MAKERERE UNIVERSITY

CONTRACTUAL GOVERNANCE, INTELLECTUAL CAPITAL AND PERFORMANCE OF ROAD CONSTRUCTION PROJECTS IN KAMPALA

BY

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PLAN A

MARCH 2021

DECLARATION

I hereby declare that this dissertation is my original work and it has never been submitted to this or any other institution of higher learning for any award.

Signature..... Date..29/3/2021

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APPROVAL

This is to certify that this dissertation has been submitted with our approval as University academic supervisors

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OF ABBREVIATIONS

FY:	Financial Year
KCCA:	Kampala Capital City Authority
KIIDP:	Kampala Institutional and Infrastructure Development Project
PMBOK:	Project Management Body of Knowledge
PMI:	Project Management Institute

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ABSTRACT

This study was intended to examine the relationship between contractual governance, intellectual capital and the performance of road construction projects in Kampala. The research problem was that despite heavy investment in road construction and maintenance projects by KCCA, majority of road construction projects are not completed within the estimated time, cost quality and scope resulting into high stakeholder dissatisfaction. The study was based on a cross sectional design approach where 63 road construction projects in Kampala were targeted. A questionnaire was used to collect primary data from respondents. Results show that contractual governance and project performance are significantly related. There is a positive significant relationship between intellectual capital and project performance in road projects in Kampala. Findings confirm a positive and significant predictive potential of intellectual capital on project performance. However, contractual governance is found not to be a significant predictor of performance in this context. More to that, contractual governance and intellectual capital explain an overall of 10.7% of the variance in performance of road construction projects in Kampala. It was recommended that KCCA should immediately look at which measures are in place in the current road construction projects to ensure that contracts are followed as agreed. There is need to review contracts vis a vis performance on a regular basis, preferable quarterly, instead of the beginning and the end of a project where little corrective action can be done. There is also need to train project managers on how to harness intellectual capital in order to boost the chances of road project performance. Such training which should be undertaken at least once every three months will not necessarily guarantee good performance but will boost the chances of a project performing to (and beyond) expected levels. Regarding intellectual capital, projects need to focus on building a multidimensional competitive or performance advantage by creating unique competencies to develop unique relationships with stakeholders.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Projects feature prominently on the organizational landscape, being considered one of the most effective and efficient methods for achieving organizational tasks and goals (Lam et al., 2004). According to Baccarini (1999), project performance can be explained using two success concepts: project management success and product success. The first concept focuses upon the successful accomplishment of the project time, cost and quality, which can be measured in terms of meeting the project budget, schedule, and conformance to functional and technical specifications respectively. The later concept deals with the effects of the project's final product with three key components which are; to satisfy the project goal, purpose and stakeholders.

Road construction projects are not any different. Road construction is a crucial driving force for economic growth in any country, and sustained access to roads is essential to improve living standard (Benamghar & Limi 2011). In Kampala for example, KCCA has focused on improving road infrastructure through emergency repairs and rehabilitation of key roads across the five divisions. Such road projects need to perform well in terms of being completed in time, within budget, acceptable quality level and to the satisfaction of the clients (Shahrzad & Hamidreza, 2011).

However, over 50% of road construction projects in Kampala have failed to meet their set performance standards as they were completed past the scheduled time, overshot budgets and at

times fell short of quality expectations which have led to loss of huge sums of money (Sepuya, 2008).

Although empirical studies have been carried out to explain the poor performance using different predictor variables, the influence of contractual governance and intellectual capital has not been duly studied. Contractual governance refer to the formal arrangements made by government and the private sector in the form of contract clauses pertaining to party obligations, sanctions, role division, monitoring, and contingency plans (Van Den Hurk & Verhoest, 2016).

Furthermore, Douglas, Roger, and Scott (2005) argue that quality is not automatic but can only be accomplished if the right combination of invisible and physical resources is used. However, Kamukama, Ahiauzu, and Ntayi (2010) argue that better results can be achieved if invisible resources (intellectual capital) constitute a substantial percentage of total assets to be used. Likewise, Goh and Ryan (2005) claim that though physical capital is crucial for projects' operations, it is eventually the intellectual capital that determines the quality of services provided to the stakeholders.

There are however minimal studies that have specifically addressed the impact of contractual governance and intellectual capital on the performance of road construction projects in Kampala. Consequently, this study intends to close the empirical literature gap by enabling KCCA to improve the performance of their road construction projects by focusing on contractual governance and intellectual capital.

1.2 Problem Statement

Despite the heavy investment in road construction and maintenance projects by KCCA, majority of road construction projects are not completed within the estimated time, cost quality and scope resulting into high stakeholder dissatisfaction (Otim & Alinatwe, 2010). A case in point is the upgrading of Jakaana - 0.65km, Nsooba - 0.75km, Kafeero - 0.8km, Lumasi - 0.55km, Muganzi - Awongera-1.6km, and Waligo - 4.2km in Kawempe division; and Bakuli market lane - 1.0km, Nakibinge-Bawalakata - 2.9km, Mackay-1.6km and Sembera - 1.5km which took 2 years to complete from when the contract was signed in June 2016 until its completion in April 2018; eventually leading to cost increment from UGX. 52,586,000,000 to UGX. 54,876,070,942 (KCCA-Running Road Project Plan FY 2018/19).

These could be attributed to contractual disputes arising between contractors and project owners (Alinatwe et al, 2007; Kansiime, Ntayi & Ahimbisibwe, 2017) arising out of weak contractual governance; and as well as weak intellectual capital. As evidenced in the background, given that the performance of projects is critical, there is need to investigate the relationship between contractual governance, intellectual capital and the performance of road construction projects in Kampala.

1.3 Purpose of the Study

To examine the relationship between contractual governance, intellectual capital and the performance of road construction projects in Kampala.

1.4 Study Objectives

(i) To examine the relationship between contractual governance and the performance of road construction projects in Kampala

(ii) To examine the relationship between intellectual capital and the performance of road construction projects in Kampala

(iii) To examine the predictive potential of contractual governance and intellectual capital on the performance of road construction projects in Kampala

1.5 Research Questions

(i) What is the relationship between contractual governance and the performance of road construction projects in Kampala?

(ii) What is the relationship between intellectual capital and the performance of road construction projects in Kampala?

(iii) What is the predictive potential of contractual governance and intellectual capital on the performance of road construction projects in Kampala?

1.6 Scope of the Study

1.6.1 Geographical Scope

The study focused on selected road construction projects undertaken by the Kampala Capital City Authority in the 5 divisions that make up Kampala District. KCCA was selected to be the study area because there are high incidences of poor road construction projects in Kampala, with

wider gaps in contractual governance and intellectual capital management. The Authority also has the benefit of being located in the major capital city (Kampala) of Uganda and as such there are many road construction projects that are undertaken in Kampala unlike in any other part of the country.

Also to note is that, Kampala District was easily accessible to the researcher. Road construction projects were selected for this study because they have the biggest budget of over 40% of the entire budget of Kampala Capital City Authority have a wide scope covering over 5 divisions in Kampala.

