SUPPLIER SELECTION AND SUPPLIER PERFORMANCE IN PROCURING AND DISPOSING ENTITIES: A CASE STUDY OF UGANDA WILDLIFE AUTHORITY, KITANTE, KAMPALA DISTRICT

BY

KAWADDWA SHEEM

16/U/13560/GMSC/PE

A DISSERTATION SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE IN SUPPLY CHAIN MANAGEMENT DEGREE OF KYAMBOGO UNIVERSITY

NOVEMBER, 2019

DECLARATION

I **Kawaddwa Sheem**, hereby declare that this submission is my own original work and that to the best of my knowledge, it contains no material previously published by another person nor materials which have been accepted for the award of any other degree of the university, except where due acknowledgement has been made in the text.

NAME: SIGNATURE: DATE:

KAWADDWA SHEEM   ………………………….   …………………………
16/U/13560/GMSC/PE

ACKNOWLEDGEMENT

TABLE OF CONTENTS

CHAPTER FIVE:

DISCUSSION OF FINDINGS, SUMMARY, CONCLUSION AND RECOMMENDATION OF THE STUDY

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

AO: Accounting Officer

CAO: Chief Administrative Officer

CC: Contracts Committee

EC: Evaluation Committee

PDE: Procuring and Disposing Entity

PPDA Act: Public Procurement and Disposal Act

PPDA: Public Procurement and Disposal of Public Assets Authority

SOR: Statement of Requirements

UNOP: United Nation Organization Program

UWA: Uganda Wildlife Authority

SS: Supplier selection

SP: Supplier performance

KPIs: Key Performance Indicators

ABSTRACT

This research examines the supplier selection and supplier performance in procuring and disposing entities; a case of Uganda Wildlife Authority. The research objectives focused on establishing the relationship between problem identification and supplier performance in Uganda Wildlife Authority, assess the relationship between criteria formulation on supplier performance in Uganda Wildlife Authority and to analyze the relationship between supplier qualification on supplier performance in Uganda Wildlife Authority. To effectively carry out this study, data was collected using close ended questionnaires and interviews were also conducted. Purposive sampling, random sampling with replacements and disproportionate stratified sampling techniques were used. 65 UWA Staff from procurement and disposal unit, contracts committee, sub contracts committee and top management were the population but 60 respondents were used as the sample size. A total of 58 respondents out of a sample size of 60 responded which was 97% response rate. The researcher as well conducted interviews from 5 different respondents. Both quantitative and quantitative data was collected and was analyzed using descriptive techniques of percentages and mean. Pearson correlation coefficient was used to test the objectives of the study. The findings in the study obtained indicated that there was a strong positive relationship between supplier selection and supplier performance in UWA which was statistically significant. The strong positive relationship between supplier selection and supplier performance can be attributed to other factors like creditable contract management in UWA and technological developments in UWA. In this regard, managers, decision makers and practitioners at Uganda Wildlife Authority need to offer substantial attention to supplier selection in its entirety, in particular, ensure there is a combined effort on "problem identification, criteria formulation and supplier" qualification. This will help the entity achieve its set targets with an expenditure that is commensurate to the delivered outputs.

CHAPTER ONE

INTRODUCTION

1.1.Background to the study

Supplier selection was well-thought-out as important and considered more than a clerical function in the late 1960s. It is also estimated that globally, 50% firms undertook activities related to supplier selection in their routine procurement operations constituting supplier relationship management (Simpson et al., 2002; Prahinski and Benton, 2004). This is in line with the concern of most procuring firms' expectations of how valuable supplier's products and services are relative to their performance improvement (Krause and Ellram, 1997).

The realization that public procurement accounts for about 60% of government's expenditure created increased interest in supplier selection. It was envisaged that with observance of supplier selection best practices, government would maximise value attainment from procured goods and services (Monczka & Handfield & Giunipero & Patterson, 2011).

Despite the importance of supplier selection in fostering the attainment of objective of procurement, supplier selection has been reported to be marred with corruption tendencies constraining the attainment of value for money since the public procurement reforms in early 2000 in most developing countries (Odhiambo, 2015; Rwothungeyo, 2012). Moreover, studies on supplier selection and supplier performance in the public sector of developing counties and Uganda specifically are scanty (Odhiambo, 2015; Ogubala et al (2014). This study therefore sets out to examine the supplier selection practices in a government PDE and its influence of supplier performance.

Public procurement takes more than half (55%) of national expenditure in Uganda making it a strategic function which needs to be well managed for enhanced attainment of value for money (PPDA, 2012). All the PDEs at the central government level to which the procurement function was decentralized (PPDA Annual report, 2005) and among them is UWA. According to the PPDA act, 2003, each procuring and disposing entity must be composed of accounting officer, Contracts committee, procurement and disposal unit, and user department.

In addition there are other relevant organizations such as: The Solicitor General (SG), who is responsible for review and clearing of contracts of PDEs; the Auditor General (AG) who is responsible for auditing part of the procurement process; the Inspector General of Government (IGG) who investigates corruption cases, including corruption in procurement, and the Director Public Prosecutions (DPP).

Uganda Wildlife Authority as a parastatal adopted a "decentralized procurement system" in order to ensure an effective consistent approach to procurement across all protected areas where each park has a minimum of one procurement officer with sub contracts committee of a minimum of 4 members that are appointed by the Accounting officer and the park manager (CAM) as the Accounting officer park to help streamline the procurement processes in each protected area. Uganda Wildlife Authority like any other government agencies executes its procurements and disposals while benchmarking a framework of set laws and regulations provided for by the Public Procurement and Disposal of public Assets Authority through the PPDA Regulations (2014), PPDA Act (2003) and PPDA Guidelines (2014). UWA therefore encounters selection of suppliers benchmarking the generic PPDA procurement process where the selection of competent suppliers is ideal and regarded as one of the important function to be performed by a purchasing department. It is impossible to produce low cost and high quality products

successfully without competent suppliers (Weber current and Benton 2001). Therefore, as required by the PPDA Act (2003), UWA put in place a procurement and disposal units with very as a management measure to oversee the supplier selection to avoid procurements disputes that are characterized with contracting incompetent supplies.

1.2 Problem statement

Poor supplier selection can cost the organisation millions of loses due to recalls, warranty costs, and associated inventory adjustments, and have inflicted untold damage on their reputations and future sales potential (Beil & Ross, 2009). This was depicted in a case where the UWA Contracts committee meeting of 222/UWA/CC/2014 approved firms for Construction of 300 boundary markers/ pillars within Pian Upe Wildlife reserve. Ms. Akwang United Brothers Ltd emerged as the Best Evaluated Bidder and was awarded a formal fully signed contract or agreement on February 25, 2015. The firm was later on issued with an Advance payment of 25% worth UGX 20,146,550. To UWA's dismay, the selected firm ended up not doing the work and did not fulfill their contractual obligations of delivering the right quality of works at the right cost in the right time. In addition, poor supplier performances and disputes have persisted in UWA according to the Auditor General's Annual Performance Report, (2016). Therefore, poor supplier selection may be responsible for the futile supplier performances due to selecting inept suppliers who execute slapdash works and or supplying substandard products. To avoid such direct consequences, it is paramount to have effective screening processes that help to identify top notch suppliers before awarding of contracts. This dilemma therefore necessitates an investigation into the supplier selection and supplier performance in procuring and disposing entities with a specific focus on Uganda Wildlife Authority (UWA).

1.3 Purpose of the Study

The purpose of the study was to establish the relationship between supplier selection and supplier performance in Uganda Wildlife Authority.

1.4 Objectives of the Study

i. To examine the relationship between problem identification and supplier performance in Uganda Wildlife Authority.

ii. To assess the relationship between criteria formulation and supplier performance in Uganda Wildlife Authority.

iii. To analyze the relationship between supplier qualification and supplier performance in Uganda Wildlife Authority.

1.5 Research Questions

i. What is the relationship between problem identification and supplier performance in Uganda Wildlife Authority?

ii. What is the relationship between criteria formulation on supplier performance in Uganda Wildlife Authority?

iii. What is the relationship between supplier qualification on supplier performance in Uganda Wildlife Authority?

1.6 Scope of the Study

1.6.1 Subject Scope

The study generally looked at supplier selection processes used by public sector organization and supplier performance in procuring and disposing entities, specifically the study focused on the relationship between problem identification and supplier performance in UWA, the relationship between criteria formulation and supplier performance in UWA and the relationship between supplier qualification and supplier performance in UWA.

1.6.2 Geographical Scope

Geographically, the study was carried out at Uganda Wildlife Authority in the central region of Kampala district but specifically the "procurement stakeholders" because these are the individuals that are directly charged with supplier selection within the PDEs.

1.6.3 Time Scope

The study gathered the relevant information within a period of ten (10) months; from January to October 2019. Additionally, the study used data ranging from 2004 to date. This time was long enough for getting the required information for the study.

1.7 Significance of the Study

- To the management of PDEs, the study will help develop supplier selection managerial interventions like in contract management so as to enhance supplier performance in PDEs.

- To the academic world, the study will help to fill knowledge and practice gaps on supplier selection and supplier performance in the public sectors of developing world.

- To the procurement overseers and policy makers (PPDA), the study will help them succeed in achieving procurement objectives which leverage due to occurrence of misuse of public funds.

