship between variables and to determine the effect of one variable on another. Table 9 below indicates the correlation matrix between contract administration and performance of road maintenance projects in Arua Municipality.

Table 9: Correlation matrix between contract administration and performance

		Contract administration	Performance of the projects
Contract administration	Pearson Correlation	1	.679**
	Sig. (2-tailed)		.000
	N	88	87
Performance of the projects	Pearson Correlation	.679**	1
	Sig. (2-tailed)	.000	
	N	87	87

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

Source: primary data

Table 9 above shows Pearson's Correlation coefficient r = 0.679 between contract administration and performance of the projects, suggesting that the two variables were positively related. The Pearson's Correlation coefficient r = 0.679 and significance p = 0.000 show that there was a significant relationship between contract administration and performance of road maintenance projects in Arua Municipality. This further shows that 67.9% of performance of road maintenance projects is contributed by contract administration.

4.4.3 Regression Results-Objective One

Table 10: Regression results on contract administration and performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.679a	.461	.455	.49977	.461	72.663	1	85	.000

a. Predictors: (Constant), Contract administration
b. Dependent Variable: Performance of the projects
Source: Field research findings, 2013

Table 10 above shows that contract administration has an average significance and effect on performance of road maintenance projects in Arua Municipality as explained by the R Square of 0.455. This means that a change in project performance can be explained by contract administration up to 45.5%. Therefore the researcher rejects the null hypothesis that "there is no relationship between contract administration and performance of road maintenance projects in Arua Municipality." An alternative hypothesis was accepted.

4.5 Research Question Number Two: The link between relationship management and performance

4.5.1 Descriptive Statistics on communication channels and dealing with disputes

The researcher considered two dimensions of relationship management for this study which included communication channels and dealing with disputes.

Table 11 below indicates findings from respondents on various statements on communication channels.

Table 11: Responses on communication channels

		5	4	3	2	1
1.	Arua Municipal Council maintains a cordial relationship with road maintenance contractors	35(41.2%)	37(43.5%)	5(5.9%)	6(7.1%)	2(2.4%)
2.	Communication between AMC and contractors is done in writing	41(48.2%)	35(41.2%)	8(9.4%)	1(1.2%)	0(0.0%)
3.	Site instructions to road maintenance contractors are written clearly	35(41.2%)	37(43.5%)	9(10.6%)	3(3.5%)	1(1.2%)
4.	Contractors and suppliers express their concerns to the client (Municipal Authority)	26(30.6%)	49(57.6%)	5(5.9%)	5(5.9%)	0(0.0%)
5.	Site meetings for road maintenance projects are organised regularly	12(14.1%)	39(45.9%)	16(18.8%)	12(14.1%)	6(7.1%)
6.	Site instructions are only issued by the projects manager	18(21.4%)	31(36.9%)	19(22.6%)	11(13.1%)	5(6.0%)
7.	Each road project site has a clerk of works (client's representative)	27(31.8%)	29(34.1%)	18(21.2%)	7(8.2%)	4(4.7%)
8.	Regular and routine feedback is given to suppliers or contractors concerning their performance of road maintenance	23(27.1%)	39(42.4%)	16(18.8%)	5(5.9%)	5(5.9%)

Source: Field research findings, 2013

Table 11 above indicates that 72 respondents representing 84.7% agreed that Arua Municipal Council maintains a cordial relationship with road maintenance contractors whereas 5 of the respondents representing 5.9% were undecided and only 8 of the respondents representing 9.5% disagreed with the statement. This shows that a majority of the respondents agreed that Arua Municipal Council maintains a cordial relationship with road maintenance contractors.

The table also indicates that 76 respondents representing 89.4% agreed that communication between Arua Municipal Council and contractors is done in writing whereas 8 of the respondents representing 9.4% were undecided and only 1 respondent representing 1.2% disagreed. This shows that a majority of the respondents agreed that communication between Arua Municipal Council and contractors is done in writing.

Table 11 also indicates that 72 respondents representing 84.7% agreed that site instructions to road maintenance contractors are written clearly whereas 9 of the respondents representing 10.6% were undecided and only 4 of the respondents representing 4.7% disagreed with the statement. This shows that a majority of the respondents agreed that site instructions to road maintenance contractors are written clearly. One top manager of the council explained that Arua Municipality appoints a contract manager for every project, who should be in close contact with the contractors adding that contractors were required to keep a track record of all stages the project had undergone. He however acknowledged that in certain instances, contractors did not have these record books, also meant to keep schedules of project meetings. He explained that lack of proper communication could best be seen when project works were completed and complaints arose of shoddy work. He said the project supervisors were supposed to be in close contact with the contractors all the time, while meetings were called when there was a problem that needed to be improved on.

From the table, it is noted that 75 respondents representing 88.2% agreed that contractors and suppliers express their concerns to the client (Municipal Authority) while 5 respondents representing 5.9% were undecided and only 5 respondents representing 5.9%

disagreed. This shows that a majority of the respondents agreed that contractors and suppliers express their concerns to the client.

In a face-to-face interview, however, one of the Municipality's top managers alluded to the rather poor communication on matters of contract management, especially award and signing information.

It is also noted that 51 respondents representing 60.0% agreed that site meetings for road maintenance projects are organised regularly whereas 16 of the respondents representing 18.8% were undecided and only 18 of the respondents representing 21.2% disagreed. This means that a majority of the respondents agreed that site meetings for road maintenance projects are organised regularly.

The same table also indicates that 49 respondents representing 58.3% agreed that site instructions are only issued by the projects manager and only 16 of the respondents (representing 18.1%) disagreed with the statement whereas 19 of the respondents (representing 22.6%) were undecided. This means that a majority of the respondents agreed that site instructions are only issued by the projects manager.

From the table, it is also noted that 56 respondents representing 65.9% agreed that each road project site has a clerk of works (client's representative) whereas 18 of the respondents representing 21.2% were undecided and only 11 of the respondents representing 12.9% disagreed with the statement This means that a majority of the respondents agreed that each road project site has a clerk of works.

Table 11 also indicates that 62 respondents representing 69.5% agreed that regular and routine feedback is given to suppliers or contractors concerning their performance of road maintenance whereas 16 of the respondents representing 18.8% were undecided and only

10 of the respondents representing 11.8% disagreed with the statement. This means that a majority of the respondents agreed that regular and routine feedback is given to suppliers or contractors concerning their performance of road maintenance works.

Table 12 below indicates findings from respondents on various statements on dealing with disputes.

Table 12: Responses on dealing with disputes

		5	4	3	2	1
1.	Disputes occur regularly in contract management processes of Arua Municipal Council	21(24.7%)	23(27.1%)	16(18.8%)	22(25.9%)	3(3.5%)
2.	Disputes affect final performance level of road maintenance projects in the Municipality	31(36.5%)	36(42.4%)	5(5.9%)	12(14.1%)	1(1.2%)
3.	Arua Municipal Council resolves contract disputes amicably	23(26.4%)	41(47.1%)	12(13.8%)	9(10.3%)	2(2.3%)
4.	All road contracts include an elaborate dispute resolution mechanism	15(17.9%)	27(32.1%)	24(28.6%)	13(15.5%)	5(6.0%)
5.	Contractors inform the client about likely incidences that may lead to disputes	21(25.3%)	29(34.9%)	17(20.5%)	12(14.5%)	4(4.8%)
6.	There are no cases of disputes in road maintenance in the Municipality that need arbitration or litigation	13(15.5%)	19(22.6%)	14(16.7%)	20(23.8%)	18(21.4%)

Source: Field research findings, 2013

From table 12 above, it is noted that 44 respondents representing 51.8% agreed that disputes occur regularly in contract management processes of Arua Municipal Council whereas 16 of the respondents representing 18.8% were undecided and only 25 of the respondents representing 29.4% disagreed with the statement . This means that a majority

of the respondents agreed that occur regularly in contract management processes of Arua Municipal Council.

It is also noted that 67 respondents representing 78.9% agreed that disputes affect final performance level of road maintenance projects in the Municipality whereas 5 of the respondents representing 5.9% were undecided and only 13 of the respondents representing 15.3% disagreed with the statement. This means that a majority of the respondents agreed that disputes affect final performance level of road maintenance projects in the Municipality.

It also indicates that 64 respondents representing 73.5% agreed that Arua Municipal Council resolves contract disputes amicably whereas 12 of the respondents representing 13.8% were undecided and only 11 of the respondents representing 12.6% disagreed with the statement. This means that a majority of the respondents agreed that Arua Municipal Council resolves contract disputes amicably. He further suggested that regular meetings between the contract manager and contractors (with minutes) be organised so as to avoid future problems (disputes). In an interview with one top manager, he had this to say:

We normally call parties involved in disputes to round-table meetings, giving benefits of doubt. We can then listen to one another in the dialogue meeting. However, in some extreme cases some disputes are resolved in courts of law since the contract agreements are well spelt out with their terms and conditions to be followed. This top manager also pointed out that dispute settlement and resolution were part of the terms and conditions of the contract agreements signed between the client and contractor, noting that they were impersonal. The other top manager also emphasized that disputes were mostly resolved

administratively through dialogue but those who were not satisfied opted for the courts of law directly.

From the table, it is noted that 42 respondents representing 50.0% agreed that all road contracts include an elaborate dispute resolution mechanism while a substantial number of respondents (24) representing 28.6% were undecided and 18 respondents representing 21.5% disagreed with the statement. The Combined percentages show the ratio of the respondents was 50:50 on both affirmative and negative (or undecided) side This can confirm that although half of the respondents agreed that all road contracts include an elaborate dispute resolution mechanism, there are still some shortfalls in the Municipality's dispute resolution mechanism or system.