1.6.2 Subject Scope

The study focused on establishing the relationship between contractual governance, intellectual capital and performance of road construction projects in Kampala.

1.7 Significance of the Study

a) The results and recommendations of the study will enable policy makers and other key players in Kampala Capital City Authority, contractors and consultants among many others plus other stakeholders involved in road construction projects improve on the performance of Road construction projects in the country.

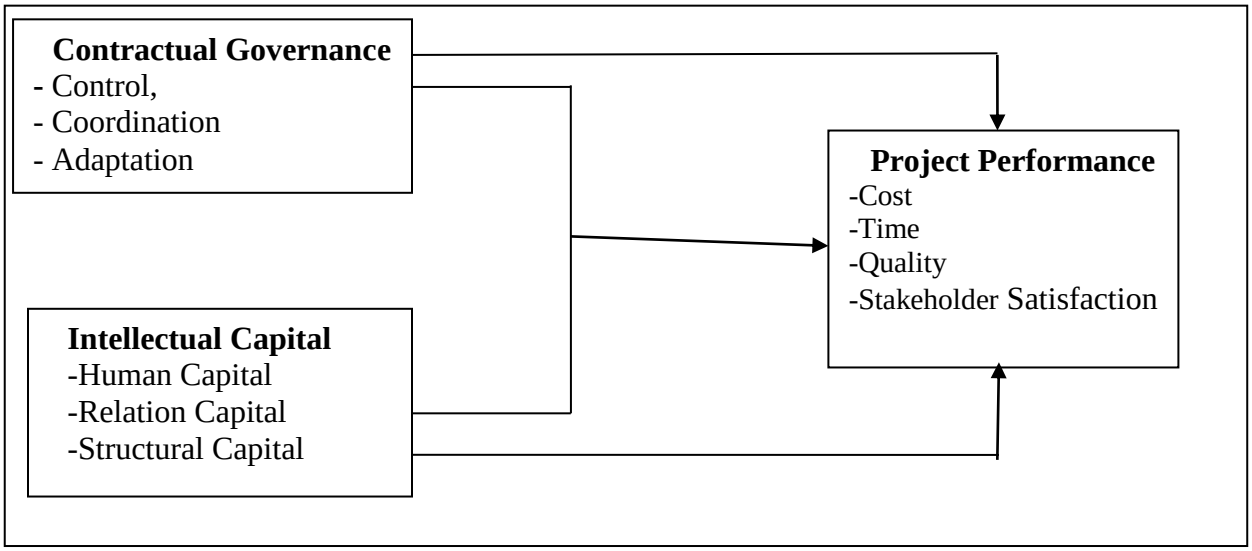
b) The study will enable key important parties i.e. government and sponsors in the road construction sector to understand the impact of Road construction projects to the key stakeholders in terms of meeting the project expectations.

c) The study will add to the existing literature and reference material for further studies on the concept of project performance and Road construction projects in Uganda especially where there's still inadequate research.

1.8 Conceptual Framework

Figure 1

Conceptual Framework



Source: *Adopted and modified from literature (Schepker et al. 2014; Koontz & Craig, 2012; Benítez-Ávila, Hartmann, & Henseler, 2018)*

1.9 Explanation of Conceptual Framework

The conceptual frame work above presupposes relationships between two independent variables (contractual governance and intellectual capital), and the dependent variable, performance of projects.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents the literature reviewed on the study variables as shown in the conceptual framework. Although the primary concern of this work is related to the variables that explain the performance or road construction projects, it is essential to recognize that the source of this concern is the evidence of a relationship between these variables. Consequently, in the first part of this section, we review the literature examining contractual governance and intellectual capital, and in the second one, we review the literature concerning the relationships for the specific variables. After looking at the literature available, the researcher identified knowledge gaps that prompted this quest to carry out this study.

2.1 Project Performance

A project is a temporary endeavor undertaken to create a unique product, service, or result (PMI, 2008), and as such it is imperative that they perform well. Shahrzad & Hamidreza (2011) opined that project performance is about how well a project can be done. To establish the performance factors, project success has been widely considered by many scholars as an indicator of good project performance (Gwahula, 2016). Project success can be categorized into the objective measures of time, cost, safety and environmental considerations, and subjective measures of quality, functionality and satisfaction of project participants (Shahrzad & Hamidreza,, 2011, Chan & Chan, 2004).

Gwahula (2016) however argued that the three traditional project success performance measures of time, cost and quality are not independent. Several scholars such as Abdullah *et al*, (2010), Basheka & Tumutegyereize (2013) noted that the three traditional project performance measures depend on several other factors such as contractual adherence, the nature of the project, the nature of human resource deployed, technology used, and risks involved among many others.

2.2 Contractual Governance

The performance of road construction projects has been a subject of concern in Uganda and many countries for quite some time (Meyer, Witt, Kashiwagi & Kashiwagi, 2010). One of the reasons behind such a phenomenon is the adverse relationship between the contracted parties (Meng 2012). This therefore has made fostering co-operation among parties through a contract to become inevitable (Beuve and Saussier 2012; Lu and Hao 2013). Contractual governance safeguards the inter-organizational relationship by clarifying each party's rights and obligations and ensures adequate monitoring and controls to curb potential opportunism and control exchange hazards, thus sustaining cooperation (Weber and Mayer, 2011).

A multifunctional perspective of contractual governance argues that a formal contract facilitates the coordination of relationships and aids adaptation (Malhotra and Lumineau 2011; Schepker et al. 2014), which enhances project performance. The contractual control function defines the rules monitoring and inspecting parties' activities and penalizes deviating behaviors that destroy the transaction relationship to safeguard their investments (Parmigiani and Rivera-Santos 2011). The aim of contractual control is to curb opportunism and mitigate transaction risks. For example, it includes clauses related to termination rights, monitoring and inspection, and sanctions and penalties (Lumineau and Henderson 2012; Schepker et al. 2014). Such clauses

emphasize outcomes that can be monitored and measured objectively (Anvuur 2008), which makes the detection of contractual violation much easier. As a result, it may encourage compliance behavior and force parties to focus more time and effort on fulfilling their obligations to avoid contract breaches (Malhotra and Lumineau 2011)

Contractual coordination is a process of managing dependencies among activities and connecting different participants to accomplish collective tasks. Contractual coordination are methods aimed at mitigating misunderstandings, structuring methods for efficient collaboration, and clarifying each party's role and responsibilities (e.g., progress reports, meetings, dispute resolution, written contract clarification, schedules, site visit). This dimension involves clauses related to roles and responsibilities description (Salbu 1997; Mayer & Argyres 2004; Woolthuis et al. 2005), procedures monitoring the process rather than the outcomes (Argyres and Mayer 2007), tasks assignment (Lumineau & Quelin 2012), methods facilitating communication, and information sharing (Mesquita and Brush 2008)

Likewise, Contractual adaptation describes mutually agreed tolerance zones (Schepker et al. 2014) and provides guidelines or procedure for handling contingencies. Contingency adaptability makes a contract an adjustable framework with a high level of flexibility (Luo 2015). Moreover, an adaptive contract with a general framework of rules and standards guiding activities in an uncertain environment is usually incomplete. An incomplete contract might cause task ambiguity, making it difficult for the parties to understand their obligations (Anderson 2008).