1.8 Conceptual framework

Independent Variable	Dependent Variable
<u>**Supplier Section**</u>	<u>**Supplier Performance**</u>

```
┌─────────────────────────────┐
│  • Problem Identification    │─────────┐
└─────────────────────────────┘          │
                                          ▼
┌─────────────────────────────┐   ┌──────────────────────┐
│  • Criteria Formulation      │──▶│  • Quality           │
└─────────────────────────────┘   │  • Timeliness        │
                                   │  • Cost              │
┌─────────────────────────────┐   └──────────────────────┘
│  • Supplier Qualification    │─────────▲
└─────────────────────────────┘
```
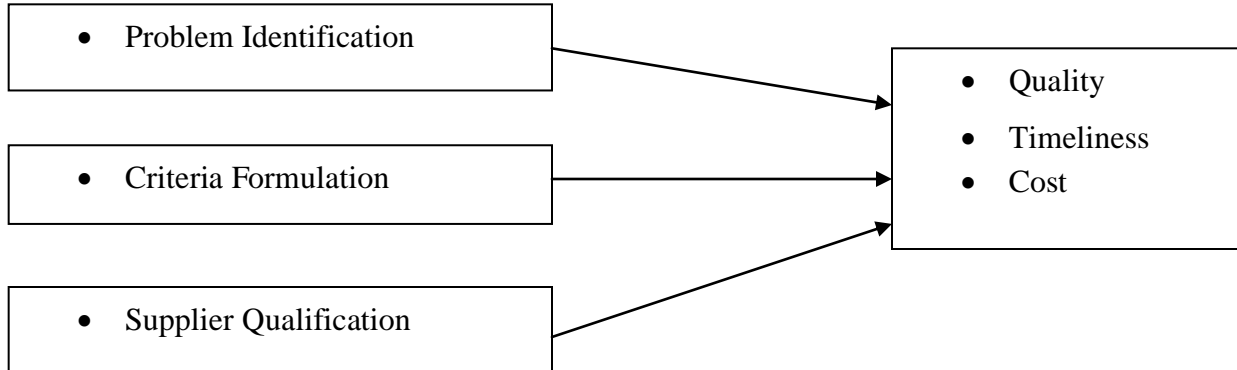
Adapted from: Monczka et. al. (2005), De Boer et. al. (2001), Aissoui et. al. (2007) and Weele (2010).

Figure 1.1: Conceptual framework

The conceptual framework reveals that problem identification, criteria formulation and supplier qualification influence the supplier's performance in procuring and disposing entities in the context of efficiency in service delivery through; improved product quality, timeliness in deliveries and reduced costs. However, the variables are affected by the intervening variable such as government policy on procurement where the procuring and disposing entity follows the framework of PPDA Regulations (2014), PPDA Guidelines (2014) and PPDA Act (2003).

CHAPTER TWO
LITERATURE REVIEW

2.1. Introduction

This chapter explores what other scholars have undertaken in supplier selection and the resulting supplier performance outcomes to provide theoretical answers to the questions on the relationship between variables. The chapter features, the theoretical review and empirical review on the relationship between supplier selection dimensions of problem identification, criteria formulation, supplier qualification and supplier performance. The literature is sourced from peer reviewed journals and few classical literature from textbooks especially on definition of key concepts.

2.2. Theoretical Review

The study is guided by widely used and celebrated "Agency Theory" proposed by Jensen & Meckling (1976). The agency theory's major assumption is that in Principal agency relationship, the agent tends to maximize benefit in the contractual arrangement at the compromise of the Principals objectives. The agent is in position to act opportunistically because he has access to transactional information by virtue of the delegated position than the Principal (Jensen & Meckling, 1976; Aylesworth, 2003). A related assumption of agency theory is that to mitigate for opportunistic behaviors and maximize the principal's objectives, the Principal must put in place mechanisms to control the behaviors of the Agent (Jensen & Meckling, 1976; Dixit, 2002; Aylesworth, 2003).

The agency theory has some limitations one of which is its assumption that all agents will act with opportunism which is not always the case (Perrow, 1986; Donaldson, 1990). Many time agents act ethically in the fulfillment of their roles to the satisfaction of the Principal's objectives (Donaldson, 1990). Thus, the fact that there is possibility of goal congruency, the agency

7

theory's assumptions end up being misleading and should not be relied on (Perrow, 1986; Arthurs & Busenitz, 2003).

Despite its limitations, the agency theory, has been widely used in management research and procurement research specially and Aylesworth (2003) specifically notes that agency theory informs procurement managers of the need to set procurer procedures and controls to ensure the goal of value for money procurement is achieved. One such control condition is supplier selection mechanism detailing the conditions the supplier must meet to qualify as a supplier based the procurement requirement. In context of UWA procurements, the "taxpayers" through the government are the principals whereas "UWA with its staff" are the agents. The taxpayers expect UWA to choose and/or prioritize procurements that are of great benefit to them. Thus, in the event where UWA follows inappropriate procurement procedures, they are bound to elicit the wrath of the taxpayers who can petition for their removal and consequential prosecution.

2.3. Conceptual Review

2.3.1. Supplier Selection

The concept of supplier selection has not been universally defined as there are various definitions raised by different scholars however what is common among many definitions is that supplier selection is a procurement stage entailing scanning the market for potential suppliers, analyzing the current and potential supplier for their responsiveness to the procurement need thereby fostering the attainment of value for money (Gary, 1994 ; Mandal & Deshmukh, 1994; Mose, Ombui, & Iravo, 2018). Weber et al, (1991) and Tan et al., (2002) in their definition point out two key activities in supplier selection to include vendor search, evaluation using a pre-established criteria to meet the objectives of procurement.

The United Nation Organization Program procurement manuals- UNOPS (2017) equally highlights that supplier selection is an important element in procurement of an organization's requirement where the selection of suppliers impacts on organization's services delivered either positively or negatively and hence any mistake in supplier selection therefore has a wide implication on organization's service delivery.

Consequently, effective supplier selection must feature a predetermined criterion, use of competition, expertise and capacity evaluation, transparency, accountability and ethical considerations (Handfield & Nicholas, 1998; Krause et al., 2000; Ogot et al., 2009; Otieno, 2004; Ogot et al., 2008; Farrington, 2006; CIPS (2005). Supplier selection is therefore designed to create and improve numerous supplier capabilities and gaining competitive edge (Krause et al., 2000).

The model below shows a summary of the supplier selection process.

Table 1: Steps in Supplier Selection Process

Moczka et al. (2005)	De Boer et al. (2001); Aissoui et al. (2007)
1) "Recognize the need for supplier selection"	Problem identification
2) "Identify key sourcing requirements"	
3) "Determine sourcing strategy"	Criteria formulation
4) "Identify potential supply source"	
5) "Limit suppliers in selection pool"	Qualification
6) "Determine the method of supplier evaluation and selection"	Final selection
7) "Select supplier and reach agreement"	

To De Boer (1998), the process leading to selection of the most responsive supplier consists of problem definition, formulation of criteria, qualification and choice on a vertical plane and, on horizontal plane, new task, modified rebuy (leverage items), straight rebuy (routine items) and straight rebuy (strategic/bottleneck) as reflected in figure 2 below.

Fig 2. The supplier selection framework by De Boer (1998)

	New task	Modified rebuy (leverage items)	Straight rebuy (routine items)	Straight rebuy (strategic/bottleneck)
Problem definition	Use a supplier or not?	Use more, fewer or other suppliers?	Replacing the current supplier?	How to deal with the supplier?
	Varying importance	Moderate/high importance	Low/moderate importance	High importance
	One-off decision	Repeating decision	Repeating decision	Repeating evaluation
Formulation of criteria	No historical data on suppliers available	Historical data on suppliers available	Historical data on suppliers available	Historical data on suppliers available, yet very few actual selections
	No previously used criteria available	Previously used criteria available	Previously used criteria available	Previously used criteria available
	Varying importance			
Qualification	Small initial set of suppliers	Large set of initial suppliers	Large set of initial suppliers	Very small set of suppliers
	Sorting rather than ranking	Sorting as well as ranking	Sorting rather than ranking	Sorting rather than ranking
	No historical records available	Historical data available	Historical data available	Historical data available
Choice	Small initial set of suppliers	Small to moderate set of initial suppliers	Small to moderate set of initial suppliers	Very small set of suppliers (often only one)
	Ranking rather than sorting	Ranking rather than sorting	Ranking rather than sorting	Historical data available
	Many criteria	Also: how to allocate volume?	Fewer criteria	Evaluation rather selection
	Much interaction	Fewer criteria	Less interaction	Sole sourcing
	No historical records available	Less interaction	Historical data available	
	Varying importance	Historical data available	Model used again	
	Model used once	Model used again	Single sourcing rather than multiple sourcing	

Identifying suppliers is a key activity in the procurement process necessary for continuous improvement in the procurement cycle and overall supplier and organisational performance (Monczka et al., 2011).

Guided by the above scholars who have strived to define supplier selection, this study conceptualized supplier selection to include three dimensions of problem identification, criteria formulation and supplier qualification as key determinants of supplier performance.

2.3.2. Supplier performance

According to Basheka (2008), supplier performance is an outcome of the effectiveness and efficiency of policies and procedures adopted by the Procuring and Disposing Entities during supplier selection. Kariuki (2013) quoting Chitkara (2005) also describes performance as the level of achievement of a set expectation. Although supplier performance relates to the pre-arranged goals or objectives which form the task parameters, widely used indicators of supplier performance include the extent to which the supplier meets the quality, time and cost expectation of the procurement (Mutava, 2012; Lambert et al., 1997; Ghodsypour & O'Brien, 1998).

- **Quality*;***

This mainly scrutinizes whether the bidder has the ability to meet the quality of the procurement requirement as well pointed out in the Statement of requirement (SOR) in form of specifications, Bills of Quantities (BOQs) and Terms of references (TORs).

- **Timeliness;**

This aspect basically focuses on the delivery time and schedules of the procurement requirement. The time taken to deliver services to users is very paramount during procurement as timely deliveries are a sign of competent bidders. Delivery relates to consistence in meeting the right quantities in the planned procurement schedules.

- **Cost;**

This looks at the amount at which the services are delivered. The services rendered by the bidders must be of good quality at low price and delivered at the right time. Therefore, the cost at which the procurement is acquired is very vital in the procurement process in order achieve savings on a procurement. This study evaluated supplier performance on the basis of the extent to which the supplier meets the time, cost and quality expectation in UWA procurements.

2.4. Empirical Review

2.4.1. Problem Identification and Supplier Performance

Problem identification in the case of supplier selection involves determining what the ultimate problem is and why selecting one or more suppliers seems the best way to handle it as asserted by De Boer et. al (2001). In support, Aissoui et. al (2006) point to the view that effective supplier and organisational performance depended on three major supplier selection decisions notably, what product to order, the quantities and from which supplier(s), and in which periods. Empirical studies notably, Carton (2004) content that the essence of performance is the creation of value also defined by the resource provider, as the essential overall performance criteria for any organization and hence the supplier's performance is highly dependent on the efficacy and efficiency of the tendering procedures.