It is also seen that 50 respondents representing 60.2% agreed that contractors inform the client about likely incidences that may lead to disputes whereas 17 of the respondents representing 20.5% were undecided and only 16 of the respondents representing 19.3% disagreed with the statement This means that a majority of the respondents agreed that contractors inform the client about likely incidences that may lead to disputes.

The table also indicates that only 32 of the respondents representing 38.1% agreed that there are no cases of disputes in road maintenance in the Municipality that need arbitration or litigation while 38 respondents representing 45.2% disagreed with the statement whereas 14 of the respondents representing 16.7% were undecided. This means that a majority of the respondents disagreed with the statement that there are no cases of disputes in road maintenance in the Municipality that need arbitration or litigation. This affirms that there are indeed cases of contract disputes in some of Municipality's road maintenance projects that attract arbitration or litigation.

4.5.2 Correlation Results-Objective Two

Testing Hypothesis (H2): Relationship management does not affect performance of road maintenance projects in Arua Municipality. To test this hypothesis, the researcher measured the variables by generating indices called relationship management and performance of the projects by obtaining mean responses. The data was then analysed using Pearson's Correlation and Regression techniques to respectively determine the relationship between variables and to determine the effect of one variable on another. Table 13 shows Pearson's Correlation coefficient r = 0.744 between relationship management and performance of the projects, suggesting that the two variables were positively related.

Table 13: Correlation matrix between relationship management and performance

		Relationship management	Performance of the projects
Relationship management	Pearson Correlation	1	.744**
	Sig. (2-tailed)		.000
	N	87	86
Performance of the projects	Pearson Correlation	.744**	1
	Sig. (2-tailed)	.000	
	N	86	87

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

Source: Field research findings, 2013

The Pearson's Correlation coefficient r = 0.744 and significance p = 0.000 show that there was a significant relationship between relationship management and performance of road maintenance projects in Arua Municipality.

4.5.3 Regression Results-Objective Two

Table 14: Regression results on relationship management and performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.744[a]	.553	.548	.45488	.553	104.102	1	84	.000

a. Predictors: (Constant), Relationship management
b. Dependent Variable: Performance of the projects
Source: Field research findings, 2013

From table 14 above, it is seen that relationship management has a substantial significance and effect on performance of road maintenance projects in Arua Municipality as explained by the R Square of 0.548. This means that a change in project performance can be explained by relationship management up to 54.8%. Therefore the null hypothesis that "relationship management does not affect performance of road maintenance projects in Arua Municipality" is rejected. An alternative (research) hypothesis is acceptable.

4.6 Research Question Number Three: The relationship between contract closure and performance

4.6.1 Descriptive Statistics on inspection/payments and stakeholder involvement

The researcher considered two dimensions of contract closure for this study, which included inspection/payments and stakeholder involvement. This consideration was to know whether contracts are properly closed and recorded.

Table 15 below indicates findings from respondents on various statements on inspection and payments.

Table 15: Responses on inspection and payments

		5	4	3	2	1
1.	Final inspection of road projects is done when works are completed	53(61.6%)	19(22.1%)	6(7.0%)	4(4.7%)	4(4.7%)
2.	Final contract audits are carried out on road maintenance projects	29(34.9%)	36(43.4%)	11(13.3%)	6(7.2%)	1(1.2%)
3.	When contracts are being closed, all outstanding costs are settled	23(28.0%)	26(31.7%)	16(19.5%)	11(13.4%)	6(7.3%)
4.	In cases of termination before project completion, all required procedures are completed	28(33.7%)	30(36.1%)	12(14.5%)	8(9.6%)	5(6.0%)
5.	Contractor's closing physical and financial statements are completed	13(15.7%)	25(30.1%)	39(47.0%)	5(6.0%)	1(1.2%)
6.	Contract funds are reviewed and excess funds reallocated to other projects	17(20.5%)	31(37.3%)	22(26.5%)	9(10.8%)	4(4.8%)
7.	Contractors promptly correct all defects that arise during the defects liability period	12(14.6%)	33(40.2%)	15(18.3%)	15(18.3%)	7(8.5%)
8.	Retained funds are promptly paid to contractors after defects liability period	24(29.6%)	22(27.2%)	24(29.6%)	10(12.3%)	1(1.2%)

Source: Field research findings, 2013

From table 15 above, it is noted that 58 respondents representing 69.8% agreed that in cases of termination before project completion, all required procedures are completed whereas 12 respondents representing 14.5% were undecided and only 13 respondents representing 15.6% disagreed. This means that a majority of respondents agreed that in cases where project termination occurs before completion, all required procedures are completed.

It is also noted that 38 respondents representing 45.8% agreed with the statement that contractor's closing physical and financial statements are completed although a majority 39 respondents representing 47.0% were undecided and only 6 respondents representing 7.2% disagreed. This means that although a substantial number of respondents agreed that with the statement that contractor's closing physical and financial statements are completed, a larger proportion of the respondents were either non-committal or disagreed.

It can also be indicated that 48 respondents representing 57.8% agreed that contract funds are reviewed and excess funds reallocated to other projects whereas 22 respondents representing 26.5% were undecided and only 13 respondents (representing 15.6%) disagreed with the statement. This means that a majority of respondents agreed that contract funds are reviewed and excess funds reallocated to other projects.

On handling defects, it seen that 45 respondents representing 54.8% agreed that contractors promptly correct all defects that arise during the defects liability period whereas 15 respondents representing 18.3% were undecided and only 22 respondents representing 26.8% disagreed. This means that a majority of respondents agreed that contractors promptly correct all defects that arise during the defects liability period.

It is also indicated that 46 respondents representing 56.8% agreed that retained funds are promptly paid to contractors after defects liability period whereas 24 respondents representing 29.6% were undecided and only 11 respondents representing 13.5% disagreed with the statement. This means that a majority of respondents agreed that retained funds are promptly paid to contractors after defects liability.

Table 16 below indicates findings from respondents on various statements on stakeholder involvement.

Table 16: Responses on stakeholder involvement

		5	4	3	2	1
1.	Contract management records are properly filed during project execution	39(47.6%)	29(35.4%)	11(13.4%)	2(2.4%)	1(1.2%)
2.	Project completion reports are prepared and submitted	36(44.4%)	34(42.0%)	8(9.9%)	3(3.7%)	0(0.0%)
3.	Completion reports are stored in the archives	33(40.2%)	31(37.8%)	12(14.6%)	4(4.9%)	2(2.4%)
4.	Community members, leaders and other stakeholders are involved during implementation of road projects	34(41.0%)	33(39.8%)	5(6.0%)	5(6.0%)	6(7.2%)
5.	Project management committees are put in place for each major road project	25(30.5%)	26(31.7%)	18(22.0%)	7(8.5%)	6(7.3%)
6.	All project participants and stakeholders are involved in the close-out process	11(13.4%)	35(42.7%)	19(23.2%)	9(11.0%)	8(9.8%)
7.	Road maintenance projects are officially commissioned after completion	22(27.2%)	24(29.6%)	10(12.3%)	12(14.8%)	13(16.0%)
8.	Post-project surveys are conducted to solicit feedback on the project from the project team, road users and other stakeholders	10(12.2%)	26(31.7%)	24(29.3%)	14(17.1%)	8(9.8%)

Source: Field research findings, 2013

From the table 16 above, it is indicated that 68 respondents representing 83.0% agreed that contract management records are properly filed during project execution whereas 11 respondents representing 13.4% were undecided and only 3 respondents representing

3.6% disagreed. This affirms that a majority of respondents agreed that contract management records are properly filed during project execution.

It is also noted that 70 respondents (representing 86.4%) agreed that project completion reports are prepared and submitted whereas 8 respondents representing 9.9% were undecided and only 3 respondents representing 3.7% disagreed with the statement. This affirms that an overwhelming majority of respondents agreed that project completion reports are prepared and submitted.

From the table, it is indicated that 64 respondents representing 78.0% agreed that completion reports are stored in the archives whereas 12 respondents representing 14.6% were undecided and only 6 respondents representing 7.3% disagreed with the statement. This affirms that a majority of respondents agreed that completion reports are stored in the archives.

It is also noted that 67 respondents representing 80.8% agreed that community members, leaders and other stakeholders are involved during implementation of road projects whereas 5 respondents representing 6.0% were undecided and only 11 respondents representing 13.2% disagreed. This affirms that a large majority of respondents agreed that community members, leaders and other stakeholders are involved during implementation of road projects. One top manager of Arua Municipality stated that inspection of contract works was done by technical staff in their supervision schedules but the politicians and other stakeholders often went for monitoring, with limited reports given. The other manager of the Municipality also agreed with this position.

It is also seen that 51 respondents representing 62.2% agreed that project management committees are put in place for each major road project whereas 18 respondents

representing 22.0% were undecided and only 13 respondents representing 15.8% disagreed with the statement. This affirms that a majority of respondents agreed project management committees are put in place for each major road project.

It is also noted that 46 respondents representing 56.1% agreed that all project participants and stakeholders are involved in the close-out process whereas 19 respondents representing 23.2% were undecided and only 17 respondents representing 20.8% disagreed with the statement. This affirms that a majority of respondents agreed all project participants and stakeholders are involved in the close-out process.

From the table, it is indicated that 46 respondents representing 56.8%agreed that road maintenance projects are officially commissioned after completion whereas 10 respondents representing 12.3% were undecided and only 25 respondents representing 30.8% disagreed with the statement. This affirms that a majority of respondents agreed that road maintenance projects are officially commissioned after completion.