2.3 Intellectual Capital

According to Roos, Pike and Fernstrom (2005) "Intellectual Capital can be defined as all nonmonetary and nonphysical resources that are fully or partly controlled by the organization

and that contribute to the organization's value creation". It is the collection of intangible and knowledge-based assets a company (or individual) possesses. Components of intellectual capital include human capital, relationship capital and structural capital (Marr, 2013). Intellectual capital helps to drive success and create value.

Human capital is the stock of competencies, knowledge, social and personality attributes, including creativity, cognitive abilities, embodied in the ability to perform labor so as to produce economic value (Simkovic, 2013). Tsui et al., (2014) added that human capital comprises of all individual knowledge, both tacit knowledge (knowing how) and explicit knowledge (knowing what. More specifically, human capital is sometimes the tacit knowledge that resides in the heads of the employees, ranging from the professional staff, the R&D experts (Nawaz & Haniffa, 2017).

Structural capital is the knowledge embodied in the organization, in the structures built to support the staff in their intellectual work. It is divided into organizational capital (innovation and process capital) and customer capital (Cavicchi & Vagnoni, 2017), and comprises of company's routines, procedures, strategies, and policies that are in charge of company's daily operations. Structural capital covers a number of different notions related to the company rather than to the specific employee. It helps the organization in turning individual human intelligence into knowledge that can be measured and developed on an organizational level. Without good and reliable structures for leveraging human capital it will only remain in the minds of the employees. In other words, by leveraging human capital and making it useful for the whole organization, the employees create structural capital. (Handzic, Durmic, Kraljic, & Kraljic, 2016).

Relational capital refers to all knowledge acquired by companies because of their interaction with the external environment such as competitors, partners, government, and customers (Pandey and Dutta, 2013; Tsui et al., 2014). The way in which relationship structural capital is defined, however, focuses on relationships with "customers, suppliers, alliance partner, shareholders and other stakeholders" (Turner, Maylor & Swart, 2015). Relational capital consists of a wide variety of external relationships between the organization and its customers, suppliers, competitors, and partners. Suggested measurements of relational capital include seeing it as a function of the longevity of the relationship, based on the assumption that the value of relational capital increases with time (Handzic & Durmic, 2015).

2.4 Contractual governance and Project Performance

The term contract refers to the written and formal agreements that define each party's rights, obligations, and responsibilities (Cheung *et al*., 2008). It specifies the terms of an agreement between two parties and represents the transaction or work to be done in a variety of forms (Schepker *et al*. 2014). Contractual governance is considered as different governance mechanism for triggering cooperative efforts to array project processes leading to performance and value for stakeholders (Levitt *et al*., 2014).

Lechler and Dvir (2010) articulated that the success of any project around the world is highly dependent on the effectiveness of the parties' adherence to their contractual obligations. Contractual governance triggers collaboration among parties to the contract, and hence pushing them to fulfill their contractual obligations (Levitt et al., 2014).

Furthermore, the existence of contracts as points of reference enables commitment, creates fear of violating the contract terms (Lu & Hao, 2013), enables parties to understand their roles and

each other's expectations (Ahola, 2014) and creates a stable and committed relationship which affects project performance (Talay & Akdeniz, 2014). Schepker et al. (2014) also noted that contractual governance serves as a framework for cooperation, aids adaptation, determines the deliverables, sanctions the contractual violations, and prescribes appropriate behaviors in the inter organizational relationship among others, which enhance project performance. Addae-Boateng, Wen and Brew (2015) posit that contractual governance structures are used to manage the relationships between parties to a transaction and reduce opportunism. Governance models of family firms are often more complex because of the need for two systems (the family and the firm) to interact positively and efficiently despite their different aims, values, institutional structures, etc.

As posited by Weber and Mayer, 2011, contractual governance enhances project performance by clarifying each party's rights, roles and obligations, which in turn will lead to the achievement of a project's quality, cost and time objectives if they are adhered to. Furthermore, contractual governance facilitates the coordination of relationships and aids adaptation (Malhotra and Lumineau 2011; Schepker et al. 2014). Talay & Akdeniz, 2014 found that contractual governance creates a stable and committed relationship which affects project performance. Ahola (2014) also found that the role of the contractual governance is in meeting the expectations of the different stakeholders.

Since Wu and Pan, 2012 state that contractual governance means governing a transaction through formal contracts, Lam and Chin 2005 noted that contracting facilitates commitment and task allocation, which, in turn, are relevant in successful conflict management

It therefore goes without saying that project contractual governance is one of the most significant aspects of successful projects around the world since it greatly impacts on project quality, time and cost, as posited by Kerzner, 2017. Furthermore, diverse levels of performance within similar contractual governance mechanisms have brought up the relevance of idiosyncratic practices. Contractual governance are considered as different governance mechanism for triggering cooperative efforts to array project processes leading to performance and value for stakeholders (Levitt et al., 2014; Roehrich, 2009; Zheng et al., 2008).

In addition, there have been some inconsistent findings on the relationship, which could be explained by the possible moderating effects of some other important factors (Cao & Lumineau, 2015). Among these, as a symbol of contract application, the severity of contract enforcement (SOCE) which Antia & Frazier, 2001 refer to as the level of severe actions taken by owners against the contractual violation of contractors (Lu & Hao, 2013; Wacker et al., 2016).

2.5 Intellectual capital and Project Performance

According to Kamukama et al (2010), there is a strong positive relationship between the organizational intellectual capital and performance. The focus on human capital in firms demonstrates the view that market value of the organization is less dependent on tangible resources, rather than on intangible ones, especially human resources. Likewise, Bayiley & Teklu (2016) found that recruitment and selection process along with the retention of the talented workforce lead to project performance. The firm is also responsible to make the best use of employees' skills and capabilities by encouraging both individual and organizational learning as well as building a supportive culture and environment where knowledge and experience can be built, shared and applied.

Furthermore, Allameh (2018), study revealed that the use of 'intellectual capital practices' being the critical success factors (including comprehensive employee recruitment and selection procedures, incentive compensation and extensive employee involvement and training) have proved a positive effect on both project efficiency and project performance. In addition, through the critical insight into the existing literature the empirical studies on intellectual capital show that relation capital as an external link also helps to identify the deprived skills and capabilities and through knowledge sharing hence equip the team members with the adequate set of competencies, necessary for project success.

Shih et al. (2010) argued that human capital and relational capital are inherently connected and can be a point of differentiation for a project or organization if relational capital is cultivated. In support of this assertion, Shih et al. (2010) contend that structural capital provides the environment that encourages individuals to invest their human capital to create and leverage its knowledge to improve the performance of a project or organization. This signifies that an improvement in intellectual capital elements boosts their association with financial performance

Halim (2010) conceptualized human capital as what a single employee brings into the value adding processes, consisting of professional competence, social competence, employee motivation, and leadership ability. On the hand, Maheran and Khairu (2009) describe structural capital as competitive intelligence, formulas, information systems, patents, policies, etc., resulted from the products or systems the firm has created over time. Navimipour & Charband (2016) also found that structural capital in form of policies and practices of the firm have a positive influence in encouraging employees to present the desired attitude and behavior required to support and implement the competitive strategy of an organization.