In the same line, Aseka Japheth, (2010) found that effective problem definition facilitates supplier selection and makes a significant contribution to achievement of organizational objectives like good quality, on time deliveries, low costs, etc. Effective problem definition assists suppliers with new product development, value analysis, cost reduction and timely delivery of the desired level of quality. Furthermore, Ekaterina (2014) reports that due to shortened product life cycles, the search for new suppliers is a continuous priority for companies in order to upgrade the variety and typology of their products range. On the other hand, purchasing environments such as Just-In-Time, involve establishing close connections with suppliers leading to the concept of partnership, privileged suppliers, long-term agreement, etc. Thereby, decision makers are facing different purchasing situations that lead to different decisions. Consequently, in order to make the right choice, the purchasing process should start with finding out exactly what we want to achieve by selecting a supplier.

2.4.2. Criteria Formulation and Supplier Performance

According to Telgen et al. (2005), the criteria formulation component of supplier section involves definition of program of requirements arising from definition of functional and technical specifications which the supplier must meet. It has also been noted that regardless of the method used, supplier selection criteria development affects several activities including inventory management, production planning and control, cash flow requirements, product/service quality (Aissaoui et al. 2007).

More empirical studies such as Mamavi, et al. (2015) attribute timeliness of deliveries to use of an effective selection criteria leading to identification of the most responsive bidder while Tan (2002) equally attributes suppliers responsiveness to quality expectations to being subjected to a an evaluation criteria with quality parameters for evaluating key/preferred suppliers' performance. Furthermore, Ogot et al., (2009) seems to agree that supplier performance depended on the efforts tied to establishment of a transparent and reliable supplier selection criteria. Ogot et al., (2008) equally argues "that the principles of transparency, accountability as well as value for money need to be greatly considered despite the fact that Farrington (2006) and CIPS (2005) also supplemented that honesty, fair competition and general observation of ethical standards during the supplier selection process are fundamental to the organization's performance.

Moreover, Enyinda, et al., (2010) found that firms that were able to meet PDEs expectations attribute their performance to use of a competitive and transparent selection and evaluation criteria while Enyinda et al. (2010) equally attribute attainment of procurement KPIs to how effectively the supplier selection criteria was defined and considered in the final contract to meet end-customers' value expectation.

By using a price based evaluation criteria, Chin et. al (2011) reports that firms in their study area were able to gain low procurement costs while Paulo et, al., (2012) found out that by using "economy, plenitude, agreements and social norms" criteria, the attainment of procurement objective was enhanced. Other studies which report of a positive predictive effect of supplier selection criteria and supplier performance include Chin et. al.(2011) who associates supplier performance to use of a quality, price and delivery lead time evaluation criteria; Paulo et. al, (2012) who contends that the use of historic activity and price criteria resulted into enhanced supplier performance. Asamoah et. al., (2012) reports that effective supplier performance depends on the use of quality supplier selection criteria while Duren, et al (2015) also reported that the use of pre-qualification resulted into enhanced construction quality outcomes.

2.4.3. Supplier Qualification and Supplier Performance

De Boer et al. (2001) defines qualification as the process of reducing the set of all suppliers to a smaller set of acceptable suppliers. The concern of this phase is to limit suppliers in the selection pool; where by means of Request for Information (RFI), a purchaser obtains some basic information from a selection of suppliers about their organization (Telgen et al. 2005; Monczka et al 2005).

On the relationship between supplier qualification and supplier performance, Neupane et. al, (2012) reported that successful project outcomes depended on assessment of contractors past experience before qualification as a contractor in the construction. In related study, Arney et. al., (2014) attributed supplier performance to consideration of supplier's skills in the bidding process. More so, Salam (2011) recommended assessment of supplier performance on a set of criteria over a period of time. The overall goal of the evaluation process is to reduce the purchasing risk and to maximize the overall value to the purchaser (Monczka & Handfield &

Giunipero & Pattersson 2011). Furthermore, Berjis (2012) proposed that using an assessment criterion to qualify suppliers involving finance, human resources, past experience, quality system, health and safety system, and equipment were instrumental in project success. To Mapulanga (2015), procurement value is attained through use of cost effectiveness and experienced suppliers. Ratanya, (2013) supported Mapulanga (2015) and noted that qualification results in product and service differentiation while Al Manaseer, (2013) and Kipkorir, (2013) avers that use of qualification modalities would result in huge savings on public resources. Mwichigi, (2015) also asserts that the use of e-procurement approaches in supplier qualification promotes competition in the tendering process leading to buyers procurement satisfaction.

2.5. Summary of Literature Review

The body on knowledge in supplier selection consideration of problem definition and supplier performance reveals scanty studies in the public sector which has created a literature gap. Similarly, studies on selection criteria and supplier performance in public procurement are very scanty while studies on supplier qualification and supplier performance in the public sector are equally scanty. To fill the knowledge and practice gaps, this study examines the relationship between supplier selection of problem identification/definition, supplier selection criteria, supplier qualification and supplier performance in UWA a public entity.

CHAPTER THREE

METHODOLOGY

3.0. Introduction

This chapter presents the research methodology that was used during the study. This includes the research design, study population, sample size and selection, sampling techniques, data collection methods, Data collection instruments, procedure of data collection, reliability and validity of instruments, Data analysis, measurement of variables, data presentation and analysis and the limitations to the study.

3.1 Research design

The researcher adopted a quantitative and qualitative research approaches with a case study design which focused on a single entity. The case study approach was applicable because only employees of Uganda Wildlife Authority were selected for the study, in order to place more emphasis on a full and in depth contextual analysis of fewer events and their interrelationship, (Yin, 2009). According to Cooper and Schindler (2008), a case study research design bases on a practical, logical and structured manner of the organisation relating to the area of study and theory testing. Yin, (2012). A cross sectional research design was also applied because it helped to gather preliminary data to support further research and experimentation like age and gender.

3.2 The Study Area

The research focused on Uganda wildlife Authority in Kitante, Kampala district. The place was chosen by the researcher because it's one of the public sector organizations (PDEs) that practice supplier selection. The organization contracts private firms to supply materials and also carryout constructions of infrastructures within different geographical locations across the nation like Uganda National parks.

3.3. Population

Population refers to total sum of all people, elements from which a sample is to be selected or it is full number of elements to which the results are applied or generalized (Lokesh, 2003). It therefore refers to all cases targeted for study. Therefore, the study population of 65 included the procurement staff, contracts committee members, sub contracts committee members and top management staff.

3.4. Sample Size and selection

The study targeted 60 respondents where 14 procurement staff who were primary respondents, 5 contracts committee members, 32 sub contracts committee members and 9 top management staff. These were determined using Krejcie and Morgan (1970) as reported in Amin (2005) as shown in Table 3.1 below.

Table 5: Showing the Sample Size

Category of the Respondents	Population	Sample Size	Sampling technique
Procurement staff	15	14	Simple random sampling with replacements
Contracts Committee	5	5	Purposive sampling
Sub contracts committee	35	32	Disproportionate stratified sampling
Top management staff	9	9	Purposive sampling
Total	**65**	**60**	

Source: **Adopted from Krejcie and Morgan (1970) as cited in Amin (2005).**

From the above respondents basing on the table for determining the sample size of NEA (December, 1960), at least 60 respondents were considered as the sample size.

3.5 Sample selection Techniques

Simple random sampling with replacement is the technique whereby every member of the population has an equal and independent chance of being selected to participate in the study. Random sampling was used to select other staff of the organization from the different strata. This is because not all of the staff were involved in the study, so this gave equal chances of attaining the views from respondents to conclude to the generalization from the findings (Lokesh, 2003).

Purposive sampling is where a researcher uses his/her judgment to select participant of his/her study, this is basically done basing on previous knowledge of the population and specific purpose of the study. The study employed purposive sampling technique to select contracts committee members because of their role in procurement in the organization and they are few in number (Robson, 2006).

Disproportionate stratified sampling was also used because data was collected from different respondents where a different sample proportion was taken from each (Robson, 2006). The study employed disproportionate stratified sampling technique to select sub contracts committee members.

3.6 Sources of Data

Data sources refer to where the data used in the study is collected from. The study used both Primary and Secondary sources of data.

3.6.1 Primary Data

Primary source was collected by use of survey questionnaires consisting of closed ended questions from UWA staff. The questionnaires were used to obtain primary data. The study involved moving to Uganda Wildlife Authority headquarters and National parks for direct

responses. These responses obtained were the basis of primary source collected through use of questionnaires.

3.6.2 Secondary Data

This consists of scholarly works in the field of supplier selection and supplier performance. This put into account annual audit reports, journal articles, procurement reports, bid documents and other books from the libraries. The researcher thoroughly reviewed these documents to obtain supplementary data to that provided by the respondents (Tran et.al, 2013).

These are sources of data that constitute already available information by other scholars on the variables under study according to Meridith (2006). This source included a review of related literature from text books, reports and journals on the supplier selection and supplier performance in Procuring and Disposing Entities; these were compared with primary data.

3.7. Data Collection Tools

Research instruments or measurement scales simply mean devices for measuring the variables of interest and can be in the form of questionnaire forms comprising single items (questions), batteries of single items or scales of items which can be scored or observational schedules, structured diaries or log books or standard forms for recording data from records (Bowling, 2002).

3.7.1 Questionnaire

Lokesh (2007) defines a questionnaire as a systematic compilation of questions that are administered to a population sample from which information is sought. According to Mugenda and Mugenda (2003), questionnaires are a valuable tool for collecting a wide range of

information from a large number of respondents. Amin (2005), confirms that carefully designed questionnaires easily answer research questions.

A research questionnaire containing carefully framed questions was used to collect data for the study from the procurement staff, contracts committee members, sub contract committee members and top management staff in the organization. The questionnaires aimed at the collection of demographic information and also the general information concerning the supplier selection and supplier performance. The questionnaires also included a likert scale instrument.

The questions were structured and given to the selected staff and management of Uganda Wildlife Authority. The questionnaires were preferred because the respondents can fill in at their convenience since most of these respondents are committed with some tasks to execute. In addition, the staffs are literate so they were comfortable with questionnaires.