It is also indicated that 36 respondents representing 43.9% agreed that post-project surveys are conducted to solicit feedback on the project from the project team, road users and other stakeholders whereas 24 respondents representing 29.3% were undecided and only 22 respondents representing 26.9% disagreed with the statement. This means that although a fair number of respondents agreed that post-project surveys are conducted to solicit feedback on the project from the project team, road users and other stakeholders, many other respondents either disagree with the statement or are non-committal.

4.6.2 Correlation Results-Objective Three

Testing Hypothesis (H3): Contract closure has no effect on performance of road maintenance projects in Arua Municipality. To test this hypothesis, the researcher

measured the variables by generating indices called contract closure and performance of the projects by obtaining mean responses. The data was then analysed using Pearson's Correlation and Regression techniques to respectively determine the relationship between variables and to determine the effect of one variable on another.

Table 17: Correlation matrix between contract closure and performance

		Contract closure	Performance of the projects
Contract closure	Pearson Correlation	1	.647**
	Sig. (2-tailed)		.000
	N	86	85
Performance of the projects	Pearson Correlation	.647**	1
	Sig. (2-tailed)	.000	
	N	85	87

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Field research findings, 2013

Table 17 shows Pearson's Correlation coefficient r = 0.647 between relationship management and performance of the projects, suggesting that the two variables were positively related. The Pearson's Correlation coefficient r = 0.744 and significance p = 0.000 show that there was a significant relationship between contract closure and performance of road maintenance projects in Arua Municipality.

4.6.3 Regression Results-Objective Three

Table 18: Regression results on contract closure and performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.647a	.419	.412	.51909	.419	59.747	1	83	.000

a. Predictors: (Constant), Contract closure
b. Dependent Variable: Performance of the projects
Source: Field research findings, 2013

Table 18 shows that contract closure has an average significance and effect on performance of road maintenance projects in Arua Municipality as explained by the R Square of 0.412. This means that a change in project performance can be explained by contract closure up to 41.2%. Therefore the null hypothesis that "contract closure has no effect on performance of road maintenance projects in Arua Municipality" is rejected. An alternative hypothesis is acceptable.

4.7 Findings on the dependent variable: performance of road maintenance projects

4.7.1 Project performance time

Table 19 indicates findings from respondents on various statements on project performance time for road maintenance works.

Table 19: Responses on project performance time

		SA	A	UD	D	SD
1.	Road maintenance projects in Arua Municipality are completed on time	11(12.9%)	25(29.4%)	8(9.4%)	34(40.0%)	7(8.2%)
2.	Shorter construction time leads to improved client satisfaction	17(20.2%)	39(46.4%)	9(10.7%)	10(11.9%)	9(10.7%)
3.	Increased construction time leads to a drop in quality standards due to rushed work	23(27.7%)	21(25.3%)	13(15.7%)	18(21.7%)	8(9.6%)
4.	Time management issues are always identified and brought to the attention of authorities for improvement	30(35.7%)	37(44.0%)	13(15.5%)	4(4.8%)	0(0.0%)
5.	In order to reduce construction time, design reviews and project variations need to be minimized	25(29.8%)	40(47.6%)	12(14.3%)	6(7.1%)	1(1.2%)
6.	Delays are always avoided in the road maintenance implementation process	23(27.4%)	18(21.4%)	9(10.7%)	29(34.5%)	5(6.0%)
7.	Materials for road works are mobilised to site in time	20(23.8%)	24(28.6%)	7(8.3%)	27(32.1%)	6(7.1%)
8.	Funds are available to purchase the required materials	18(21.7%)	37(44.6%)	14(16.9%)	12(14.5%)	2(2.4%)
9.	Funds are available to pay contractors	20(23.8%)	37(44.0%)	15(17.9%)	10(11.9%)	2(2.4%)
10.	There is security for materials on site	14(16.7%)	35(41.7%)	12(14.3%)	17(20.2%)	6(7.1%)

Source: Field research findings, 2013

Table 19 above shows that road maintenance projects in Arua Municipality are not completed on time since majority 41 respondents (representing 48.2%) disagreed with the statement that road maintenance projects in Arua Municipality are completed on time. Only 36 respondents (representing 42.3%) agreed with the statement whereas 8 respondents (representing 9.4%) were undecided.

It also shows that shorter construction time leads to improved client satisfaction since majority 56 respondents (representing 66.6%) said so. Only 19 respondents (representing 22.6%) disagreed with the statement whereas 9 respondents (representing 10.7%) were undecided.

It is seen that increased construction time leads to a drop in quality standards due to rushed work since majority 44 respondents (representing 53.0%) said so. Only 26 respondents (representing 31.3%) disagreed with the statement whereas 13 respondents (representing 15.7%) were undecided.

From the table, it is noted that time management issues are always identified and brought to the attention of authorities for improvement since majority 67 respondents (representing 79.7%) said so. Only 4 respondents (representing 4.8%) disagreed whereas 13 respondents (representing 15.5%) were undecided.

It is also noted that in order to reduce construction time, design reviews and project variations need to be minimized since majority 45 respondents (representing 77.4%) said so. Only 7 respondents (representing 8.3%) disagreed with the statement whereas 12 respondents (representing 14.3%) were undecided.

It is indicated from the table that delays are always avoided in the road maintenance implementation process since majority 41 respondents (representing 48.8%) said so. Some 34 respondents (representing 40.5%) disagreed with the statement whereas 9 respondents (representing 10.7%) were undecided.

It is also noted that materials for road works are mobilised to site in time since majority 44 respondents (representing 52.4%) said so. Some 33 respondents (representing 39.2%) disagreed with the statement whereas 7 respondents (representing 8.3%) were undecided.

It is also noted that funds are available to purchase the required materials since majority 55 respondents (representing 66.3%) said so. Only 14 respondents (representing 16.9%) disagreed with the statement whereas another 14 respondents (representing 16.9%) were undecided.

The table above also shows that funds are available to pay contractors since majority 57 respondents (representing 67.8%) said so. Only 12 respondents (representing 14.3%) disagreed with the statement whereas 15 respondents (representing 17.9%) were undecided.

The table also indicates that there is security for materials on site since majority 49 respondents (representing 58.4%) said so. Only 23 respondents (representing 27.3%) disagreed with the statement whereas 12 respondents (representing 14.3%) were undecided.

4.7.2 Project performance quality

Table 20 below indicates findings from respondents on various statements on project performance quality for road maintenance works.

Table 20: Responses on project performance quality

		5	4	3	2	1
1.	Arua Municipal Council recognizes the importance of good quality road works	41(47.7%)	36(41.9%)	2(2.3%)	7(8.1%)	0(0.0%)
2.	Contractors implement road maintenance works according to specifications	23(27.4%)	43(51.2%)	7(8.3%)	9(10.7%)	2(2.4%)
3.	Arua Municipal Council leadership (client) is happy with the quality of work done on urban roads	17(20.2%)	37(44.0%)	12(14.3%)	14(16.7%)	4(4.8%)
4.	Arua Municipal Council has competent staff who are capable of ensuring quality road works	38(45.2%)	28(33.3%)	4(4.8%)	8(9.5%)	6(7.1%)
5.	Road users are happy with the quality of work done on urban roads	13(15.5%)	30(35.7%)	8(9.5%)	25(29.8%)	8(9.5%)
6.	Road maintenance materials are of good quality	17(20.2%)	32(38.1%)	11(13.1%)	18(21.4%)	6(7.1%)

Source: Field research findings, 2013

Table 20 above indicates findings from respondents on various statements on project performance quality for road maintenance works.

From table 20, it is noted that Arua Municipal Council recognizes the importance of good quality road works since majority 77 respondents (representing 89.64%) said so. Only 2 respondents (representing 2.3%) disagreed whereas 7 respondents (representing 8.1%) were undecided.

It is also noted that contractors implement road maintenance works according to specifications since majority 66 respondents (representing 78.6%) said so. Only 11 respondents (representing 13.1%) disagreed that contractors implement road maintenance works according to specifications whereas 7 respondents (representing 8.3%) were undecided.

It is seen from table 20 that Arua Municipal Council leadership (client) is happy with the quality of work done on urban roads since majority 54 respondents (representing 62.4%) said so. Only 18 respondents (representing 21.5%) disagreed whereas 12 respondents (representing 14.3%) were undecided.

It is also indicated that Arua Municipal Council has competent staff who are capable of ensuring quality road works since majority 64 respondents (representing 78.5%) said so. Only 14 respondents (representing 16.6%) disagreed that whereas 4 respondents (representing 4.8%) were undecided.

It is indicated that road users are happy with the quality of work done on urban roads since majority 43 respondents (representing 51.2%) said so. Some 33 respondents (representing 39.3%) disagreed with the statement whereas 8 respondents (representing 9.5%) were undecided.

It also indicates that road maintenance materials are of good quality since majority 49 respondents (representing 58.3%) said so. Only 24 respondents (representing 28.5%) disagreed with the statement whereas 11 respondents (representing 13.1%) were undecided.

4.7.3 Project performance cost

Table 21 below indicates findings from respondents on various statements on project performance cost for road maintenance works.

Table 21: Responses on project performance cost

		5	4	3	2	1
1.	Cost control is important in road maintenance management	50(59.5%)	30(35.7%)	3(3.6%)	1(1.2%)	0(0.0%)
2.	To reduce the cost of road maintenance projects, variations should be minimized	29(34.5%)	44(52.4%)	7(8.3%)	2(2.4%)	2(2.4%)
3.	Good workmanship on the roads leads to a decrease in road maintenance cost	41(48.2%)	27(31.8%)	8(9.4%)	7(8.2%)	2(2.4%)
4.	Relevant road maintenance equipment is available within the Municipality	24(28.2%)	38(44.7%)	9(10.6%)	12(14.1%)	2(2.4%)
5.	Required materials for road works are available within Arua Municipality	17(20.2%)	21(25.0%)	7(8.3%)	28(33.3%)	11(13.1%)
6.	Projects are completed within approved budget ceiling	16(18.8%)	28(32.9%)	8(9.4%)	26(30.6%)	7(8.2%)

Source: Field research findings, 2013

From table 21, it is noted that cost control is important in road maintenance management since majority 80 respondents (representing 95.2%) said so. Only 1 respondent (representing 1.2%) disagreed whereas 3 respondents (representing 3.6%) were undecided.