Welbourne (2008) delineates relational capital as an invisible asset based on developing, maintaining and nurturing high- quality relationships with any organization, individuals or group that influences business performance. All the human capital attributes are focused on employees and include their know-how, skills, values, motivation, learning capacity, behaviour etc. (see Andreeva, & Garanina, 2016; Chien, & Chao, 2011; Leitner, 2011). Turner, Maylor, & Swart (2015) define two types of knowledge regarding human capital: (1) specialist knowledge that includes project management knowledge, and knowledge of relevant tools and technics for project management and (2) generalist knowledge which takes into account previous experience and understanding of the project through business strategy and operations. Therefore, human capital positively influences project performance.

Relational capital can be divided into internal and external relational capital (Andreeva, & Garanina, 2016). Internal relational capital refers to cooperation between employees and departments. External capital focuses on the cooperation with suppliers and customers, and includes brands, alliances and different types of agreements (Andreeva, & Garanina, 2016). It has been shown that long-term relationships with stakeholders affect project performance and influence organizational competitive position (Snehota, & Hakansson, 1995). Therefore, relational capital positively influences project performance.

Bontis (1998) points out that structural capital represents organizational culture that supports new employees' ideas. Structural capital refers to all supportive elements such as corporate culture, strategy, programmes etc. (see Hsu, & Fang, 2009; Kamukama, Ahiauzu, & Ntayi, 2010). Andreeva, & Garanina (2016) define corporate culture, management procedures, information and decision-making systems as some parts of the knowledge kept in organizations -

structural capital. Turner, et al. (2015) suggests that strong relationships are very important for successful project functioning. Therefore, structural capital positively influences project performance.

2.6 Predictive potential of contractual governance and intellectual capital on the performance of projects

Benítez-Ávila, Hartmann and Dewulf (2019) undertook a study on contractual and relational governance as positioned-practices in ongoing public–private partnership projects. They concluded that the process framework does not claim predictive power, given that the social ontology that has been developed is based on the scientific premise that explanation is not predictive. This means that they found no predictive power between contractual governance and project performance.

Milosevic, Dobrota and Barjaktarević Rakočević posit that in today's knowledge-based business environment, intellectual capital (IC) is considered as an important contributor to project success. Their study was intended to question whether and, if so how, IC components (human, structural and relational capitals) influence project performance in the banking sector. They found that all components of IC matter for project performance. More precisely, results demonstrate that a fair proportion of project performance (49.9%) is accounted for human, structural and relational capital. They conceded that all three parts of intellectual capital, human, structural and relational, are inevitable factors for growth and development of organizations especially nowadays in constantly changing economic environment.

Cenciarelli, Greco and Allegrini (2018) carried out a study on whether intellectual capital affects the probability that a particular firm will default. We also test whether including intellectual capital performance in bankruptcy prediction models improves their predictive ability. The findings show that the intellectual capital performance is negatively associated with the probability of default. Our findings also indicate that the bankruptcy prediction models that include intellectual capital have a superior predictive ability over the standard models.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter covers the methodological aspects of the study. It covers the research design, study population, sampling design, source of data, methods of data collection, measurement of variables, data analysis and limitation to the study.

3.1 Research Design

The study adopted a cross sectional survey design involving the collection and analysis of data. This research design was used because it facilitates the assessment of multiple predicting variables towards the dependent variable at one particular time. Since the study focused on testing rather than generating theory, it adopted a quantitative approach that focused on describing and drawing inferences from the findings on the relationships between contractual governance, intellectual capital and project performance. Correlation and Regression approaches were used to investigate the relationships between the variables and the extent to which the independent variables explain the performance of projects.

3.2 Study Population

The study population was 75 road construction projects undertaken in the 5 divisions of Kampala Capital City Authority (KCCA Schedule of completed roads for FY 2015/16, 2016/17, 2017/18 and KCCA Roads Improvement Plan, 2018/19). These included all those projects that had been undertaken by KCCA for the last 5 years. The information about these projects was captured from KCCA Annual Report 2018, KCCA - Road Improvement Plan, Ministerial Policy

Statement, KCCA Website, KCCA Engineering Department reports, Budget Framework Paper: Vote: 122-KCCA and interviews with some KCCA officials in the Engineering Departments

3.3 Sampling Procedure and Sample Size

The research sample consisted of 63 Road construction projects of the population of 75 road construction projects determined using the approved Sampling table of Krejcie and Morgan, (1970). This study adopted a multi stage sampling procedure in order to get representative views of the various stakeholders on the performance of Road construction projects in KCCA. This involved using proportionate sampling to select the 63 projects in the 5 divisions of Kampala Capital City Authority and project stakeholders (respondents). The unit of inquiry comprised of KCCA Project Supervisors, Project Consultants, Project Engineers and Project beneficiaries (Road-users)

From each selected Road construction project, one (1) project road user was sampled. Each project contractor per each project was purposively targeted (Patton, 1990) and 1 KCCA-Project Engineer was conveniently sampled. The inclusion and exclusion criteria was used, in that there a respondent would be picked and found not to have participated in the selected project, he/she would be discarded and replaced with the next convenient person. The sample size and its composition are elaborated below in table 1:

Table 1

Showing Sample Size and Composition

Area	Population	Sample
Central Division	25	21
Nakawa Division	15	13
Makindye Division	10	8
Kawempe Division	15	13
Rubaga Division	10	8
TOTAL	**75**	**63**

***Source**: Adopted from KCCA Road Improvement Plan and KCCA Annual Report 2018*

3.4 Data Sources and data Collection Instrument

a. Primary Data

The required primary data was directly collected from respondents (KCCA-Project Coordinators, Road-users and Contractors) who were project stakeholders of road construction projects in KCCA through administering structured questionnaires. These were selected in order to get a comprehensive view of project performance, as predicted by contractual governance and intellectual capital. The questionnaires were based on a 5-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The questionnaire had two sections (A) and (B), section A got information about the project characteristics and demographic factors of the respondents whereas section B gathered information about the study variables project performance, contractual governance and intellectual capital. The researcher sought the services of a research assistant whom he closely monitored during data collection concerning the original reality and views of project stakeholders

3.5 Measurement of Variables

Project performance is measured using the Triple Constraint Model of Project Quality, as indicated in the PMBOK (PMI, 2008). The Specific measures therefore included Time (Schedule) Performance, Cost Performance, client satisfaction and Project Quality. Contractual Governance on the other hand was measured by control, coordination and adaptation (Schepker et al. 2014). Intellectual capital was measured by structural, human capital and relation capital (Allameh, 2018).

3.6 Validity and Reliability of Research Instrument

The study was pre-tested with the data collection instrument among a section of the intended respondents. Inappropriate questions, if any, were revised. The Content Validity Index and the Cronbach's Alpha value was used to measure the Validity and Reliability of the instrument respectively. This was in line with Sekaran, (2000) that the research instrument used to collect data should be valid and able to yield similar results at all time. Data cleaning was carried out to eliminate questionnaires with inconsistent information. Content Validity Index (CVI) was computed using standardized measures and appropriate adjustment was generated from the formula below; the CVI was generated.