3.7.2 Interview Guide

Interviews are considered primary data since they allow researchers collect qualitative information for a specific study (Saunders, 2012). All interviews that were conducted were face-to-face interviews. An interview guide (Appendix: III) was used to collect qualitative data using "face-to-face" interview (Mugenda & Mugenda, 1999). Five (5) interviewees were used as key informants and these included contracts committee (CC), top management TM), and procurement staff and all their views were penned down for further reference. The interviews lasted for a period of 15-20 minutes however some respondents preferred anonymity. This method of data collection helped in triangulation of data from different methods and sources to compare the results for similarity and reliability as emphasized by Saunders et al, (2003).

3.8 Validity and Reliability

3.8.1 Validity

Validity evaluates relevancy of the questionnaire (Mugenda & Mugenda 2005). Research were first prepared, and then presented to the supervisors to check on how correct they were. After constructing the questionnaire, field testing was conducted. Golafshani (2003) advises on pilot testing the study tool to establish its reliability. A pilot study was carried out on the questionnaire so as to permit thorough check of the planned statistical and analytical procedures as well as data collection strategies in order to evaluate its usefulness. The supervisors' comments were used to improve the questionnaire by eliminating all errors. To ensure the achievement of the desired responses, the questionnaires in this study was subjected to scrutiny by 5 experts in the field of study prior to their deployment in the field to eliminate vague and ambiguous questions and streamline the content structure, flow and conciseness, to ensure content validity (Saunders et al, 2003). The results of the pre-test were used to test for content validity using the following formula:

Content Validity Index (CVI) = Agreed items by all judges
                                                Total Number of items judged

A total of 32 items out of 36 in the questionnaire were rated as relevant, yielding a content validity index as calculated below.

CVI= 32.   = 0.88

      36

According to Amin (2005), an acceptable content validity index of a research instrument should be 0.70 and above. Since the questionnaire content validity obtained for this study was 0.9, the questionnaire deployed in this research was within the acceptable range (>0.7<1) as recommended by Amin (2005).

3.8.2 Reliability

Reliability is the measure of the degree to which a research instrument yields consistent results after repeat. Cronbach's Alpha coefficient was used to measure reliability of the instrument. According to Amin (2005), an alpha of 0.5 or higher is sufficient to show reliability. The closer it is to 1 the higher the internal consistency in reliability. (Sekaran, 2003). The questionnaires were pretested using respondents within Uganda Wildlife Authority and reliability was computed and scores evaluated.

Table 6: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.715	.721	32

Source: Primary data

Upon performing the test, the results 0.715 obtained were above 0.7 and therefore the questionnaire was considered to be reliable.

3.9 Data Collection Procedure

Permission to conduct the study was sought from the Human Resource department of Uganda Wildlife Authority. In addition, the consent of participants was sought before questionnaires were delivered to them for completion. The questionnaires were collected after 1 week to avoid loss of the questionnaires.

3.10 Data Analysis and Presentation

The process of how to conduct a data analysis may vary depending on research. Nevertheless, the aim of the data analysis is to interpret data and draw meaning from it (Saunders et al., 2012).

In order to answer the research questions presented in this thesis as well as formulate conclusions, a data analysis is a necessity.

3.10.1 Quantitative Data Analysis

The data from closed-ended questionnaires relating to Supplier selection and supplier performance variables were checked for completeness and accuracy The data collected was categorized, coded and then fed into SPSS (Statistical Package for Social Sciences in Research) software and excel spread sheets and then analyzed to examine the relationship between the variables. Pearson correlation coefficient was used to determine the relationship between supplier selection and supplier performance.

Table 7: Numerical values and response modes used to interpret the means

Response mode	Interpretation
1.10-1.80 Strongly disagree	Very Low
1.90-2.60 Disagree	Low
2.70-3.40 Neutral	Undecided
3.50-4.20 Agree	High
4.30-5.00 Strongly agree	Very high

Source: Mabonga (2012) as cited by Pule (2014)

3.10.2 Qualitative data analysis

This kind of data was interpreted by explanations and substantiated using open responses from the field (Mugenda and Mugenda, 2003). While analyzing qualitative data, conclusion were made under different themes and inter-related to ascertain the relationship between supplier selection and supplier performance in UWA.

3.11 Ethical considerations

The researcher considered it essential to discuss ethical requirements within the research, since ethical concerns emerge as early as when choosing research topic, formulating the research design and how to accesses the data needed to finalize the research (Saunders et al., 2012). Saunders et al., (2012) defines ethics as the standards of behavior that guide study conduct in relation to the right of those who become the subject of a work, or affected by it. For this study, the ethical considerations can be divided and accounted for in two primary parts. The first part concerned ethical considerations addressing the organization as a whole, involving all business processes, personnel and documentations within the organization. The second part concerned all respondents participating in the study. All respondents were informed that they could be anonymous if they preferred and that participation was voluntary. Confidentiality and anonymity were adhered to and any data provided was entirely for the academic purposes only.

3.12 Limitations of Study

While carrying out the study the researcher experienced the following challenges;

i.   There was delay to collect data from the field and yet the final report was needed urgently. In face of this constraint the researcher followed a time schedule accurately to finish in time.

ii. Loss of questionnaires from the field due to a long time it took to collect them from field. The researcher coded all the questionnaires to ensure that they are all returned.

iii. Denial of access to the data collection Centre; however the researcher presented an introductory letter from the university and got a no objection letter to carry out research in UWA.

<div align="center">**CHAPTER FOUR**</div>

<div align="center">**PRESENTATION OF DATA, ANALYSIS AND INTERPRETATION OF FINDINGS**</div>

4.0 Introduction

This chapter presents data and analyses the findings obtained by the researcher analyzing and answering the objectives as stated in chapter one. The data was analyzed using descriptive statistics to generate frequencies of responses and determine the level of agreement on the study objectives.

4.1 Respond rate

Sixty (60) respondents selected to participate in the study were issued with questionnaires out of which 58 were fully filled and returned. The overall response rate was 58 out of 60 which is equivalent to 96.7%. The researcher also interviewed 5 respondents to supplement data from the questionnaires. A response rate of 40%+ is acceptable as representative of the sampled population (Mugenda & Mugenda, 2008). In this regard, a respond rate 90% was adequate and excellent for the study result to be valid.

4.2 Background information

This section features the age, years of work experience and education level of respondents.

4.2.1 Gender of the respondents at Uganda Wildlife Authority

Table 8: Gender of respondents at Uganda Wildlife Authority

		Frequency	Percent	Valid Percent	Cumulative Percent
	Gender of respondents				
Valid	Female	31	53.4	53.4	53.4
	Male	27	46.6	46.6	100
	Total	**58**	**100**	**100**	

Source: Primary data

As reflected in table 8 above, the most of the respondents in Uganda Wildlife Authority were males (31) represented by 53.4% as compared to the (27) female respondents, represented by 46.6%. This implies that the males dominated most of the positions held in Uganda Wildlife Authority and were more willing to respond to questionnaires provided.

4.2.2 Age bracket of respondents at Uganda Wildlife Authority

Table 9: Age bracket of the respondents at Uganda Wildlife Authority

		Frequency	Percent	Valid Percent	Cumulative Percent
		Age of respondents			
Valid	20-25	8	13.8	13.8	13.8
	26-30	14	24.1	24.1	37.9
	31-35	11	19	19	56.9
	36-40	18	31	31	87.9
	41 & Above	7	12.1	12.1	100
	Total	**58**	**100**	**100**	

Source: Primary data

The results in table 9 show majority of 31% (18) were within the age bracket of 36-40. This was followed by those that fall under the age bracket of 26-30, they were (14) and represented by 24.1%, those under the age bracket of 31-35 were (11) and were represented by 19%, those under the age bracket of 41 & Above were (7) and were represented by 12.1% and finally those that were 20-25 were (8) and were 13.8%. This implies that the study involved different respondents with varying ages which provided the researcher with current and longtime information about supplier selection and supplier performance in Uganda Wildlife Authority.

4.2.3 Level of education of respondents at Uganda Wildlife Authority

Table 10: Level of education of the respondents at Uganda Wildlife Authority

		Frequency	Percent	Valid Percent	Cumulative Percent
	Education Background				
Valid	Diploma	4	6.9	6.9	6.9
	Bachelor's Degree	24	41.4	41.4	48.3
	Master's Degree	30	51.7	51.7	100
	Total	**58**	**100**	**100**	

Source: Primary data

Table 10 above findings show that majority of the respondents (30) who are represented by 51.7% were university graduates with a Master's Degree. This was followed by the university graduates with a Barchelor's Degree who were (24) and represented by 41.4%. The respondents with a Diploma qualification were only (4) and represented by 6.9%. This explains the high level of competences in the academic path within Uganda Wildlife Authority. The implication of the above findings is that the majority of the respondents was elites and therefore more informed about the variables under investigation which helped to obtain reliable information.

4.2.4 Position held by respondents at Uganda Wildlife Authority

Table 11: Positions held by respondents at Uganda Wildlife Authority

		Frequency	Percent	Valid Percent	Cumulative Percent
	Position held in UWA				
Valid	Senior management	14	24.1	24.1	24.1
	Middle management	22	37.9	37.9	62.1
	Lower management	17	29.3	29.3	91.4
	Non-managerial staff	4	6.9	6.9	98.3
	Others	1	1.7	1.7	100
	Total	**58**	**100**	**100**	

Source: Primary data

From table 11 above presents the positions held by the respondents in Uganda Wildlife Authority. Based on the above results, the majority of the respondents (22) who are represented 37.9% were under the middle management cluster. This was followed by the respondents under senior management who were (14) and represented by 24.1%. The respondents under lower management who were (17) and represented by 29.3%. The respondents under Non-managerial staff were (4) who are represented by 6.9% and under other category was only (1) and was represented by 1.7%. This therefore implies that information was obtained from different knowledgeable and managerial positions to improve on reliability and adequacy.