It is seen that to reduce the cost of road maintenance projects, variations should be minimized since majority 73 respondents (representing 89.6%) said so. Only 4 respondents (representing 4.8%) disagreed whereas 7 respondents (representing 8.3%) were undecided.

It is noted that good workmanship on the roads leads to a decrease in road maintenance cost since majority 68 respondents (representing 80.0%) said so. Only 9 respondents

(representing 10.6%) disagreed whereas 8 respondents (representing 9.4%) were undecided.

It is noted that relevant road maintenance equipment is available within the Municipality since majority 62 respondents (representing 72.9%) said so. Only 14 respondents (representing 16.4%) disagreed whereas 9 respondents (representing 10.6%) were undecided.

It is indicated that required materials for road works are not available within Arua Municipality since majority 39 respondents (representing 46.4%) said so. Some 38 respondents (representing 45.2%) however agreed with the statement that required materials for road works are not available within Arua Municipality whereas 7 respondents (representing 8.3%) were undecided.

It is also noted that projects are completed within approved budget ceiling since majority 44 respondents (representing 51.7%) said so. Some 33 respondents (representing 38.8%) however disagreed whereas 8 respondents (representing 9.4%) were undecided.

4.8 Overall Purpose Statement: Relationship between contract management and performance of road maintenance projects

4.8.1 Multiple Correlation Results-Dimensions of contract management and performance

Table 22 below shows a multiple correlation between the study dimensions of contract management and performance of road maintenance projects in Arua Municipality.

Table 22: Correlation results on contract management and performance

		Contract management	Performance of the projects
Contract management	Pearson Correlation	1	.761**
	Sig. (2-tailed)		.000
	N	88	87
Performance of the projects	Pearson Correlation	.761**	1
	Sig. (2-tailed)	.000	
	N	87	87

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

Source: Field research findings, 2013

Table 22 above shows Pearson's Correlation coefficient r = 0.761 between contract management and performance of the projects in Arua Municipality, suggesting that the two variables were highly positively related.

4.8.2 Multiple regression Results-Dimensions of contract management and performance

Table 23 below shows a multiple regression between the study dimensions of contract management and performance of road maintenance projects in Arua Municipality.

Table 23: Regression results on contract management and performance

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.776[a]	.603	.588	.43444	.603	40.932	3	81	.000

a. Predictors: (Constant), Contract closure, Contract administration, Relationship management

b. Dependent Variable: Performance of the projects

Source: Field research findings, 2013

It can be noted from table 23 above that overall contract management (through its dimensions of contract administration, relationship management and contract closure) has

a moderate significance and effect on performance of road maintenance projects in Arua Municipality as explained by the R Square of 0.588. This means that a change in project performance can be explained by contract management up to 58.8%.

CHAPTER FIVE

SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarises the findings of the study undertaken, discussion of the results with reference to literature and personal opinions, conclusions on the study and recommendations based on the findings.

5.2 Summary of the findings

The findings of this study, laid out objective by objective, were as follows.

On objective one, regression analysis showed that contract administration affected performance of road maintenance projects by 45.5%. The study therefore found a significant relationship between contract administration and performance of road maintenance projects in Arua Municipality.

On objective two, regression analysis showed that relationship management affected performance of road maintenance projects by 54.8%. This study thus found a significant link between relationship management and performance of the projects.

On objective three, regression analysis showed that contract closure affects performance of road maintenance projects by 41.2%. The study hence found a significant relationship found between contract closure and performance of road maintenance projects.

5.2.1 Contract administration and performance of road maintenance projects

The correlation between contract administration and performance of road maintenance projects was positive and significant since Pearson's Correlation coefficient r = 0.679

was high and p value (p=0.000) was less than the p critical (p_c=0.050), suggesting a positive relationship between the two variables. From regression analysis, the amount by which a change in contract administration brings a change in road maintenance projects performance was found to be 0.455 (R square=0.455). This means that contract administration affects performance of road maintenance projects by 45.5%. In qualitative results, it was noted that although there were some cases of variations to contracts, these arose from other causes such as fluctuation in prices as a result of delays in central government transfers that could change the cost of contracts. The leaders also concurred on timely payments to contractors.

5.2.2 Relationship management and performance of road maintenance projects

The correlation between relationship management and performance of road maintenance projects was positive and significant since Pearson's Correlation coefficient r = 0.744 was high and p value (p=0.000) was less than the p critical (p_c=0.050), suggesting a high positive relationship between the two variables. From regression analysis, the amount by which a change in relationship management brings a change in road maintenance projects performance was found to be 0.548 (R square=0.548). This means that relationship management affects performance of road maintenance projects by 54.8%. In qualitative results, the council leaders noted poor communication on matters of contract management as well as laxity on the parts of both the contractors and contract managers as possible causes of poor performance of projects in Arua Municipality.

5.2.3 Contract closure and performance of road maintenance projects

The correlation between contract closure and performance of road maintenance projects was positive and significant since Pearson's Correlation coefficient r = 0.647 was high

and p value (p=0.000) was less than the p critical (p_c=0.050), suggesting a positive relationship between the two variables. From regression analysis, the amount by which a change in contract administration brings a change in road maintenance projects performance was found to be 0.412 (R square=0.412). This means that contract closure affects performance of road maintenance projects by 41.2%. In qualitative results, the two leaders were rather non-committal on the relationship between contract closure and performance of road maintenance, emphasising that inspection of contract works was a role of technical staff. This implies that possible performance gaps can be associated with the competence of the technical staff.

5.3 Discussion of findings

The following is a discussion of findings of the study:

5.3.1 Contract administration and performance

The first objective of the study was to establish the relationship between contract administration and performance of road maintenance projects in Arua Municipality. Findings of the study established that there was a positive and significant relationship between the two variables; contract administration explained up to 45.5% of the road maintenance projects performance in Arua Municipality. Contract administration had a substantial effect on performance of road maintenance projects in the Municipality. This implies that the 54.5% of the Municipality's road maintenance projects performance is explained by other factors. The qualitative results indicated that cases of variations to contracts arose from other causes such as fluctuation in prices as a result of delays in

central government transfers that could have changed the cost of contracts. This may explain the 54.5% other factors earlier established.

According to Mansfield, Ugwu and Doran (1994), the problem of untimely financing and delayed payment for completed works, poor contract administration, change in site conditions and shortages of materials cause delays and cost overruns in public highways and building projects in Nigeria. This observation seems to agree with some aspects both quantitative and qualitative of the findings of this study. Any material deviation may be due to differences in objectives of study. Alinaitwe (2007), whose study was in the construction sector in Uganda, also links poor performance of projects to poor contract administration, emphasizing delayed payments, lack of regular meetings between client and contractor as causes of client's failure to track project developments and subsequently substandard projects and variation of prices. These arguments are largely in agreement with the findings of this study. Chan and Kumaraswamy (1997) identify some common and significant factors affecting performance of both building and civil engineering projects as poor site management and supervision, low speed of decision making involving project teams, variations of works and inadequate contractor experience. The factors pointed out by these writers are aspects of contract administration, thus in agreement with the findings of this study. Xiao and Proverbs (2002) argue that improved contractor performance leads to enhanced client satisfaction, and hence an improvement in the contractor's reputation and competitiveness in the market. The writers further argue that the client's long term interests lie in the quality of the project, insisting work performed must conform to specifications established for the

project. The researchers note that studies reviewed touch on the shortfalls of both contactor and client but are largely skewed towards construction projects, leaving a gap for road maintenance projects. Their findings, though concentrated on the relationship between contractor performance and enhanced client satisfaction, also seem to agree with findings of this study since contract administration is intended to achieve client satisfaction while contractor performance a dependent variable.

5.3.2 Relationship management and performance

The second objective of the study was to establish the link between relationship management and performance of road maintenance projects in Arua Municipality. Findings of this study established that there was a positive and significant relationship between the two variables; relationship management explained up to 54.8% of the road maintenance projects performance in Arua Municipality. Relationship management also had a substantial effect on performance of road maintenance projects in the Municipality. This implies that the 45.2% of the road maintenance projects performance in Arua Municipality is explained by other factors. The qualitative results indicated laxity on the parts of both the contractors and contract managers as possible causes of poor performance of projects in Arua Municipality. This may explain the 45.2% other factors earlier established.

A study by Coltman, Devinney and Midgley (2009) reveals a positive and significant path between a superior customer relationship management (CRM) capability and firm performance, showing that CRM initiatives that jointly emphasize customer intimacy, cost reduction and analytic intelligence outperform those that take a less balanced

approach. Soliman (2011) also finds a positive relationship between CRM and performance. Although not in the setting of road maintenance sector, these researchers largely agree with the findings of this study.