According to Amin (2005) coefficient is acceptable if it is within the statistical range of 0.5 to1. In addition, the researcher took full control of data collection and documentation of sources. After data compilation of draft report, the key informants were given the opportunity to read copies of report and verify whether the contents reflected the empirical material given by them, without any misinterpretation and generalization. The results for CVI are shown in table 2 below:

Table 2

Content Validity Index (CVI Results)

Expert	CVI Score
Expert 1	0.800
Expert 2	0.744
Expert 3	0.841
Expert 4	0.703

Source: primary data

As seen in the table above, the results for CVI were above 0.5 which indicates validity of items in the questionnaire.

The Cronbach alpha of 0.7 and above, as recommended by Cronbach, (1951) was accepted. Cronbach, (1951) recommends that an alpha tending towards 1 ensures that the data collection tool has internal consistency, and that the average correlation of items in the instrument provides for reliability. Nunnally (1978) also recommends a 0.7 alpha coefficient as an acceptable reliability coefficient, because the higher the score, the more reliable the generated scale is. The results for Cronbach Alpha are shown in table 3 below:

Table 3

Reliability Results

Variable	Items	Cronbach Alpha
Contractual Governance	22	.842
Intellectual Capital	31	.923
Performance	32	.878

Source: primary data

3.7 Data Processing, Analysis and Presentation

In processing, analysis and presentation of data, the collected data was coded, edited for incompleteness and inconsistence to ensure correctness of the information given by the respondents. Data was tabulated and input in either the Statistical package for social scientists (SPSS) version 22. The Pearson' correlation coefficient was used to establish the relationships between variables. Regression analysis was conducted to determine variance in the dependent variable (project performance) which was explained by the independent variables (contractual governance and intellectual capital).

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.1 Introduction

In this chapter the researcher conducted the presentation, analysis and interpretation of the findings. This chapter includes descriptive statistics and inferential results. The inferential results were tested and presented as per the objectives of the study which were:

a) To examine the relationship between contractual governance and the performance of road construction projects in Kampala

b) To examine the relationship between intellectual capital and the performance of road construction projects in Kampala

c) To examine the predictive potential of contractual governance and intellectual capital on the performance of road construction projects in Kampala.

4.2 Response Rate

Out of a total of 216 respondents from 63 road construction projects (three from each project), the study was able to get information from only 162 in 54 projects. This gave a response rate of 75%. The study considers this rate as sufficient and good for the study. This position is supported by Mugenda and Mugenda (2003) who posits that the higher the response rate, the better as long as it is above 50%.

4.3 Background Information

4.3.1 Characteristics of the projects

The study sought information on the characteristics of projects. This is shown in Table 4:

Table 4

Characteristics of the Projects

		Frequency	Percent
Category of Road Construction Project	Road Upgrading	33	61.1
	Road Maintenance	16	29.6
	New roads	5	9.3
	Total	**54**	**100.0**
Source of the Project Funds	GoU	10	18.5
	Donor Funds	13	24.1
	Loan	31	57.4
	Total	**54**	**100.0**

Source: primary data

The results in table 4 show that the majority of projects were road upgrading at 61.1 percent while road maintenance and new roads accounted for 29.6 percent and 9.3 percent respectively. This shows that whereas the data was mostly collected from road upgrading projects, other types of projects were also represented in this study. This implies that most of the road construction projects are for upgrading of existing roads in Uganda.

Regarding the source of funding, majority of the road construction projects were found to have been implemented using loans (57.4%), as compared to those which were implemented using the Government of Uganda (GoU) funding (18.5%) and donor funds (24.1%). The results imply that the projects being studied have different sources of funds hence a more holistic view will be got on their performance.

4.3.2 Characteristics of the Respondents

The demographic characteristics of the respondents are summarized in Table 5:

Table 5

Characteristics of the Respondents

Parameter	Frequency	%
Sex Classification		
Male	92	56.8
Female	70	43.2
Total	**162**	**100.0**
Age Classification		
18-27	26	16.0
28-37	61	37.7
38-47	62	38.3
48+	13	8.0
Total	**162**	**100.0**
Education Level		
Masters	17	10.5
Postgraduate Diploma	8	4.9
Bachelor's Degree	93	57.4
Diploma	43	26.5
Certificate	1	.6
Total	**162**	**100.0**
Position of Respondent		
Project Supervisor	17	10.5
Project Engineer	11	6.8
Project Consultant	19	11.7
Road User	**115**	**71.0**
Total	162	100.0
How long have you been involved in the project?		
Less than a year	27	16.7
1-4 years	71	43.8
5-8 years	44	27.2
more than 8 years	20	12.3
Total	**162**	**100.0**

Source: primary data

As seen in table 5 on sex classification, the majority of the respondents were male (56.8%) while the females comprised of the minority in these projects (43.2%). This implies that the study is based on information mainly from male respondents in the road projects, although the females

were also significantly represented therein; and that the projects are dominated by males in the industry.

Regarding the age classification, the findings show that the biggest category of the respondents were aged between 38-47 years (38.3%), followed by those who are aged 28-37 years (37.7%). Results show that overall, the respondents were generally aged 28-47 years which implies that the results are based on the middle-age bracket of respondents, who comprise most of the employees in such projects.

The study also sought to know the education level of the respondents in the projects. The results in table 4 show that the biggest category of the respondents (57.4%) have a Bachelor's degree while a significant proportion have a diploma. From these results, one can therefore see the implication that the results were based on people who were fairly well educated, had a good understanding of the purpose of the study and were therefore able to provide reliable and informed answers.

The results in table 4 on the position of the respondents show that data was collected from mostly road users (71%) but there were also project supervisors, project engineers and project consultants. This was not surprising because the road users were proportionally expected to be more than the consultants, for example. This also shows that the views of different categories of the project stakeholders were obtained to enrich this study.

The results in table 4 also show that most of the respondents had been involved in the road projects for 1-4 years (43.8%), followed by those who had been involved for 5-8 years (27.2%). This finding implies that most of the people who provided information for the study had been

involved enough in the road construction projects to know the information they provided to the researcher.