4.2.5 Experience of respondents at Uganda Wildlife Authority

Table 12: Experience of respondents at Uganda Wildlife Authority

		Frequency	Percent	Valid Percent	Cumulative Percent
		Experience of respondents			
Valid	Less than 1 year	7	12.1	12.1	12.1
	1-3 years	14	24.1	24.1	36.2
	4-6 years	21	36.2	36.2	72.4
	<6 years	16	27.6	27.6	100
	Total	**58**	**100**	**100**	

Source: Primary data

From table 12 above presents the experience of the respondents in Uganda Wildlife Authority. Based on the above results, the majority of the respondents (21) who are represented by 36.2% had 4- 6 years' experience. This was followed by the respondents that had more than 6 years' experience who were (16) and represented by 27.6%. The respondents with 1-3 years' experience were (14) and represented by 24.1% and lastly the respondents that fall under less than 1 years' experience were only (7) and were represented by 12.1%. This therefore implies

that information was obtained from respondents with desirable statistics in regard to supplier selection and supplier performance matters due to their high level of experience.

4.3 Problem Identification at Uganda Wildlife Authority

In a bid to examine the findings on the first objective, which was to diagnose the relationship between problem identification and supplier performance in Uganda Wildlife Authority; respondents provided their views in relation to the extent to which they; strongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5). This was presented and analysed in the table below; the interpretation of the results is based on based on mean and standard deviation.

Table 15: Problem identification and supplier performance at Uganda Wildlife Authority

Problem identification and supplier performance	Scale	Freq	%	Mean	Std. Dev
Before a product is procured at Uganda Wildlife Authority, the user department meets and identifies the problem (need).	Strongly disagree	5	8.6	4.07	1.212
	Disagree	2	3.4		
	Neutral	4	6.9		
	Agree	20	34.5		
	Strongly agree	27	46.6		
During problem identification at Uganda Wildlife Authority, the user department makes consultation from technical personnel.	Strongly disagree	4	6.9	3.98	1.207
	Disagree	4	6.9		
	Neutral	6	10.3		
	Agree	19	32.8		
	Strongly agree	25	43.1		
Before procuring products at Uganda Wildlife Authority, the nature (type and	Strongly disagree	5	8.6	3.93	1.183
	Disagree	2	3.4		

size) of the product to be procured is put into consideration.	Neutral	6	10.3		
	Agree	24	41.4		
	Strongly agree	21	36.2		
During problem identification at Uganda Wildlife Authority, the user department liaises with the Procurement and Disposal Unit for procurement counsel.	Strongly disagree	4	6.9	3.86	1.220
	Disagree	5	8.6		
	Neutral	8	13.8		
	Agree	19	32.8		
	Strongly agree	22	37.9		
Whilst carrying out problem identification at Uganda Wildlife Authority, the user department carries out market survey to seek more knowledge and expertise.	Strongly disagree	2	3.4	4.14	.907
	Disagree	1	1.7		
	Neutral	5	8.6		
	Agree	29	50		
	Strongly agree	21	36.2		
Whilst carrying out problem identification at Uganda Wildlife Authority, the PDU and user department put into account collection of feedback from the consumers of similar products in the organisation.	Strongly disagree	9	15.5	3.83	1.365
	Disagree	1	1.7		
	Neutral	2	3.4		
	Agree	25	43.1		
	Strongly agree	21	36.2		
Whilst carrying out problem identification at Uganda Wildlife Authority, the PDU and user department put into account the aspect of economies of scale.	Strongly disagree	2	3.4	4.10	.892
	Disagree	1	1.7		
	Neutral	5	8.6		
	Agree	12	20.7		
	Strongly agree	46	79.3		

Problem identification during supplier selection within Uganda Wildlife Authority determines timely deliveries.	Strongly disagree	1	1.7	4.12	.818
	Disagree	3	5.2		
	Neutral	2	3.4		
	Agree	31	53.4		
	Strongly agree	19	32.8		
Problem identification in Uganda Wildlife Authority reduces costs in the organisation.	Strongly disagree	1	1.7	3.86	.926
	Disagree	5	8.6		
	Neutral	8	13.8		
	Agree	31	53.4		
	Strongly agree	13	22.4		
Problem identification determines the quality of the end products delivered at Uganda Wildlife Authority.	Strongly disagree	4	6.9	4.07	1.024
	Disagree	1	1.7		
	Neutral	1	1.7		
	Agree	33	56.9		
	Strongly agree	19	32.8		
Average Mean				**3.996**	**1.0754**

Source: Primary data

Table 15 above explores the relationship between problem identification and supplier performance in Uganda Wildlife Authority. The findings showed that the level of agreement on the relationship between problem identification and supplier performance was high with an average mean of 3.996 and a standard deviation of 1.0754. This was attributed to the proactive response in the following; Before a product is procured at Uganda Wildlife Authority, the user department meets and identifies the problem/need (Mean= 4.07, S.D= 1.212); During problem identification at Uganda Wildlife Authority, the user department makes consultation from technical personnel (Mean= 3.98, S.D= 1.207); Before procuring products at Uganda Wildlife

Authority, the nature (type and size) of the product to be procured is put into consideration (Mean= 3.93, S.D= 1.183); During problem identification at Uganda Wildlife Authority, the user department liaises with the Procurement and Disposal Unit for procurement counsel (Mean= 3.86, S.D= 1.220); Whilst carrying out problem identification at Uganda Wildlife Authority, the user department carries out market survey to seek more knowledge and expertise (Mean= 4.14, S.D= .907); Whilst carrying out problem identification at Uganda Wildlife Authority, the PDU and user department put into account collection of feedback from the consumers of similar products in the organisation (Mean= 3.83, S.D= 1.365); Whilst carrying out problem identification at Uganda Wildlife Authority, the PDU and user department put into account the aspect of economies of scale (Mean= 4.10, S.D= .892); Problem identification during supplier selection within Uganda Wildlife Authority determines timely deliveries (Mean= 4.12, S.D= .818); Problem identification in Uganda Wildlife Authority reduces costs in the organisation (Mean= 3.86, S.D= .926); Problem identification determines the quality of the end products delivered at Uganda Wildlife Authority (Mean= 4.07, S.D= 1.024).

4.4 Criteria Formulation at Uganda Wildlife Authority

In a bid to examine the findings on the second objective, which was to assess the relationship between criteria formulation and supplier performance in Uganda Wildlife Authority; respondents provided their views in relation to the extent to which they; strongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5). This was presented and analysed in the table below; the interpretation of the results is based on based on mean and standard deviation.

Table 16 Criteria Formulation and supplier performance at UWA

Criteria Formulation and supplier performance	Scale	Frequency	Percentage (%)	Mean	Std. Dev
Before bid invitation at Uganda Wildlife Authority, the PDU develops the sourcing strategy for the procurement.	Strongly disagree	5	8.6	4.17	1.126
	Disagree	0	0		
	Neutral	2	3.4		
	Agree	24	41.4		
	Strongly agree	27	46.6		
Before a product is procured at Uganda Wildlife Authority, the user department harmonizes with the PDU on what criteria to administer.	Strongly disagree	2	3.4	4.05	1.083
	Disagree	5	8.6		
	Neutral	5	8.6		
	Agree	22	37.9		
	Strongly agree	24	41.4		
Before bid invitation at Uganda Wildlife Authority, the relationship between the nature (type and size) of the product and the sourcing strategy is weighed.	Strongly disagree	4	6.9	3.88	1.061
	Disagree	1	1.7		
	Neutral	9	15.5		
	Agree	28	48.3		
	Strongly agree	16	27.6		
During criteria formulation at Uganda Wildlife Authority, the risk assessment feature is also put into consideration.	Strongly disagree	2	3.4	4.17	.819
	Disagree	0	0		
	Neutral	3	5.2		

	Agree	34	58.6		
	Strongly agree	19	32.8		
During criteria formulation at Uganda Wildlife Authority, the user department and PDU consider having an exit strategy for the procurement.	Strongly disagree	5	8.6	3.93	1.168
	Disagree	2	3.4		
	Neutral	5	8.6		
	Agree	26	44.8		
	Strongly agree	20	34.5		
During criteria formulation at Uganda Wildlife Authority, the user department and PDU consider the design capabilities of vendors.	Strongly disagree	1	1.7	4.22	.817
	Disagree	2	3.4		
	Neutral	2	3.4		
	Agree	31	53.4		
	Strongly agree	22	37.9		
During criteria formulation at Uganda Wildlife Authority, the user department and PDU consider the flexibility of vendors.	Strongly disagree	2	3.4	3.93	.971
	Disagree	4	6.9		
	Neutral	5	8.9		
	Agree	32	55.2		
	Strongly agree	15	25.9		
During criteria formulation at Uganda Wildlife Authority, the user department and PDU look at triumphing the sustainability aspects (social, economic and environment).	Strongly disagree	3	5.2	4.02	.721
	Disagree	0	0		
	Neutral	7	12.1		
	Agree	34	58.6		
	Strongly agree	14	24.1		
Criteria formulation determines timely deliveries in Uganda	Strongly disagree	4	6.9	3.95	1.050

Wildlife Authority.	Disagree	1	1.7		
	Neutral	6	10.3		
	Agree	30	51.7		
	Strongly agree	17	29.3		
Criteria formulation leads to reduced costs in Uganda Wildlife Authority	Strongly disagree	2	3.4	3.83	.939
	Disagree	3	5.2		
	Neutral	10	17.2		
	Agree	31	53.4		
	Strongly agree	12	20.7		
Criteria formulation determines the quality of the end products delivered at Uganda Wildlife Authority.	Strongly disagree	2	3.4	4.26	.928
	Disagree	2	3.4		
	Neutral	1	1.7		
	Agree	27	46.6		
	Strongly agree	26	44.8		
Average Mean				**4.037**	**0.975**

Source: Primary data

Table 16 above explores the relationship between criteria formulation and supplier performance in Uganda Wildlife Authority. The findings showed that the level of agreement on the relationship between criteria formulation and supplier performance was high with an average mean of 4.037 and a standard deviation of 0.975. This was attributed to the proactive response in the following; Before bid invitation at Uganda Wildlife Authority, the PDU develops the sourcing strategy for the procurement (Mean= 4.17, S.D= 1.126); Before a product is procured at Uganda Wildlife Authority, the user department harmonizes with the PDU on what criteria to

administer (Mean= 4.05, S.D= 1.083); Before bid invitation at Uganda Wildlife Authority, the relationship between the nature (type and size) of the product and the sourcing strategy is weighed (Mean= 3.88, S.D= 1.061); During criteria formulation at Uganda Wildlife Authority, the risk assessment feature is also put into consideration (Mean= 4.17, S.D= .819); During criteria formulation at Uganda Wildlife Authority, the user department and PDU consider having an exit strategy for the procurement (Mean= 3.93, S.D= 1.168); During criteria formulation at Uganda Wildlife Authority, the user department and PDU consider the design capabilities of (Mean= 4.22, S.D= .817); During criteria formulation at Uganda Wildlife Authority, the user department and PDU consider the flexibility of vendors (Mean= 3.93, S.D= .971); During criteria formulation at Uganda Wildlife Authority, the user department and PDU look at triumphing the sustainability aspects (social, economic and environment) (Mean= 4.02, S.D= .761); Criteria formulation determines timely deliveries in Uganda Wildlife Authority (Mean= 3.95, S.D= 1.050); Criteria formulation leads to reduced costs in Uganda Wildlife Authority (Mean= 3.83, S.D= .939); Criteria formulation determines the quality of the end products delivered at Uganda Wildlife Authority (Mean= 4.26, S.D= .928).