Smith et al. (2004) are concerned that the financial risk and reason for dispute and arbitration mainly arises from the shortage of necessary capital, often resulting in delayed payments by clients to contractors as well as delayed payments by contractors to sub-contractors or contractors' employees. Although these researchers bring out some dimensions of relationship management that relate to project management, their emphasis seems to stretch to available financing as found in the qualitative aspects of this study. This may be as a result of differences in objectives of the two studies. Another writer, William (2006) argues that purchasing has the ultimate responsibility of establishing and maintaining good supplier relationships. He further argues that keeping good relations with suppliers is becoming increasingly recognized as an important factor in maintaining a competitive edge-with many companies often adopting their reliable and competent suppliers as partner. Elsey (2007) also argues that as the supplier/provider gains greater understanding of the organisation's business needs and style and develops a level of confidence and trust, the supplier/provider will be more willing to be proactive and innovative to bring forward improvements and savings to mutual benefit, more willing to share problems, plans and concerns, more willing to negotiate and more confident in investing for the longer term. Acharya and Young (2006) also argue that claims, disputes and omissions adversely affect the performance and quality of the finished product. Findings by these writers broadly emphasize the relationship between the contracting

parties and their performance in the various projects. This is in agreement with findings of this study that also found a positive and significant relationship between relationship management and performance of road maintenance projects.

5.3.3 Contract closure and performance

The third objective of the study was to establish the relationship between contract closure and performance of road maintenance projects in Arua Municipality. Findings of the study established that there was a positive and significant relationship between the two variables, meaning that contract closure explained up to 41.2% of the road maintenance projects performance in Arua Municipality. Contract closure also had a substantial effect on performance of road maintenance projects in the Municipality. This implies that the 58.8% is explained by other factors. The qualitative results indicated performance gaps associated with the competence of the technical staff. This possibly explains the 58.8% other factors earlier established.

Shen and Walker (2001) allude to time management as an important part of the construction management process, thus an important factor of closeout, aimed at ensuring timely completion of the project. Acharya and Young (2006) also point out that any errors made in the process of meeting quality in technical performance or time commonly result in loss to a contractor or dissatisfaction of the client. HHS (2012) urges contract managers to ensure that contracts are closed in a timely and effective manner in order to avoid any negative ramifications, financial or otherwise. Ackerman (1996) further notes that sometimes it is the service failures themselves which cause a termination of the partnership, often occurring due to financial reasons or the apparent inability of the

contractor to satisfy the service levels required by the buyer and hence the partnership is ended so as to satisfy the requirements of the contract of service. HHS (2012) also associates delays in contract closeout to inability by the client to obtain a true accounting of funds invested. Zhou, et al. (2007) concur with this submission, reporting that in China, all contracts are required to be audited at practical completion stage. This is ideally a final account audit, requiring thorough investigation by the client. The audit identifies final project cost and reconciles the makeup of the final price, while noting any significant variations for further verification with authorities.

Although in agreement with several aspects of the study, Young (2008), in a study on health services in United Kingdom, finds that contract termination (closure) occurs mainly due to contractor's inability to perform the work to the required outcomes (efficiently) due to under pricing or misunderstanding the specifications and non-inclusion of all transaction costs.

Findings of this research seem to agree with some of the previous writings reviewed here above that contract closure indeed has a significant relationship with project performance in the dimensions of time (completion), quality (specifications) and cost (financing). The relationship can therefore be further associated with road maintenance projects in Arua Municipality as noted in this study.

5.4 Conclusions

The following are conclusions drawn from the study:

5.4.1 Contract administration and performance

It can therefore be concluded that giving additional attention to payment mechanism and control of variations to the contract (dimensions of contract administration) would result into significant improvement in the performance of road maintenance projects.

5.4.2 Relationship management and performance

The study proved that there was a link between relationship management and performance of road maintenance projects in Arua Municipality. This also followed an adequate consideration of various dimensions of relationship management during the study. It can therefore be concluded that addressing constraints of communication channels and dealing with disputes (dimensions of relationship management) properly would result into significant improvement in the performance of road maintenance projects.

5.4.3 Contract closure and performance

The study proved that there was a relationship between contract closure and performance of road maintenance projects in Arua Municipality. This also followed an adequate consideration of various dimensions of contract closure during the study. It can therefore be concluded that addressing gaps in final inspection and payments and stakeholder involvement (dimensions of contract closure) properly would result into significant improvement in the performance of road maintenance projects.

5.5 Recommendations

Findings of this study may guide the town clerk, technocrats, mayor or elected local leaders of Arua Municipality, other urban authorities and local governments in Uganda.

5.5.1 Recommendation on contract administration and performance

The study results revealed that there was a significant relationship between contract administration and performance of road maintenance projects. However, cases of variations to contracts were also attributed to fluctuation in prices due to delays in central government transfers. There is therefore need for Arua Municipal Council's management to lobby central government for increased road maintenance funding. Management should also set up a clear, quick and accurate payment system and to budget basing on realistic requirements of the works and actual funding projections so as to avoid delays in projects and subsequently avoid cases of variations to contracts in the Municipality.

5.5.2 Recommendation on relationship management and performance

The study results revealed that there was a significant link between relationship management and performance of road maintenance projects. However, laxity of both the contractors and contract managers was also cited as a possible cause of poor performance of projects in Arua Municipality. The Municipal management should therefore institute clear communication channels with service providers and put in place competent structures that can deal with disputes at their infancy. There is also need to include stringent penalties for unnecessary laxity in the road maintenance contracts. Internal audit and other over-site departments of the municipality should be strengthened to monitor contract progress closely. Regular contract management meetings involving all

stakeholders should also be instituted to make close follow ups on specific observations and recommendations.

The study also revealed that disputes were quite common in road maintenance projects. It is therefore recommended that contract specifications are clearly articulated and their terms and conditions strictly adhered to. This way, chances of disputes occurring can be greatly reduced.

5.5.3 Recommendation on contract closure and performance

The study results revealed that there was a significant relationship between contract closure and performance of road maintenance projects. However, concerns of competence of the technical staff were also raised during the study. It is therefore recommended that capacity of technical staff be properly built for them to fully understand and accurately implement provisions of the contract. Stringent performance measures should also be provided within contract clauses so that intentionally erring officials are adequately punished. Council should make a deliberate effort to involve all relevant stakeholders during the project process up to closure so that projects are owned by them and sustainability plans can be easily made and implemented.

5.6 Limitations of the study

This study faced the following two major limitations. The first limitation noted was reservation of opinions by some potential respondents because the research seemed to target performance of the organisation and some of its individual actors by extension. This limitation was mitigated by clear assurances to respondents that their information

was for academic purposes only. The second limitation of this study was non-return of questionnaires by various sampled respondents in the course of data collection. To mitigate this challenge, the researcher ensured that the research assistants followed up the respondents closely, agreeing on specific times to pick up the filled questionnaires.

5.7 Contributions of the study

The study results revealed that contract administration, relationship management and contract closure were all significantly linked to performance of road maintenance projects in Arua Municipality. This study has therefore added to the body of knowledge and it has emphasised the need to dedicate resources to the dimensions of the variables studied in order to expect better performance in the road sector and related works as a result of improved contract management.

5.8 Areas Recommended for Future Research

This study established that contract management only explains upto58.8% of the performance of road maintenance projects. This implies that the remaining 41.2% is explained by other factors. There is therefore need to explore other possible factors so as to benefit the road sector in general and Arua Municipality in particular.

The study concentrated on only three dimensions of the independent variable (contract management). Other dimensions of contract management can be studied further.

The geographical scope of this study was only limited to Arua Municipality. Other urban local governments can also be studied for purposes of comparison as well as in-depth understanding of the urban road maintenance trends.

This study was limited to road maintenance only. There are, however, other road interventions such as rehabilitation and upgrading which can also be further explored.

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APPENDICES

Appendix 1: Questionnaire

SECTION A: DEMOGRAPHICS

Dear Respondent, my name is Godfrey Aluonzi. I am a student of Uganda Management Institute, conducting a study on Contract management and Performance of Road Maintenance Projects in Arua Municipal Council. This study is being carried out in partial fulfillment of requirements for the award of Masters Degree in Management Studies (Project Planning and Management). You are kindly requested to spare a few minutes to answer the questions in this questionnaire. Your responses will be purely for academic purposes and will be treated with utmost confidentiality. Writing your name on this questionnaire is absolutely optional.

Please answer the questions by TICKING the alternative that is the most correct in your opinion. I am greatly privileged to have you as one of my respondents during this study. Thank you.

BACKGROUND INFORMATION		
	Level of Education	a) Primary b) Secondary c) Certificate d) Diploma e) Degree f) Others (Please specify)

SECTION B: CONTRACT MANAGEMENT

In this section, you are kindly requested to fill the questionnaire using the scale below to indicate the best option that reflects your opinion on each statement.

Scale: 5=Strongly Agree; 4=Agree; 3=Undecided, 2=Disagree and 1=Strongly Disagree.