4.4 Correlation Analysis

The study set out to ascertain the relationships between the variables under study as part of its first two objectives. In order to achieve this, the Pearson (r) correlation coefficient was computed given the interval nature of the data and the need to test the direction and strength of this relationship. Table 6 below presents the results:

Table 6:

Pearson's Correlation Results showing the relationship between contractual governance, intellectual capital and the performance of road construction projects in Kampala

VARIABLE/CONSTRUCT	1	2	3	4	5	6	7	8	9	10	11	12
1. Contractual Governance	1											
2. Control	-.710	1										
3. Coordination	-.770	.326	1									
4. Adaptation	-.827	.311	.533	1								
5. Intellectual Capital	.506*	-.354	-.501	-.342	1							
6. Human Capital	.558	-.371	-.510	-.425	.849	1						
7. Relational Capital	.415	-.287	-.471	-.240	.925	.736	1					
8. Structural Capital	.297	-.234	-.281	-.187	.772	.385	.625	1				
9. Project Performance	.184*	-.098	-.221	-.121	.344**	.111	.237	.556	1			
10. Cost	.342	-.172	-.341	-.287	.625	.395	.637	.578	.240	1		
11. Time	-.010	.013	-.016	.020	.139	-.050	.019	.413	.821	.015	1	
12. Quality	.074	-.042	-.105	-.036	.034	-.100	-.068	.276	.831	-.081	.574	1
13. Stakeholder Satisfaction	.406	-.225	-.428	-.307	.700	.522	.724	.546	.375	.756	.018	.003

**correlation is significant at the 0.05 level*
*** correlation is significant at the 0.01 level*

Source: primary data

4.4.1 Findings on the relationship between contractual governance and the performance of road construction projects in Kampala

The results in table 6 indicate that contractual governance and project performance are significantly related ($r = .184$, $p<.05$). This means that if we improve the way contracts are managed and ensured that activities are organized well so as to enable them to work together effectively even in situations which are not predictable, then we can expect better results and easier achievement of roads project goals. This also means that when contractual governance reduces, then road project performance also declines.

4.4.2 Findings on the relationship between intellectual capital and the performance of road construction projects in Kampala

The results in table 6 show a positive significant relationship between intellectual capital and project performance in road projects in Kampala ($r = .344$, $p<.01$). This means that if an organisation properly handles the expertise of employees, organizational processes, and sum of knowledge contained within, then we can expect them to achieve the goals that they set for a project. By intellectual capital we are talking about nonmonetary and nonphysical resources that are fully or partly controlled by the organization. By implication, if the control of these resources is not done well, then project performance can be expected to take the same negative trajectory.

4.5 Findings on the predictive potential of contractual governance and intellectual capital on the performance of road construction projects in Kampala

Regression analysis is a powerful statistical method that allows one to examine the relationship between two or more variables of interest. This analysis was performed in order to ascertain the

predictive power of the independent variables on the dependent, and therefore satisfy the third objective of the study.

4.5.1 Multiple Regression Analysis

The results for multiple regression analysis are shown in table 7 below:

Table 7

Multiple Regression Model Summary

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.548	.392		6.498	.000
	Contractual Governance	.018	.116	.013	.152	.880
	Intellectual Capital	.316	.081	.337	3.903	.000

a. Dependent Variable: Performance

b. R=.344, R Square =.118, Adjusted R Square = .107, Std. Error of the Estimate =.55222

Source: primary data

From the table 7 above, results show that the variables entered in the regression model explain an overall of 10.7% (AdjR^2 =.107) of the variance in performance of road construction projects in Kampala, implying that the remaining 89.3% is explained by factors not considered in this study.

The findings in table 7 further confirmed a positive and significant predictive potential of intellectual capital on project performance (β= .337; p<.05). However, contractual governance was found not to be a significant predictor of performance in this context (β= .013; p>.05). This unsupported finding is probably unique to the case study, which focused on road construction projects rather than all construction projects in general.

4.5.2 Hierarchical Regression Analysis

A hierarchical regression was also run, in order to include the source of funding and type of the project on the predictors. The results are shown in the table 8 below:

Table 8

Hierarchical Regression Analysis

Variable/Predictor	**Model 1**		**Model 2**		**Model 3**	
	Beta	**Std Err.**	**Beta**	**Std Err.**	**Beta**	**Std Err.**
Type/Category of Project	-.183	.069	-.180	.068	-.194	.065
Source of Funds	.089	.058	.092	.057	.055	.055
Contractual Governance			.183	.103	.010	.115
Intellectual Capital					.339	.080
R	.204		.273		.399	
R Square	.041		.075		.159	
R Square Change	.041		.033		.084	
Adjusted R Square	.029		.057		.137	
Std Error of the Estimate	.57573		.56743		.54276	
F	3.441		4.257		7.411	
Sig.	.037		.006		.000	

Constant: dependent Variable which is Project Performance

Source: primary data

From table 8, Model 1 indicates that the type of road construction project and source of funding for the same accounted for 2.9% of project performance (Adjusted R^2= .029; p<.05). The addition of contractual governance into Model 2, reveals 5.7% of variability in performance of projects (R^2=.057). The model results also show that there is a significant relationship between contractual governance and performance of road projects (β= .103; p<05).

The addition of intellectual capital in Model 3, reveals 13.7% of variability in performance of projects (Adjusted R^2 =.137; p<.05). The model results also show that there is an insignificant relationship between intellectual capital and Performance of road projects (β= .339; p>.05).

In conclusion, the variables entered in the regression model explain an overall of 13.7% (AdjR^2 =.137) of the variance in performance of road construction projects in Kampala, implying that the remaining 86.3% is explained by factors not considered in this study.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter is organized in five sections. They include discussions in relation to the research objectives. The second section focuses on conclusions while the third section presents recommendations. After these, there are the proposed areas for further research and the limitations encountered in carrying out this study.

The study objectives were to; examine the relationship between contractual governance and the performance of road construction projects in Kampala; examine the relationship between intellectual capital and the performance of road construction projects in Kampala; and to examine the predictive potential of contractual governance and intellectual capital on the performance of road construction projects in Kampala.

5.2 Discussion of the Findings

The findings are hereby discussed in relation to the research objectives. The discussion is presented according to the findings, agreement or contradiction with various scholars.

5.2.1 The relationship between contractual governance and the performance of road construction projects in Kampala

The results indicate that contractual governance and road construction project performance are significantly related. This means that better control, coordination and adaptation as constructs of contractual governance will ensure that the road construction projects perform within the

performance expectations. Control is a function of management which helps to check errors in order to take corrective actions, while coordination is the unification, integration, synchronization of the efforts of group members so as to provide unity of action in the pursuit of common goals. Adaptation on the other hand means creating a steady stream of quality projects that either look to improve the business, develop and operationalize innovations or respond to changing market conditions.

From this study it has become clear that contractual governance is a corporate governance structure used to manage the relationships between parties to a transaction and reduce opportunism. This means that better contractual governance will naturally elicit better performance even in the road construction projects. The findings are therefore not surprising as they agree with the works of Addae-Boateng et al., (2015), Levitt et al., (2014), Cao & Lumineau (2015), Lechler & Divir (2010), Hu & Lao (2013), Ahola (2014), Talay & Akdeniz (2014), Ning (2017), Yan & Zhang (2020) as well as Shepker *et al.*, (2014). Within the context of Uganda, this was alluded to by Kansiime et al., (2017) who unanimously agreed with the position that the success of any project around the world is highly dependent on the effectiveness of the parties' adherence to their contractual obligations.

The researcher adds that this is because when contracts are made, performance parameters are laid out, and these become the key success criterias against which the performance of road construction are monitored, measured and assessed. By strictly managing the achievement of these performance parameters of each contractual stakeholder, we can see the 'inadvertent' achievement of project performance objectives hence we see that the two variables are indisputably related to each other.