4.5 Supplier Qualification at Uganda Wildlife Authority

In a bid to examine the findings on the third objective, which was to analyze the relationship between supplier qualification and supplier performance in Uganda Wildlife Authority; respondents provided their views in relation to the extent to which they; strongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5). This was presented and analysed in the table below; the interpretation of the results is based on based on mean and standard deviation.

Table 14: Supplier Qualification and supplier performance at Uganda Wildlife Authority

Supplier Qualification and supplier performance	Scale	Frequency	Percentage (%)	Mean	Std. Dev
Before bid invitation at Uganda Wildlife Authority, a market survey is carried out.	Strongly disagree	3	5.2	4.16	1.040
	Disagree	2	3.4		
	Neutral	3	5.2		
	Agree	25	43.1		
	Strongly agree	25	43.1		
During supplier qualification in Uganda Wildlife Authority, a shortlist of potential vendors is made.	Strongly disagree	2	3.4	4.07	.989
	Disagree	3	5.2		
	Neutral	5	8.6		
	Agree	27	46.6		
	Strongly agree	21	36.2		
Before bid invitation at Uganda Wildlife Authority, the historical data regarding suppliers is assessed.	Strongly disagree	1	1.7	4.17	.881
	Disagree	3	5.2		
	Neutral	3	5.2		
	Agree	29	50		
	Strongly agree	22	37.9		
Before entering into a contract at	Strongly disagree	5	8.6	4.21	.913

Uganda Wildlife Authority, due diligence on the qualified suppliers is carried out.	Disagree	0	0		
	Neutral	4	6.9		
	Agree	23	39.7		
	Strongly agree	26	44.8		
During supplier qualification at Uganda Wildlife Authority, the technical and financial capacity and capabilities of the vendors are weighed.	Strongly disagree	4	6.9	3.91	1.097
	Disagree	3	5.2		
	Neutral	4	6.9		
	Agree	30	51.7		
	Strongly agree	17	29.3		
Supplier qualification carried out at Uganda Wildlife Authority determines innovations within the organisation.	Strongly disagree	5	8.6	3.95	1.176
	Disagree	2	3.4		
	Neutral	5	8.6		
	Agree	25	43.1		
	Strongly agree	21	36.2		
Qualified suppliers play a critical role on the quality of the end product delivered at Uganda Wildlife Authority	Strongly disagree	2	3.4	4.21	.932
	Disagree	1	1.7		
	Neutral	5	8.6		
	Agree	25	43.1		
	Strongly agree	25	43.1		
Qualification of suppliers ultimately determines	Strongly disagree	4	6.9	4.14	1.115

timely deliveries in Uganda Wildlife Authority.	Disagree	1	1.7		
	Neutral	5	8.6		
	Agree	21	36.2		
	Strongly agree	27	46.6		
Supplier qualification leads to reduced costs in Uganda Wildlife Authority.	Strongly disagree	3	5.2	4.09	.978
	Disagree	0	0		
	Neutral	7	12.1		
	Agree	27	46.6		
	Strongly agree	21	36.2		
Average Mean				**4.10**	**1.013**

Source: Primary data

Table 14 above explores the relationship between supplier qualification and supplier performance in Uganda Wildlife Authority. The findings showed that the level of agreement on the relationship between supplier qualification and supplier performance was high with an average mean of 4.10 and a standard deviation of 1.013. This was attributed to the proactive response in the following; Before bid invitation at Uganda Wildlife Authority, a market survey is carried out (Mean= 4.16, S.D= 1.040); During supplier qualification in Uganda Wildlife Authority, a shortlist of potential vendors is made (Mean= 4.07, S.D= .989); Before bid invitation at Uganda Wildlife Authority, the historical data regarding suppliers is assessed (Mean= 4.17, S.D= .881); Before entering into a contract at Uganda Wildlife Authority, due diligence on the qualified suppliers is carried out (Mean= 4.21, S.D= .913); During supplier qualification at Uganda Wildlife Authority, the technical and financial capacity and capabilities of the vendors are weighed (Mean= 3.91, S.D= 1.097); Supplier qualification carried out at Uganda Wildlife Authority determines innovations within the organisation (Mean= 3.95, S.D=

1.176); Qualified suppliers play a critical role on the quality of the end product delivered at Uganda Wildlife Authority (Mean= 4.21, S.D= .932); Qualification of suppliers ultimately determines timely deliveries in Uganda Wildlife Authority (Mean= 4.14, S.D= 1.115); Supplier qualification leads to reduced costs in Uganda Wildlife Authority (Mean= 4.09, S.D= .978).

4.6 Supplier performance at Uganda Wildlife Authority

Respondents provided their views in relation to the extent to which they; strongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5). This was presented and analysed in the table below; the interpretation of the results is based on mean and standard deviation.

Table 15: Supplier performance at Uganda Wildlife Authority

Supplier performance (Quality, Timeliness and Cost)	Scale	Frequency	Percentage (%)	Mean	Std. Dev
Supplier selection has helped to improve the quality of the end products delivered to Uganda Wildlife Authority.	Strongly disagree	7	12.1	3.97	1.270
	Disagree	1	1.7		
	Neutral	2	3.4		
	Agree	25	43.1		
	Strongly agree	23	39.7		
Supplier selection has helped to reduce the overall time taken to deliver services and products to Uganda Wildlife Authority.	Strongly disagree	4	6.9	3.90	1.150
	Disagree	4	6.9		
	Neutral	5	8.6		
	Agree	26	44.8		
	Strongly agree	19	32.8		
Supplier selection has enabled	Strongly	1	1.7	4.07	.792

the number of complete deliveries to be made on time in Uganda Wildlife Authority.	disagree				
	Disagree	1	1.7		
	Neutral	7	12.1		
	Agree	33	56.9		
	Strongly agree	16	27.6		
Supplier selection has resulted into reduced lead time in Uganda Wildlife Authority.	Strongly disagree	2	3.4	4.09	.942
	Disagree	2	3.4		
	Neutral	5	8.6		
	Agree	29	50		
	Strongly agree	20	34.5		
Supplier selection has aimed at responding to needs of Uganda Wildlife Authority on time.	Strongly disagree	4	6.9	3.95	1.115
	Disagree	3	5.2		
	Neutral	4	6.9		
	Agree	28	48.3		
	Strongly agree	19	32.8		
Supplier selection has helped to reduce on the costs of the products delivered to Uganda Wildlife Authority.	Strongly disagree	4	6.9	4.10	1.119
	Disagree	2	3.4		
	Neutral	3	5.2		
	Agree	24	41.4		
	Strongly agree	25	43.1		
Average Mean				**4.013**	**1.0645**

Source: Primary data

Table 15 above explores the supplier performance in Uganda Wildlife Authority. The findings showed that the level of agreement on the supplier performance was high with an average mean of 4.013 and a standard deviation of 1.0645. This was attributed to the proactive response in the following; Supplier selection has helped to improve the quality of the end products delivered to Uganda Wildlife Authority (Mean= 3.97, S.D= 1.270); Supplier selection has helped to reduce the overall time taken to deliver services and products to Uganda Wildlife Authority (Mean= 3.90, S.D= 1.150); Supplier selection has enabled the number of complete deliveries to be made on time in Uganda Wildlife Authority (Mean= 4.07, S.D= .792); Supplier selection has resulted into reduced lead time in Uganda Wildlife Authority (Mean= 4.09, S.D= .942); Supplier selection has aimed at responding to needs of Uganda Wildlife Authority on time (Mean= 3.95, S.D= 1.115); Supplier selection has helped to reduce on the costs of the products delivered to Uganda Wildlife Authority (Mean= 4.10, S.D= 1.119).

4.7 Inferential Statistical Analysis

Pearson Correlation Coefficient was used to measure relationships that existed among the two study variables and their constructs.

4.7.1 Correlation analysis between problem identification and supplier performance

To test if there was a significant relationship between problem identification and supplier performance at UWA, a correlation analysis was conducted using Pearson's correlation coefficient and significance statistics and the findings are in the table below.

Table 16: Correlation Matrix between Problem identification and supplier performance

		Problem identification	Supplier performance
Problem Identification	Pearson Correlation	1	.828[**]
	Sig. (2-tailed)		.000
	N	58	58
Supplier performance	Pearson Correlation	.828[**]	1
	Sig. (2-tailed)	.000	
	N	58	58

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

Source: Primary data

$P \leq 0.05$

The correlation analysis findings in the table 16 above show the relationship between problem identification and supplier performance. The findings hence revealed that there was a strong positive relationship between problem identification and supplier performance in UWA which was statistically significant (r = 0.828; p <0.000). In regard to interviews conducted, one of the respondents who had worked with UWA for more than 6 years and coming from a senior management level noted that:

> *"Problem identification involves the recognition of the need by the user department and therefore it is an ideal stage during the selection of suppliers where the work plan of the users is built-up basing on the needs acknowledged during this stage."*

Another respondent who had worked with UWA for more than 3 years and coming from the lower management also noted that:

> *"Failure at the problem identification stage of any entity like UWA, leads to general failure within the processes of the organisation. He further noted that failure to clearly define the problem at this stage, UWA would definitely source out to suppliers of no use who would not ultimately unravel the needs within UWA".*

4.7.2 Correlation analysis between Criteria formulation and supplier performance

To test if there was a significant relationship between criteria formulation and supplier performance at UWA, a correlation analysis was conducted using Pearson's correlation coefficient and significance statistics and the findings are in the table below.