CONTRACT ADMINISTRATION

S. NO.	PAYMENT MECHANISM	5	4	3	2	1
i	Arua Municipal Council ensures prompt payment to contractors and suppliers					
ii	All invoices (payments) to contractors and suppliers are cleared in less than 30days					
iii	Interim certificates are prepared for completed sections of work done before payments are made					
iv	Materials supplied are received in store before being paid for					
v	Inspection reports are prepared for every payment certificate to be honored					
vi	Payments for work done are done through the bank					

S. NO.	VARIATIONS TO THE CONTRACT	5	4	3	2	1
i	Cases of variation orders in road maintenance projects are common in Arua Municipality					
ii	Variation orders lead to increased costs					
iii	Variation orders increase project completion time					
iv	Variation orders delay procurement processes					
v	Cases of variation orders affect quality of work					
vi	Variation orders in road maintenance works are genuine					

RELATIONSHIP MANAGEMENT

S.NO.	COMMUNICATION CHANNELS	5	4	3	2	1
i	Arua Municipal Council maintains a cordial relationship with road maintenance contractors					
ii	Communication between AMC and contractors is done in writing					
iii	Site instructions to road maintenance contractors are written clearly					
iv	Contractors and suppliers express their concerns to the client (Municipal authority)					
v	Site meetings for road maintenance projects are organized regularly					
vi	Site instructions are only issued by the project manager					
vii	Each road project site has a clerk of works (client's representative)					
viii	Regular and routine feedback is given to suppliers or contractors concerning their performance of road maintenance					

S.NO.	DEALING WITH DISPUTES	5	4	3	2	1
i	Disputes occur regularly in contract management processes of Arua Municipal Council					
ii	Disputes affect final performance level of road maintenance projects in the Municipality					
iii	Arua Municipal Council resolves contract disputes amicably					
iv	All road contracts include an elaborate dispute resolution mechanism					
v	Contractors inform the client about likely incidences that may lead to disputes					
vi	There are no cases of disputes in road maintenance in the Municipality that need arbitration or litigation					

CONTRACT CLOSURE

S.NO.	INSPECTION & PAYMENTS	5	4	3	2	1
i	Final inspection of road projects is done when works are completed					
ii	Final contract audits are carried out on road maintenance projects					
iii	When contracts are being closed, all outstanding costs are settled					
iv	In cases of termination before project completion, all required procedures are completed					
v	Contractor's closing (physical and financial) statements are completed					
vi	Contract funds are reviewed and excess funds reallocated to other projects					
vii	Contractors promptly correct all defects that arise during the defects liability period					
viii	Retained funds are promptly paid to contractors after defects liability period					

S.NO.	STAKEHOLDER INVOLVEMENT	5	4	3	2	1
i	Contract management records are properly filed during project execution					
ii	Project completion reports are prepared and submitted					
iii	Completion reports are stored in the archives					
iv	Community members, leaders and other stakeholders are involved during implementation of road projects					
v	Project management committees are put in place for each major road project					
vi	All project participants and stakeholders are involved in the close-out process					

vii	Road maintenance projects are officially commissioned after completion					
viii	Post-project surveys are conducted to solicit feedback on the project from the project team, road users, and other stakeholders					

SECTION C: PERFORMANCE OF THE PROJECTS

S. NO.	PROJECT PERFORMANCE- TIME	5	4	3	2	1
i	Road maintenance projects in Arua Municipality are completed on time					
ii	Shorter construction time leads to improved client satisfaction					
iii	Increased construction time leads to a drop in quality standards due to rushed work					
iv	Time management issues are always identified and brought to the attention of authorities for improvement					
v	In order to reduce construction time, design reviews and project variations need to be minimized					
vi	Delays are always avoided in the road maintenance implementation process					
vii	Materials for road works are mobilized to site in time					
viii	Funds are available to purchase the required materials					
ix	Funds are available to pay contractors					
x	There is security for materials on site					

S. NO.	PROJECT PERFORMANCE- QUALITY	5	4	3	2	1
i	Arua Municipal Council recognizes the importance of good quality road works					
ii	Contractors implement road maintenance works according to specifications					
iii	Arua Municipal Council leadership (client) is happy with the quality of work done on urban roads					
iv	Arua Municipal Council has competent staff who are capable of ensuring quality road works					
v	Road users are happy with the quality of work done on urban roads					
vi	Road maintenance materials are of good quality					

S. NO.	PROJECT PERFORMANCE- COST	5	4	3	2	1
i	Cost control is important in road maintenance management					
ii	To reduce the cost of road projects, variations should be minimized					
iii	Good workmanship on the roads leads to a decrease in road maintenance cost					
iv	Relevant road maintenance equipment is available on within the Municipality					
v	Required materials for road works are available within Arua Municipality					
vi	Projects are completed within approved budget ceiling					

Appendix 2: Interview Guide

In your opinion, how is contract administration handled in Arua Municipal Council?

- PAYMENT MECHANISM

- VARIATIONS TO THE CONTRACT

How does this affect performance of road maintenance projects?

In your opinion, what is the relationship between contract managers and road maintenance contractors of Arua Municipal Council?

- COMMUNICATION CHANNELS

- DEALING WITH DISPUTES

How does this affect performance of road maintenance projects?

In your opinion, are there mechanisms in place to handle contract termination in Arua Municipal Council?

-FINAL INSPECTION PROCESSES

-FINAL PAYMENT PROCEDURES

-FILING & ARCHIVING PROCESSES

-STAKEHOLDER INVOLVEMENT

How does this arrangement affect performance of road maintenance projects?

Appendix 3: Instrument Reliability Analysis and Testing

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.952	.954	64

Appendix 4: Detailed Study Statistical Analysis Results

Contract Administration

Payment mechanism:

Arua Municipal Council ensures prompt payment of contractors and suppliers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.3	2.3
	Disagree	20	22.7	23.0	25.3
	Undecided	5	5.7	5.7	31.0
	Agree	35	39.8	40.2	71.3
	Strongly Agree	25	28.4	28.7	100.0
	Total	87	98.9	100.0	
Missing	System	1	1.1		
Total		88	100.0		

All payments to contractors and suppliers are cleared in less than 30 days

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	3.4	3.6	3.6
	Disagree	22	25.0	26.2	29.8
	Undecided	15	17.0	17.9	47.6
	Agree	29	33.0	34.5	82.1
	Strongly Agree	15	17.0	17.9	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Interim certificates are prepared for completed sections of work done before payments are made

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.1	1.2	1.2
	Disagree	6	6.8	7.1	8.2
	Undecided	15	17.0	17.6	25.9
	Agree	28	31.8	32.9	58.8
	Strongly Agree	35	39.8	41.2	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Materials supplied are received in store before being paid for

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	4.5	4.8	4.8
	Disagree	9	10.2	10.7	15.5
	Undecided	12	13.6	14.3	29.8
	Agree	26	29.5	31.0	60.7
	Strongly Agree	33	37.5	39.3	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Inspection reports are prepared for every payment certificate to be honored

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.4	2.4
	Disagree	5	5.7	5.9	8.2
	Undecided	8	9.1	9.4	17.6
	Agree	41	46.6	48.2	65.9
	Strongly Agree	29	33.0	34.1	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Payments for work done are made through the bank

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.3	2.3
	Disagree	2	2.3	2.3	4.7
	Undecided	7	8.0	8.1	12.8
	Agree	20	22.7	23.3	36.0
	Strongly Agree	55	62.5	64.0	100.0
	Total	86	97.7	100.0	
Missing	System	2	2.3		
Total		88	100.0		

Variations to the contract:

Cases of variation orders in road maintenance projects are common in Arua Municipality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.3	2.3
	Disagree	10	11.4	11.6	14.0
	Undecided	11	12.5	12.8	26.7
	Agree	40	45.5	46.5	73.3
	Strongly Agree	23	26.1	26.7	100.0
	Total	86	97.7	100.0	
Missing	System	2	2.3		
Total		88	100.0		

Variation orders lead to increased costs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.4	2.4
	Disagree	7	8.0	8.3	10.7
	Undecided	12	13.6	14.3	25.0
	Agree	37	42.0	44.0	69.0
	Strongly Agree	26	29.5	31.0	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Variation orders increase project completion time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	3.4	3.6	3.6
	Disagree	6	6.8	7.1	10.7
	Undecided	11	12.5	13.1	23.8
	Agree	38	43.2	45.2	69.0
	Strongly Agree	26	29.5	31.0	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Variation orders delay procurement processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	3.4	3.6	3.6
	Disagree	15	17.0	18.1	21.7
	Undecided	8	9.1	9.6	31.3
	Agree	37	42.0	44.6	75.9
	Strongly Agree	20	22.7	24.1	100.0
	Total	83	94.3	100.0	
Missing	System	5	5.7		
Total		88	100.0		

Cases of variation orders affect quality of work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	10	11.4	11.8	11.8
	Disagree	18	20.5	21.2	32.9
	Undecided	9	10.2	10.6	43.5
	Agree	28	31.8	32.9	76.5
	Strongly Agree	20	22.7	23.5	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Variation orders in road maintenance works are genuine

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	3.4	3.5	3.5
	Disagree	9	10.2	10.5	14.0
	Undecided	17	19.3	19.8	33.7
	Agree	39	44.3	45.3	79.1
	Strongly Agree	18	20.5	20.9	100.0
	Total	86	97.7	100.0	
Missing	System	2	2.3		
Total		88	100.0		

Relationship management

Communication channels:

Arua Municipal Council maintains a cordial relationship with road maintenance contractors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.4	2.4
	Disagree	6	6.8	7.1	9.4
	Undecided	5	5.7	5.9	15.3
	Agree	37	42.0	43.5	58.8
	Strongly Agree	35	39.8	41.2	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Communication between AMC and contractors is done in writing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	1.1	1.2	1.2
	Undecided	8	9.1	9.4	10.6
	Agree	35	39.8	41.2	51.8
	Strongly Agree	41	46.6	48.2	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Site instructions to road maintenance contractors are written clearly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.1	1.2	1.2
	Disagree	3	3.4	3.5	4.7
	Undecided	9	10.2	10.6	15.3
	Agree	37	42.0	43.5	58.8
	Strongly Agree	35	39.8	41.2	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Contractors and suppliers express their concerns to the client (Municipal Authority)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	5	5.7	5.9	5.9
	Undecided	5	5.7	5.9	11.8
	Agree	49	55.7	57.6	69.4
	Strongly Agree	26	29.5	30.6	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Site meetings for road maintenance projects are organised regularly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	6.8	7.1	7.1
	Disagree	12	13.6	14.1	21.2
	Undecided	16	18.2	18.8	40.0
	Agree	39	44.3	45.9	85.9
	Strongly Agree	12	13.6	14.1	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Site instructions are only issued by the projects manager