5.2.2 The relationship between intellectual capital and the performance of road construction projects in Kampala

Findings show a positive significant relationship between intellectual capital and project performance in road projects in Kampala. By intellectual capital we are talking about nonmonetary and nonphysical resources that are fully or partly controlled by the organization. By implication, if the control of these resources is not done well, then project performance can be expected to take the same negative trajectory, and vise versa.

This finding is in agreement from scholars such as Kamukama et al., (2010), Bayiley & Teklu (2016), Allameh (2018), Shih et al., (2010), Halim (2010), Navimipour & Charband (2016) as well as Welbourne (2008) who denote a positive relationship between intellectual capital, its constructs and project performance. The findings are especially in tandem with Milosevic et al., (2018) who found that all components of intellectual capital matter for project performance. The correlation results above also indicate the same positive relationships between all components of intellectual capital and project performance.

From a basic view of things, capital is a factor of production. This makes sense therefore to note that intellectual capital is a seed for performance which organizations need to embrace in their projects.

5.2.3 The Predictive Potential of Contractual Governance and Intellectual Capital on the performance of road construction projects in Kampala

The third objective was concerned with the predictive potential of contractual governance and intellectual capital on the performance of road construction projects in Kampala. The multiple

regression results show that whereas there exists a positive and significant predictive potential of intellectual capital on project performance, contractual governance is found not to be a significant predictor of performance in this context.

On the other hand, the hierarchical regression results show that when source of funds and type of project are factored in, none of the predictors are significant, with the source of funds being a significant predictor.

Regarding the predictive potential of contractual governance, the findings are in agreement with Benítez-Ávila et al., (2019) who found that it is not a significant predictor of performance. The multiple regression results on intellectual capital are in agreement with scholars such as Milosevic et al., (2018), Cenciarelli et al., (2018) and Handzic et al., (2016) who find that intellectual capital has a positive effect on project success and that it can be a valuable predictor of future projects' performance. It must be noted that the agreement with Milosevic et al., (2018) is based on the nature of the predictive potential but not the degree. Regarding the degree of prediction, our findings show that intellectual capital is a minor predictor while Milosevic et al., (2018) show that it is a major predictor. However, there is little empirical literature on the predictive potential of intellectual capital on project performance, which limits discussion in relation to scholarly findings.

5.3 Conclusions

The purpose of this study was to analyze the relationships between contractual governance, intellectual capital and performance of road construction projects in Kampala. The first objective of this study was to examine the relationship between contractual governance and the performance of road construction projects in Kampala. It has been found that contractual

governance positively affects performance. Going back to the research problem, we can therefore conclude that the problems cited are partly explained by poor contractual governance. If the parties to these contracts (KCCA and the road contractors) adhered to their respective contractual obligations, contract completion timelines, contract sum, and the quality of materials/ equipment to be used in the road construction projects, then these projects would not be named among the poor performing ones, assuming other factors are constant.

Objective two was concerned with the relationship between intellectual capital and the performance of road construction projects in Kampala. Intellectual capital is among the most valuable resource of the organization, and it should take in the forefront of strategic concepts. It can be concluded that contractual governance and intellectual capital are positively related and the poor performance of road construction projects which has been highlighted in this report is partly attributable to poor management of intellectual capital. This is because the combined advantage got from leveraging the KCCA and contractor's employees' engineering skills and relationships with key stakeholders is negated. Intellectual capital gives a competitive advantage or in non-competitive sectors such as KCCA, it gives a performance advantage.

The poor performance level of projects is more attributable to lack of intellectual capital than to poor contractual governance. Therefore, we can say that whereas contractual governance has played some role in performance of the road construction projects, intellectual capital management carried the higher weight, as per our findings.

5.4 Recommendations

From the study findings, discussions and conclusions of the study, the following recommendations are made:

1. There is need to train Project Managers on how to harness intellectual capital in order to boost the chances of project performance. These trainings which should be frequently undertaken should focus on how human, structural and relational capital can be leveraged and used to improve project performance.

2. To improve Project performance, KCCA Project Managers need to focus on building a multidimensional long term relationship with stakeholders its key stakeholders.

3. KCCA should immediately look at which measures are in place in the current road construction projects to ensure that contracts are followed as agreed, starting with those that show some signals of poor performance. After this, corrective action must be immediately put in place to avert any failures and delays of these projects.

4. There is need to review contracts vis a vis performance on a regular basis, preferable quarterly, instead of the beginning and the end of a project where little corrective action can be done.

5.5 Limitations to the Study

This study used a cross sectional research design approach, which has some limitation regarding historical trends in the variables, whereby going by the current situation might be misleading when historical trends are stating otherwise.

The study was restricted to the road construction projects in Kampala, and yet the circumstances might not be the same in other organisational, sectoral, industrial or geographical contexts. It might be different in the wider construction industry such as in housing projects.

The study used a quantitative approach and ignored qualitative aspects that may exist. That notwithstanding, variables were based on perceptions of employees who are single respondents, which implies certain degree of subjectivity. Having in mind that every respondent provided data for dependent and independent variables in the same time, common method bias might have caused some problems.

Despite all these limitations, causal relationships between contractual governance, intellectual capital and project performance, and the importance of the topic, cannot be neglected

5.6 Areas for further study

- This study implied that the performance of road construction projects is accounted for by many factors which cannot be fully explained by contractual governance as well as intellectual capital, and their constructs, Therefore, future research should be undertaken to ascertain other factors affecting project performance which this study had not looked at.
- This same study should be done in another sector as a case study for comparison purposes to ascertain if the results change in any way when put in a different context. For example, it should be done in government ministries, education service projects, NGOs, other subsectors of the construction sector, or even in the health services sector.
- Future studies should use longitudinal designs unlike this one which used a cross-sectional survey.
- Future studies should consider using a mix of both qualitative and quantitative approaches to the study, given their complementary effect on the findings.

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Appendix 1: Questionnaire

MAKERERE  **UNIVERSITY**

Dear Respondent,

I am **Canogura Tonny**, a student at Makerere University, pursuing a Master's Degree in Business Administration (MBA). I am conducting a study on **Contractual governance, intellectual capital and performance of road construction projects in Kampala.** Given your establishment and experience with these projects, I humbly request you to take part in this study by responding to the following questions as honestly as possible.

Your response is therefore very instrumental to the success of this research. All information provided here will be treated with utmost confidentiality and will be only used for academic purposes.

Sincerely thanking you.

Canogura Tonny

MBA Student

SECTION A: GENERAL CHARACTERISTICS

1. Age classification (a) 18-27 ☐ (b) 28- 37 ☐ (c) 38-47 ☐ (d) 48+ ☐

2. Sex classification (a) Male ☐ (b) Female ☐

3. Educational levels: (a) Masters ☐ (b) Post Graduate Diploma ☐ (c) Bachelor's Degree ☐ (d) Diploma ☐ (e) Certificate ☐ (f) UACE ☐ (g) UCE ☐ (h) PLE ☐

4. Category of road construction project

Road Upgrading ☐ Road Maintenance ☐ New road construction ☐

5. Position of the respondent in the project

Project Supervisor ☐ Project Engineer ☐ Project Consultant ☐ Road User ☐

6. How long have you been involved in the project?

☐

Less than a year ☐ 2-4 years ☐ 5-8 years ☐ More than 8 years

7. Source of funds for road construction project

Government of Uganda funds ☐ Donor funds ☐ Loan ☐

SECTION B:

Please read the statement and tick the number corresponding to the response that best describes your views on the statement.