Table 17: Correlation between criteria formulation and supplier performance

		Criteria Formulation	Supplier Performance
Criteria Formulation	Pearson Correlation	1	.851[**]
	Sig. (2-tailed)		.000
	N	58	58
Supplier Performance	Pearson Correlation	.851[**]	1
	Sig. (2-tailed)	.000	
	N	58	58
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Primary data

$P \leq 0.05$

The correlation analysis findings in the table 17 above show the relationship between criteria formulation and supplier performance. The findings hence revealed that there was a strong positive relationship between criteria formulation and supplier performance in UWA which was statistically significant ($r = 0.851$; $p < 0.000$).

In regard to interviews conducted, one of the respondents who had worked with UWA for 4 years and coming from a middle management level pointed out that:

> *"Criteria formulation is a very sensitive stage during supplier selection because it is where the organisation clearly describes or specifies the design and functionality of what they need for example; a green motor vehicle with a four wheel drive, with VVTI engine, etc. She further added that since she has enough control for criteria formulation, she hence goes an extra mile to inquire from technical personnel for different procurements in order to derive clear specifications that can solve the need of the organisation."*

4.7.3 Correlation analysis between Supplier qualification and supplier performance

To test if there was a significant relationship between supplier qualification and supplier performance at UWA, a correlation analysis was conducted using Pearson's correlation coefficient and significance statistics and the findings are in the table below.

Table 18: Correlation Matrix between Supplier qualification and supplier performance

		Supplier qualification	Supplier Performance
Supplier qualification	Pearson Correlation	1	.855[**]
	Sig. (2-tailed)		.000
	N	58	58
Supplier Performance	Pearson Correlation	.855[**]	1
	Sig. (2-tailed)	.000	
	N	58	58
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Primary data

$P \leq 0.05$

The correlation analysis findings in the table 18 above show the relationship between supplier qualification and supplier performance. The findings hence revealed that there was a strong positive relationship between supplier qualification and supplier performance in UWA which was statistically significant ($r = 0.855$; $p < 0.000$).

In regard to interviews conducted, one of the respondents who had worked with UWA for over 6 years and coming from the top management level noted that:

> *"Supplier qualification is where the suppliers for a specific procurement are selected from a pool and the best supplier with the least price is selected basing on the set criteria to carry out the assignment. He further noted that at this stage, when the organisation fails to select the right and competitive suppliers from the pool to be qualified for specific procurements, the quality of the end product can easily be compromised. But however, UWA has done its best to have proficient suppliers on board to handle projects within the organisation in order to have value for money."*

4.7.4 Correlation analysis between Supplier selection and supplier performance

To test if there was a significant relationship between supplier selection and supplier performance at UWA, a correlation analysis was conducted using Pearson's correlation coefficient and significance statistics and the findings are in the table below.

Table 19: Correlation Matrix between Supplier selection and supplier performance

		Supplier selection	Supplier Performance
Supplier qualification	Pearson Correlation	1	.895[**]
	Sig. (2-tailed)		.000
	N	58	58
Supplier Performance	Pearson Correlation	.895[**]	1
	Sig. (2-tailed)	.000	
	N	58	58
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Primary data

$P \leq 0.05$

The correlation analysis findings in the table 19 above show the relationship between supplier selection and supplier performance. The findings hence revealed that there was a strong positive relationship between supplier selection and supplier performance in UWA which was statistically insignificant ($r = 0.895$; $p < 0.000$).

In regard to interviews conducted, one of the respondents pointed out that:

> *"UWA generally selects its suppliers basing on some criteria that are set by PPDA and basing on the practice n UWA, there has been value for money from the projects done within the organisation."*

A procurement officer was quoted noting that:

> *"Supplier selection is a very delicate process which is highly affected with corruption practices. He further urges that UWA has managed to diligently carry out supplier selection and the pool that is qualified with UWA has the capacity and capability to carry out the assignments with maximum proficiency."*

CHAPTER FIVE

DISCUSSIONS, SUMMARY, CONCLUSION AND RECOMMENDATIONS OF THE STUDY FINDINGS

5.0 Introduction

This chapter presents the discussions of the findings, summary, conclusion and recommendations of the study. The findings are focused on the research objectives that include; the relationship between problem identification, criteria formulation, and supplier qualification and supplier performance in Uganda Wildlife Authority. It also presents the limitations, contributions of the study and areas of further research in the last section.

5.1 Discussion of the study findings

5.1.1 Problem identification and supplier performance

Problem identification in Uganda Wildlife Authority was highly practiced within the organisation and later on was correlated against supplier performance using the Pearson's correlation coefficient, and it was revealed that there was a strong positive relationship between problem identification and supplier performance in UWA which was statistically significant. This implied that problem identification was proficiently adhered to by Uganda Wildlife Authority hence resulting into a strong positive relationship between problem identification and supplier performance. This is aligned with Aissoui et. al (2006) who asserted that a synthesis of purchasing literature reveals that there are 3 major decisions related to problem identification namely; what product to order, in which quantities and from which times and in what time periods. This therefore implies that UWA adequately adheres to the three decisions as well specified by Aissoui et. al (2006).

5.1.2 Criteria formulation and supplier performance

Criteria formulation in Uganda Wildlife Authority was highly practiced within the organisation and later on was correlated against supplier performance using the Pearson's correlation coefficient, and it was revealed that there was a strong positive relationship between criteria formulation and supplier performance in UWA which was statistically significant. This implied that criteria formulation was proficiently adhered to by Uganda Wildlife Authority hence resulting into a strong positive relationship between criteria formulation and supplier performance. This is hence linked with Weber, Current and Benton (1991) who based on reading

of 74 articles and compressive review of vendor evaluation methods, they summarized that quality was important criteria followed by delivery and cost (Wu et. al, 2008; Paulo et. al, 2012). This therefore implies that criteria formulation is highly considered by UWA in there procurement practices.

5.1.3 Supplier Qualification and supplier selection

Supplier qualification in Uganda Wildlife Authority was highly practiced and later on was correlated against supplier performance using the Pearson's correlation coefficient, and it was revealed that there was a strong positive relationship between supplier qualification and supplier performance in UWA which was statistically significant. This implied that supplier qualification was proficiently adhered to by Uganda Wildlife Authority hence resulting into a strong positive relationship between supplier qualification and supplier performance. This is aligned with Duren, et al (2015) who suggested that one method of improving construction performance is to qualify suppliers prior to the bidding process so as to ensure that suppliers are able to execute the assigned project in accordance with client and project objectives. Suppliers' qualification is therefore a commonly used process for identifying a pool of competitive, competent and capable suppliers from which tenders may be sought (Lam, Shankar, Erramilli, & Murthy, 2004). In view of the foregoing, it is expedient to investigate the effect of supplier qualification on service delivery, more importantly at this time when supplies have become more. This therefore implies that UWA highly carries out supplier qualification during their procurement practices.

5.1.4 Supplier selection and supplier performance
Supplier performance in Uganda Wildlife Authority was highly practiced in the organisation and later on was correlated against supplier performance using the Pearson's correlation coefficient, and it was revealed that there was a strong positive relationship between supplier selection and supplier performance in UWA which was statistically significant. This implied that supplier selection was adeptly adhered to by Uganda Wildlife Authority hence resulting into a strong positive relationship between supplier selection and supplier performance. This was in line with Tan et al., (2002) who asserted that supplier selection involves factors that an organization uses when selecting and evaluating key/preferred suppliers' performance. Therefore, this implies that

UWA highly considers supplier selection as a superlative practice and has hereafter been able to guarantee high supplier performance within the organisation.

5.2 Summary of the study findings

5.2.1 Problem identification and supplier performance

The study found out that a high level of problem identification in Uganda Wildlife Authority was indicated with an average mean of 3.996 which was then correlated against supplier performance using the Pearson's correlation coefficient, and it was revealed that there was a high relationship between problem identification and supplier performance in UWA which was statistically insignificant ($r = 0.828$; $p < 0.000$).

5.2.2 Criteria formulation and supplier performance

The study found out that a high level of criteria formulation in Uganda Wildlife Authority was indicated with an average mean of 4.037 which was then correlated against supplier performance using the Pearson's correlation coefficient, and it was revealed that, there was a high relationship between criteria formulation and supplier performance in UWA which was statistically significant ($r = 0.848$; $p < 0.000$).

5.2.3 Supplier qualification and supplier performance

The study found out that a high level of supplier qualification in Uganda Wildlife Authority was indicated with an average mean of 4.10 which was then correlated against supplier performance using the Pearson's correlation coefficient, and it was revealed that, there was a high relationship between supplier qualification and supplier performance in UWA which was statistically significant ($r = 0.855$; $p < 0.000$).

5.2.4 Supplier selection and supplier performance

The study found out that there is a high level of supplier performance in Uganda Wildlife Authority which was indicated with a very high average mean of 4.013. It was revealed that,

there was a strong positive relationship between supplier selection and supplier performance in UWA which was then correlated against supplier performance using the Pearson's correlation coefficient, and it was revealed that, there was a high relationship between supplier selection and supplier performance in UWA which was statistically significant ($r = 0.895$; $p < 0.000$).

5.3 Conclusion of the study

Basing on the above findings, the researcher concluded that: the respondents highly agreed that there was a strong positive relationship between problem identification and supplier performance in Uganda Wildlife Authority, the respondents highly agreed that there was a strong positive relationship between criteria formulation and supplier performance in UWA, the respondents highly agreed that was a strong positive relationship between supplier qualification and supplier performance in UWA and finally, it was revealed that, the respondents highly agreed that was a strong positive relationship between supplier selection and supplier performance in UWA.

The strong positive relationship between supplier selection and supplier performance can be attributed to other factors like contract management, etc.

In this regard, managers, decision makers and practitioners at Uganda Wildlife Authority need to continue offering more considerable attention to supplier selection in its entirety, in particular, ensure there is a combined effort on problem identification, criteria formulation and supplier qualification. This will help the entity achieve set targets with an expenditure that is commensurate to the delivered outputs.