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	5.7	6.0	6.0
	Disagree	11	12.5	13.1	19.0
	Undecided	19	21.6	22.6	41.7
	Agree	31	35.2	36.9	78.6
	Strongly Agree	18	20.5	21.4	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Each road project site has a clerk of works (client's representative)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	4.5	4.7	4.7
	Disagree	7	8.0	8.2	12.9
	Undecided	18	20.5	21.2	34.1
	Agree	29	33.0	34.1	68.2
	Strongly Agree	27	30.7	31.8	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Regular and routine feedback is given to suppliers or contractors concerning their performance or road maintenance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	5.7	5.9	5.9
	Disagree	5	5.7	5.9	11.8
	Undecided	16	18.2	18.8	30.6
	Agree	36	40.9	42.4	72.9
	Strongly Agree	23	26.1	27.1	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Dealing with disputes:

Disputes occur regularly in contract management processes of Arua Municipal Council

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	3.4	3.5	3.5
	Disagree	22	25.0	25.9	29.4
	Undecided	16	18.2	18.8	48.2
	Agree	23	26.1	27.1	75.3
	Strongly Agree	21	23.9	24.7	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Disputes affect final performance level of road maintenance projects in the Municipality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.1	1.2	1.2
	Disagree	12	13.6	14.1	15.3
	Undecided	5	5.7	5.9	21.2
	Agree	36	40.9	42.4	63.5
	Strongly Agree	31	35.2	36.5	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Arua Municipal Council resolves contract disputes amicably

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.3	2.3
	Disagree	9	10.2	10.3	12.6
	Undecided	12	13.6	13.8	26.4
	Agree	41	46.6	47.1	73.6
	Strongly Agree	23	26.1	26.4	100.0
	Total	87	98.9	100.0	
Missing	System	1	1.1		
Total		88	100.0		

All road contracts include an elaborate dispute resolution mechanism

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	5.7	6.0	6.0
	Disagree	13	14.8	15.5	21.4
	Undecided	24	27.3	28.6	50.0
	Agree	27	30.7	32.1	82.1
	Strongly Agree	15	17.0	17.9	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Contractors inform the client about likely incidences that may lead to disputes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	4.5	4.8	4.8
	Disagree	12	13.6	14.5	19.3
	Undecided	17	19.3	20.5	39.8
	Agree	29	33.0	34.9	74.7
	Strongly Agree	21	23.9	25.3	100.0
	Total	83	94.3	100.0	
Missing	System	5	5.7		
Total		88	100.0		

There are no cases of disputes in road maintenance in the Municipality that need arbitration or litigation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	18	20.5	21.4	21.4
	Disagree	20	22.7	23.8	45.2
	Undecided	14	15.9	16.7	61.9
	Agree	19	21.6	22.6	84.5
	Strongly Agree	13	14.8	15.5	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Contract closure

Inspection and payment:

Final inspection of road projects is done when works are completed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	4.5	4.7	4.7
	Disagree	4	4.5	4.7	9.3
	Undecided	6	6.8	7.0	16.3
	Agree	19	21.6	22.1	38.4
	Strongly Agree	53	60.2	61.6	100.0
	Total	86	97.7	100.0	
Missing	System	2	2.3		
Total		88	100.0		

Final contract audits are carried out on road maintenance projects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.1	1.2	1.2
	Disagree	6	6.8	7.2	8.4
	Undecided	11	12.5	13.3	21.7
	Agree	36	40.9	43.4	65.1
	Strongly Agree	29	33.0	34.9	100.0
	Total	83	94.3	100.0	
Missing	System	5	5.7		
Total		88	100.0		

When contracts are being closed, all outstanding costs are settled

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	6.8	7.3	7.3
	Disagree	11	12.5	13.4	20.7
	Undecided	16	18.2	19.5	40.2
	Agree	26	29.5	31.7	72.0
	Strongly Agree	23	26.1	28.0	100.0
	Total	82	93.2	100.0	
Missing	System	6	6.8		
Total		88	100.0		

In cases of termination before project completion, all required procedures are completed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	5.7	6.0	6.0
	Disagree	8	9.1	9.6	15.7
	Undecided	12	13.6	14.5	30.1
	Agree	30	34.1	36.1	66.3
	Strongly Agree	28	31.8	33.7	100.0
	Total	83	94.3	100.0	
Missing	System	5	5.7		
Total		88	100.0		

Contractor's closing physical and financial statements are completed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.1	1.2	1.2
	Disagree	5	5.7	6.0	7.2
	Undecided	39	44.3	47.0	54.2
	Agree	25	28.4	30.1	84.3
	Strongly Agree	13	14.8	15.7	100.0
	Total	83	94.3	100.0	
Missing	System	5	5.7		
Total		88	100.0		

Contract funds are reviewed and excess funds reallocated to other projects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	4.5	4.8	4.8
	Disagree	9	10.2	10.8	15.7
	Undecided	22	25.0	26.5	42.2
	Agree	31	35.2	37.3	79.5
	Strongly Agree	17	19.3	20.5	100.0
	Total	83	94.3	100.0	
Missing	System	5	5.7		
Total		88	100.0		

Contractors promptly correct all defects that arise during the defects liability period

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	7	8.0	8.5	8.5
	Disagree	15	17.0	18.3	26.8
	Undecided	15	17.0	18.3	45.1
	Agree	33	37.5	40.2	85.4
	Strongly Agree	12	13.6	14.6	100.0
	Total	82	93.2	100.0	
Missing	System	6	6.8		
Total		88	100.0		

Retained funds are promptly paid to contractors after defects liability period

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.1	1.2	1.2
	Disagree	10	11.4	12.3	13.6
	Undecided	24	27.3	29.6	43.2
	Agree	22	25.0	27.2	70.4
	Strongly Agree	24	27.3	29.6	100.0
	Total	81	92.0	100.0	
Missing	System	7	8.0		
Total		88	100.0		

Stakeholder involvement:

Contract management records are properly filed during project execution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.1	1.2	1.2
	Disagree	2	2.3	2.4	3.7
	Undecided	11	12.5	13.4	17.1
	Agree	29	33.0	35.4	52.4
	Strongly Agree	39	44.3	47.6	100.0
	Total	82	93.2	100.0	
Missing	System	6	6.8		
Total		88	100.0		

Project completion reports are prepared and submitted

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	3	3.4	3.7	3.7
	Undecided	8	9.1	9.9	13.6
	Agree	34	38.6	42.0	55.6
	Strongly Agree	36	40.9	44.4	100.0
	Total	81	92.0	100.0	
Missing	System	7	8.0		
Total		88	100.0		

Completion reports are stored in the archives

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.4	2.4
	Disagree	4	4.5	4.9	7.3
	Undecided	12	13.6	14.6	22.0
	Agree	31	35.2	37.8	59.8
	Strongly Disagree	33	37.5	40.2	100.0
	Total	82	93.2	100.0	
Missing	System	6	6.8		
Total		88	100.0		

Community members, leaders and other stakeholders are involved during implementation of road projects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	6.8	7.2	7.2
	Disagree	5	5.7	6.0	13.3
	Undecided	5	5.7	6.0	19.3
	Agree	33	37.5	39.8	59.0
	Strongly Agree	34	38.6	41.0	100.0
	Total	83	94.3	100.0	
Missing	System	5	5.7		
Total		88	100.0		

All project participants and stakeholders are involved in the close-out process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	9.1	9.8	9.8
	Disagree	9	10.2	11.0	20.7
	Undecided	19	21.6	23.2	43.9
	Agree	35	39.8	42.7	86.6
	Strongly Agree	11	12.5	13.4	100.0
	Total	82	93.2	100.0	
Missing	System	6	6.8		
Total		88	100.0		

Road maintenance projects are officially commissioned after completion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	13	14.8	16.0	16.0
	Disagree	12	13.6	14.8	30.9
	Undecided	10	11.4	12.3	43.2
	Agree	24	27.3	29.6	72.8
	Strongly Agree	22	25.0	27.2	100.0
	Total	81	92.0	100.0	
Missing	System	7	8.0		
Total		88	100.0		

Post-project surveys are conducted to solicit feedback on the project from the project team, road users and other stakeholders

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	9.1	9.8	9.8
	Disagree	14	15.9	17.1	26.8
	Undecided	24	27.3	29.3	56.1
	Agree	26	29.5	31.7	87.8
	Strongly Agree	10	11.4	12.2	100.0
	Total	82	93.2	100.0	
Missing	System	6	6.8		

Completion reports are stored in the archives

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.4	2.4
	Disagree	4	4.5	4.9	7.3
	Undecided	12	13.6	14.6	22.0
	Agree	31	35.2	37.8	59.8
	Strongly Disagree	33	37.5	40.2	100.0
	Total	82	93.2	100.0	
Missing	System	6	6.8		
Total		88	100.0		

Performance of road maintenance projects

Time:

Road maintenance projects in Arua Municipality are completed on time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	7	8.0	8.2	8.2
	Disagree	34	38.6	40.0	48.2
	Undecided	8	9.1	9.4	57.6
	Agree	25	28.4	29.4	87.1
	Strongly Agree	11	12.5	12.9	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Shorter construction time leads to improved client satisfaction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	9	10.2	10.7	10.7
	Disagree	10	11.4	11.9	22.6
	Undecided	9	10.2	10.7	33.3
	Agree	39	44.3	46.4	79.8
	Strongly Agree	17	19.3	20.2	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Increased construction time leads to a drop in quality standards due to rushed work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	9.1	9.6	9.6
	Disagree	18	20.5	21.7	31.3
	Undecided	13	14.8	15.7	47.0
	Agree	21	23.9	25.3	72.3
	Strongly Agree	23	26.1	27.7	100.0
	Total	83	94.3	100.0	
Missing	System	5	5.7		
Total		88	100.0		