*Key: 1-**Strongly Disagree; 2-Disagree; 3-No comment; 4-Agree; 5-Strongly agree***

CONTRACTUAL GOVERNANCE						
Control		**SCALE**				
1	There is effective alignment of accountability	1	2	3	4	5
2	There is availability of contracts as reference points	1	2	3	4	5
3	There is effective reporting on the work done on the daily basis.	1	2	3	4	5
4	There is effective monitoring of contract performance	1	2	3	4	5
5	Mechanisms are in place to manage contract deviations	1	2	3	4	5
6	The contract offers much space for negotiation	1	2	3	4	5
7	Control system is an important element to identify factors affecting construction project effort	1	2	3	4	5
8	For any disagreements on the project, the contract is used as a point of reference in discussions	1	2	3	4	5
Coordination						
1	Project managers and staff interact with each other	1	2	3	4	5
2	There are existing guidelines on how stakeholders relate with each other	1	2	3	4	5
3	The involved stakeholders contribute to the completion of the project	1	2	3	4	5
4	Project managers coordinate project activities	1	2	3	4	5
5	Collaborations occur among all the members	1	2	3	4	5
6	Parties have improved their collaboration in the current year	1	2	3	4	5
7	There are focal persons among the different categories of stakeholders	1	2	3	4	5
Adaptation						
1	We have mechanism for handling variances and changes in the work environment	1	2	3	4	5
2	Our contracts are flexible to cater for changing circumstances that may affect performance	1	2	3	4	5
3	Changes in project environment significantly affect the project	1	2	3	4	5
4	We have plans for changes in the project environment	1	2	3	4	5
5	We have contingencies for any eventuality	1	2	3	4	5
6	We have capacity to restore operations after an emergency	1	2	3	4	5
7	We have the ability to adopt to new methods of work	1	2	3	4	5
INTELLECTUAL CAPITAL						
HUMAN CAPITAL		1	2	3	4	5
1	Our team members have professional competence in road construction	1	2	3	4	5
2	Our team members have the required qualifications in road construction	1	2	3	4	5

3	There are continuous training sessions for team members.	1	2	3	4	5
4	We have a supportive infrastructure that enables human capital to function	1	2	3	4	5
5	Our team members have experience in undertaking road construction projects	1	2	3	4	5
6	Our employees are always a source of new ideas	1	2	3	4	5
7	Our employees can with stand pressure from work	1	2	3	4	5
8	We have self-driven employees	1	2	3	4	5
9	Our employees provide technical skills to our customers	1	2	3	4	5
10	Level of commitment of our staff to work is high	1	2	3	4	5
11	Employees in this firm always search for knowledge	1	2	3	4	5
RELATIONAL CAPITAL						
1	Our employees have good relationship with our clients	1	2	3	4	5
2	There are organizational arrangements to facilitate interaction among stakeholders	1	2	3	4	5
3	Communication among the different stakeholders is valued in our organization	1	2	3	4	5
4	Our networks with our clients have improved our performance	1	2	3	4	5
5	We usually get new business ideas from our clients	1	2	3	4	5
6	Our systems ensure that our clients are always in touch with our organization	1	2	3	4	5
7	At times our clients participate in deciding on the matters that affect them	1	2	3	4	5
8	Our clients help us to enroll or get new customers	1	2	3	4	5
9	Customers help this firm to improve or update its services	1	2	3	4	5
10	Parties communicate frequently	1	2	3	4	5
STRUCTURAL CAPITAL						
1	We have a well defined organizational structure	1	2	3	4	5
2	We have a supportive culture that allows employees to try out new things	1	2	3	4	5
3	Our project structure and processes support the operation and activities of staff	1	2	3	4	5
4	There are effective communication structures are in place	1	2	3	4	5
5	There are effective reporting structures are in place	1	2	3	4	5
6	Our internal processes are clear to the users	1	2	3	4	5
7	This firm consistently comes up with new business ideas	1	2	3	4	5
8	Our transaction processes are usually fast	1	2	3	4	5
9	Our systems make it easy to access relevant information	1	2	3	4	5
10	This firm promotes a culture of team work	1	2	3	4	5
11	This firm has clear values that guide its employees	1	2	3	4	5
PERFORMANCE OF ROAD CONSTRUCTION PROJECTS						
Cost						
1	Activities of the project are usually carried out following a clear budget	1	2	3	4	5
2	The financial limits for the project are clearly stated	1	2	3	4	5
3	Project executors always adhere to the planned cost ceilings	1	2	3	4	5
4	The cost of the project stays within the limits that have been set	1	2	3	4	5
5	We have fixed project budgets	1	2	3	4	5
6	We encounter costs associated with delays, claims, wastages and rework	1	2	3	4	5
7	Most road projects are never implemented within the contracted costs	1	2	3	4	5
8	Our project costs are often affected by fluctuations in input prices	1	2	3	4	5
Time						
1	Activities of the project are carried out in the agreed time	1	2	3	4	5

2	The final date of project completion is clearly defined	1	2	3	4	5
3	The time limits for the project activities are always clearly stated	1	2	3	4	5
4	Project activities are being carried out exactly as planned	1	2	3	4	5
5	Project executors follow the planned schedule for all activities	1	2	3	4	5
6	Project team is always committed to beating set deadlines	1	2	3	4	5
7	We minimize interruptions of operations during road construction works	1	2	3	4	5
8	There is vailability of construction equipment and spare parts	1	2	3	4	5
Quality						
1	Production of a quality output is our ultimate aim	1	2	3	4	5
2	All the actions undertaken meet required quality standards	1	2	3	4	5
3	Considering work done so far, the project usually fulfills project goals	1	2	3	4	5
4	Needs and desires of parties are considered when implementing the project	1	2	3	4	5
5	Project executors always keep within quality parameters in all activities	1	2	3	4	5
6	Project and field engineers are professionally qualified to efficiently undertake the project	1	2	3	4	5
7	There is investigation of likely effects of quality on project constraints	1	2	3	4	5
8	There are several reworks on our road projects due to the quality of materials used	1	2	3	4	5
9	We use high quality materials	1	2	3	4	5
10	We rely on high performance road construction equipment to do our road works	1	2	3	4	5
Stakeholder satisfaction						
1	All the activities meet the needs of the clients/ en-users	1	2	3	4	5
2	The work done always exceeds expectations	1	2	3	4	5
3	The project goals are jointly set in order to meet client needs	1	2	3	4	5
4	Our efficient processes are able to create customer value.	1	2	3	4	5
5	Stakeholders are involved in project resource allocation	1	2	3	4	5
6	Project results meet stakeholders expectations	1	2	3	4	5

Thank you so much for your support