Time management issues are always identified and brought to the attention of authorities for improvement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	4	4.5	4.8	4.8
	Undecided	13	14.8	15.5	20.2
	Agree	37	42.0	44.0	64.3
	Strongly Agree	30	34.1	35.7	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

In order to reduce construction time, design reviews and project variations need to be minimised

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.1	1.2	1.2
	Disagree	6	6.8	7.1	8.3
	Undecided	12	13.6	14.3	22.6
	Agree	40	45.5	47.6	70.2
	Strongly Agree	25	28.4	29.8	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Funds are available to purchase the required materials

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.4	2.4
	Disagree	12	13.6	14.5	16.9
	Undecided	14	15.9	16.9	33.7
	Agree	37	42.0	44.6	78.3
	Strongly Agree	18	20.5	21.7	100.0
	Total	83	94.3	100.0	
Missing	System	5	5.7		
Total		88	100.0		

Materials for road works are mobilised to site in time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	6.8	7.1	7.1
	Disagree	27	30.7	32.1	39.3
	Undecided	7	8.0	8.3	47.6
	Agree	24	27.3	28.6	76.2
	Strongly Agree	20	22.7	23.8	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Delays are always avoided in the road maintenance implementation process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	5.7	6.0	6.0
	Disagree	29	33.0	34.5	40.5
	Undecided	9	10.2	10.7	51.2
	Agree	18	20.5	21.4	72.6
	Strongly Agree	23	26.1	27.4	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Funds are available to pay contractors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.4	2.4
	Disagree	10	11.4	11.9	14.3
	Undecided	15	17.0	17.9	32.1
	Agree	37	42.0	44.0	76.2
	Strongly Agree	20	22.7	23.8	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

There is security for materials on site

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	6.8	7.1	7.1
	Disagree	17	19.3	20.2	27.4
	Undecided	12	13.6	14.3	41.7
	Agree	35	39.8	41.7	83.3
	Strongly Agree	14	15.9	16.7	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Quality:

Arua Municipal Council recognizes the importance of good quality road works

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	7	8.0	8.1	8.1
	Undecided	2	2.3	2.3	10.5
	Agree	36	40.9	41.9	52.3
	Strongly Agree	41	46.6	47.7	100.0
	Total	86	97.7	100.0	
Missing	System	2	2.3		
Total		88	100.0		

Contractors implement road maintenance works according to specifications

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.4	2.4
	Disagree	9	10.2	10.7	13.1
	Undecided	7	8.0	8.3	21.4
	Agree	43	48.9	51.2	72.6
	Strongly Agree	23	26.1	27.4	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Arua Municipal Council leadership (client) is happy with the quality of work done on urban roads

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	4.5	4.8	4.8
	Disagree	14	15.9	16.7	21.4
	Undecided	12	13.6	14.3	35.7
	Agree	37	42.0	44.0	79.8
	Strongly Agree	17	19.3	20.2	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Road maintenance materials are of good quality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	6.8	7.1	7.1
	Disagree	18	20.5	21.4	28.6
	Undecided	11	12.5	13.1	41.7
	Agree	32	36.4	38.1	79.8
	Strongly Agree	17	19.3	20.2	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Arua Municipal Council has competent staff who are capable of ensuring quality road works

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	6.8	7.1	7.1
	Disagree	8	9.1	9.5	16.7
	Undecided	4	4.5	4.8	21.4
	Agree	28	31.8	33.3	54.8
	Strongly Agree	38	43.2	45.2	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Road users are happy with the quality of work done on urban roads

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	9.1	9.5	9.5
	Disagree	25	28.4	29.8	39.3
	Undecided	8	9.1	9.5	48.8
	Agree	30	34.1	35.7	84.5
	Strongly Agree	13	14.8	15.5	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Cost:

Cost control is important in road maintenance management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	1.1	1.2	1.2
	Undecided	3	3.4	3.6	4.8
	Agree	30	34.1	35.7	40.5
	Strongly Agree	50	56.8	59.5	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

To reduce the cost of road maintenance projects, variations should be minimised

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.4	2.4
	Disagree	2	2.3	2.4	4.8
	Undecided	7	8.0	8.3	13.1
	Agree	44	50.0	52.4	65.5
	Strongly Agree	29	33.0	34.5	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Good workmanship on the roads leads to a decrease in road maintenance cost

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.4	2.4
	Disagree	7	8.0	8.2	10.6
	Undecided	8	9.1	9.4	20.0
	Agree	27	30.7	31.8	51.8
	Strongly Agree	41	46.6	48.2	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Relevant road maintenance equipment is available within the Municipality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.3	2.4	2.4
	Disagree	12	13.6	14.1	16.5
	Undecided	9	10.2	10.6	27.1
	Agree	38	43.2	44.7	71.8
	Strongly Agree	24	27.3	28.2	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Required materials for road works are available within Arua Municipality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	11	12.5	13.1	13.1
	Disagree	28	31.8	33.3	46.4
	Undecided	7	8.0	8.3	54.8
	Agree	21	23.9	25.0	79.8
	Strongly Agree	17	19.3	20.2	100.0
	Total	84	95.5	100.0	
Missing	System	4	4.5		
Total		88	100.0		

Projects are completed within approved budget ceiling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	7	8.0	8.2	8.2
	Disagree	26	29.5	30.6	38.8
	Undecided	8	9.1	9.4	48.2
	Agree	28	31.8	32.9	81.2
	Strongly Agree	16	18.2	18.8	100.0
	Total	85	96.6	100.0	
Missing	System	3	3.4		
Total		88	100.0		

Contract management and performance of road maintenance projects

		Contract management	Performance of the projects
Contract management	Pearson Correlation	1	.761**
	Sig. (2-tailed)		.000
	N	88	87
Performance of the projects	Pearson Correlation	.761**	1
	Sig. (2-tailed)	.000	
	N	87	87

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

Contract administration, relationship management, contract closure and performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.776[a]	.603	.588	.43444	.603	40.932	3	81	.000

a. Predictors: (Constant), Contract closure, Contract administration, Relationship management

b. Dependent Variable: Performance of the projects

Appendix 5: Summary of Qualitative Data Results

Contract administration

One top manager of Arua Municipality said he had never witnessed circumstances where contractors were paid beyond contractual terms. Another top manager of the Municipality submitted that payment for works did not delay because the money for projects was always made ready before contracts were awarded to contractors, especially so with the introduction of force account policy of road maintenance in the District, Urban and Community Access Roads (DUCAR) agencies.

One manager acknowledged that variations to contacts in the Municipality existed but associated them to fluctuation in prices as a result of delays in central government transfers that could change the cost of contracts. Another leader also agreed with the occurrence of some contract variations in the agency noting both positive and negative effects on a project. He said "I personally do not like variations because contractors who do more work should be paid more money for the extra work done. This brings problems to contract managers."

Relationship management

One top manager alluded to the rather poor communication on matters of contract management, especially sharing of award and signing information within the Municipality. Another manager clarified that the Municipality usually appoints a contract manager for every project, who should be in close contact with the contractors. He added that contractors were required to keep a track record of all stages the project had undergone. He however acknowledged that in certain instances, contractors did not have these record books, also meant to keep schedules of project meetings, explaining that lack of proper communication could best be seen when project works were completed and complaints then arose of some shoddy work. He said the project supervisors were supposed to be in close contact with the contractors all the time, while meetings were called when there was a problem that needed to be improved on.

One top manager suggested organisation of regular meetings between the contract manager and contractors (with minutes) so as to avoid future problems (disputes). “We normally call parties involved in disputes to round-table meetings, giving benefits of doubt. We can then listen to one another in the dialogue meeting. However, in some extreme cases some disputes are resolved in courts of law since the contract agreements are well spelt out with their terms and conditions to be followed,” he said.

Another top manager also pointed out that dispute settlement and resolution are part of the terms and conditions of the contract agreements signed between the client and contractor, noting that they are impersonal. He also agreed that disputes were mostly resolved administratively through dialogue but those who were not satisfied opted for the courts of law directly.

Contract closure

One top manager stated that inspection and supervision of contract works was done by technical staff while the politicians and other stakeholders often went for monitoring, with limited reports given. Another Municipal manager agreed with this position.

One top manager also confirmed that final payment procedures were followed with final certificate issued after completion of work, emphasising that he had never heard of contractors being paid whole sums of money before work was completed. Another top manager concurred, further adding that a certain amount of the money was usually retained by management until the contractor made good all defects and that council would use such retained funds to fix the problem in case the contractor forfeited the obligation, adding that if no defect occurred during the liability period, then the contractor was paid the retained balance of the contract sum.

A top manager submitted that filing and archiving of records were carried out by the various technical offices. Another top manager meanwhile, emphasised the importance and need for

documentation for external users such as auditors, inspectors etcetera. He lamented on the negligible documentation in Arua Municipality.

One top manager said that he and his team monitored road maintenance projects but advised that a small road user committee be set up at a lower level, which might comprise local council 1 chairpersons as this would increase efficiency and effectiveness of the contract works. Another manager stated that "stakeholder involvement is both positive and negative adding that the question of how satisfied or dissatisfied a stakeholder is with performance of project work is answered by how involved the different stakeholders are right from the initial stages of the project implementation." He also suggested appointment of project management committees to monitor the project work since their satisfaction shall most likely be the general public's satisfaction too.

Appendix 6: Introduction and Acceptance Letters

Appendix 7: Table for Determining Sample Size for Research Activities