5.4 Recommendation of the study

The researcher puts forward the following recommendations for Uganda Wildlife Authority;

There is need for the UWA management to pay closer attention to problem identification which registered the lowest mean compared to other constructs. The role of problem identification in improving supplier performance cannot be denied. Some of the benefits accrued from appropriate problem identification is acquisition of good quality output that clearly responds to the need that is assessed within the organization.

Secondly, criteria formulation is another aspect that registered a low mean. This implies that it's a factor that is not comprehensively considered during supplier selection in UWA. However, criteria formulation helps to clearly describe the principles or standards that will be adhered to

while selecting viable suppliers and therefore criteria formulation extensively describes the time needed to complete the project hence reducing the lead time within the organisation.

Lastly, supplier performance also had a low mean and therefore is need for UWA management to embark on other factors influencing supplier performance that should be put into consideration for example contract management, technological advancements and economic environment, etc.

5.5 Areas for further study

This study was limited by a number of factors, whose analysis provides directions and areas for study in the area of supplier selection and supplier performance.

First, the study focused on the Procuring and disposing entities but with greater focus on Central Government Entities (CGEs) like Uganda Wildlife Authority but there other PDEs under Local Governments (LGs) and other parastatals under central government which can be research on.

Secondly, the findings presented here cannot also be generalized to the private sector, where there is not a law to govern procurement activities and procurement policies vary from firm to firm eve within the same industry. On the other hand, some firms in the private sector, do not even have procurement policies in place. The researcher therefore recommends that studies that are specific to the private sector can be carried out to ascertain the relationship between supplier selection and supplier performance.

REFERENCES

Africa Local Council Oversight and Social Accountability [ALCOSA] (2008), Studying Local Council Oversight in Uganda: Draft District Reports, Mentor Consults Limited & DEGE Consult.

Aissoui et al. (2007). Supplier selection and order lot sizing: A review.

Al Manaseer, E. (2013). Development of Risk Management Model for Public Tenders.

Amin, M.E. (2005). Social science research; conception methodology and analysis. Kampala: Makerere University Printery.

Arney, L., Yadav, P., Miller, R., & Wilkerson, T. (2014). Improving procurement practices in developing country health programs. *William Davidson Institute, University of Michigan*.

Asamoah D, Annan J& Nyarko S.(2012)- AHP Approach for Supplier Evaluation and Selection in a Pharmaceutical Manufacturing Firm in Ghana- International Journal of Business and Management.

Aseka Japheth Tom., (2010). Supplier selection criteria and performance of manufacturing firms listed in Nairobi stock exchange.

Avotri, N. S. (2012). *Assessment of the Prospects and Challenges of Procurement Reforms in Ghana: The Case of Volta River Authority* (Doctoral dissertation).

Aylesworth, R.M. (2003). Using Agency theory to model Cooperative Public Purchasing.

BA, L. A. A. (2014). *An evaluation of the importance that Institutions attach to supplier selection criteria in Public Procurement practices in Ghana*.

Bailey, P., Farmer & D., Jessop (1997). Purchasing principles and management: Financial Times-Pitman Publishing.

Barr et al (2013). Random effects structure for conformity hypothesis testing.

Basheka, B. C., (2008). Procurement planning and accountability of local government procurement systems in developing countries: evidence from Uganda.

Beil, D. and Ross, M. (2009). Effects of supplier selection process on Post contract supplier performance.

Berjis, P. (2012). *Effectiveness of Prequalification Practices in Public Procurement* (Doctoral dissertation).

Boer, L., der Wegen, L., and Telgen, J. (1998). Outranking methods in support of supplier selection. European Journal of Purchasing and Supply Management.

Bowling, A., (2002). Research methods in health. Investigating health and health services.

Branch, A.E. (2001). International purchasing and management. (1st Edition). Thomson learning.

Bukhala, S. (2003) "Use of strategic approach to procurement of goods and services in Kenya Public universities". Nakuru Kenya. COMESA Public.

Carton, R. B., (2004). Measuring organizational performance: an exploratory study, Unpublished Doctoral Dissertation, The University of Georgia, Athens, GA.

Cheraghi H.S, Dadashzadeh M, Subramanian M, (2004) Critical Success Factors for Supplier Selection: An Update, Journal of Applied Business Research Volume 20, Number 2.

Chirchir, I., and Gachunga, H. (2015). Role of procurement pre-qualification on the performance of selected public institutions in Nairobi City Council.

Chitkara, K, K. (2005) Construction Project Management: Planning, Scheduling, and Controlling. Tata McGraw Hill Publishing Company Ltd.

Choi, T. Y., & Hartley, J. L (1996). An exploration of supplier selection practices across supply chain. *Journal of Operations Management*.

Chony, K L and Lee, W.B (2002-2003)" A generic tool for the selection and management of supplier relationship in an outsourced manufacturing environment; the application of case based reasoning; logistics information management.

CIPS Australia. (2005). How do we measure up?. An introduction to performance measurement of the procurement profession. Retrieved July 17, 2008, from Chartered Institute of Purchasing and supply.

Cohen J.D. (2005). An Integrative Theory of Locus Coeruleus-Norepinephrine Function: Adaptive Gain and Optimal Performance.

Cousins P, Lamming R, Lawason B and Squire B. (2008). Strategic supply management: principles, theories and practice.

Cooper, D., and Schindler, P. (2008). Business research method. The 10th edition.

Dahel, N.E. (2003). Vendor selection and order quality allocation in volume discount environments'' supply chain Management: An International journal vol 8 pp 335-31993 Delivery in Uganda: local District Council Score Card 2008/09, Kampala.

Dahel, N.E. (2003). Vendor selection and order quality allocation in volume discount environments'' supply chain Management: An International journal Vol 8.

De Boer. L, Van der Wegen L, Telgen J., (1998). Outranking methods in support of supplier selection. European journal of Purchasing and Supply management.

De Boer et al. (2001). Supplier selection for development of Petroleum Industry Facilities, applying multi-criteria Decision making techniques.

Denzin, N. K., & Lincoln, Y. S. (1998). Collecting and interpreting qualitative materials. Thousand Oaks: Sage Publication.

Dickson, G.W. (1966). An analysis of vendor selection systems and decisions. Journal of Purchasing, Volume 2.

Dixit, A. (2002). Incentives and Organisations in Public sector. An Interpretive Review

Duren, J. V., Dorée, A., &Voordijk, H. (2015). Perceptions of success in performance-based procurement: Differences between clients and contractors. *Construction innovation*, *15*(1), 107 128.

Effie, J. Lukhoba (2015), Effect of supplier development on supplier performance: A survey of food manufacturing companies in Kisumu County. Vol. III.

Eggertsson, T. (1990). Economic Behavior and institutions. (Reprinted version 1994). Cambridge surveys of economic literature. Cambridge University Press.

Eisenhardt, M. K. (1989). Agency theory: An assessment and review. Academy of Management Review, 14(1), 57.

Elgood, J., Gilby, (2008). Attitudes towards Health and Safety: A Quantitative Survey of Stakeholder Opinion.

Enyinda, C I., Dunu E., Gebremikael F. (2010). An analysis of strategic supplier selection and evaluation in a generic pharmaceutical firm supply chain, Volume 17.

European Union procurement treaty (1957)

Falagario, M., Sciancalepore, F., Costantino, N., & Pietroforte, R. (2012). Using a DEA-cross efficiency approach in public procurement tenders. *European Journal of Operational Research*.

Frost A.F & Long F. (2000)-Quality Management Standards Their Importance In Supplier Selection Criteria -Curtin University of Technology.

Garry (1994). An analysis of Vendor selection system and decisions.

Godsypour, S.H and O'brien .C. (1998). A decision support system for supplier selection using an integrated analytic hierarchy process and linear programming.

Golafshani, N. (2003). Understanding Reliability and Validity in Qualitative Research.

Gordon, S.R (2008). Supplier evaluation and performance excellence. Aguide to metrics and successful results.

Government of Uganda Public Procurement and Disposal A of assets Act, (2003).

Hai, N. L., & Watanabe, T. (2014).The status quo and perspective for improvement of public works procurement performance in Vietnam.*Journal for the Advancement of Performance Information & Value*.

Handfield, R. B., & Nicholas, E. L. Jr (1998). *An introduction to supply chain management*. Upper saddle river, NJ: Prentice Hall.

Hensler (2004). Strategic supply selection: Understanding long term buyer relationship. Business horizons.

Hunja, R., (2001). Obstacles to public sector reform in developing countries, World Bank Paper (91993006), November 19, 2001.

Idiake J. E., Shittu, A. A., Anunobi, A. L., & Akamnu, W. P. (2015). A comparative analysis of traditional and design & build methods of procurement in the Nigerian construction industry.

Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. Journal of Financial Economics, 3, 305-360.

Jensen, M. (1983). Organization theory and methodology. Accounting Review, 50, 319- 339.

Julius Kakuru (2004), Managing the Operation Function of the firm

Kakuru (2004) managing the operation function of the firm. *International Journal of Social Sciences and Entrepreneurship*, *1*(7), 216-251.

Kariuki, J.N. (2013). The effect of strategic innovation on performance of mobile telecommunication firms in Kenya.

Kenneth Lyson and Brian Farrington (2006), Purchasing and Supply Chain Management 6th edition.

Kiage, O. J. (2013). Factors Affecting Procurement Performance: A Case of Ministry of Energy. Department of Entrepreneurship Jomo Kenyatta University of Agriculture and Technology.

Kipchilat, G.T (2006). "An Evaluation of the impact of the public procurement Regulations on Procurement in Kenyan Public Universities," Unpublished MBA project. Egerton University

Kipkorir, J. (2013). The role of proactive procurement on strategic Procurement performance at public institutions in Kenya: a Survey of Rongai sub-county in Nakuru County.

KPMG International, (2012), the power of procurement; global survey of procurement functions, © 2012 KPMG International Cooperative.

Krause et. al, D.R. and Ellram, L.M. (1997), "Success factors in Supplier development". Internal journal of Physical distribution and logistics management.

Krause, D.R., Scannell, T.V., & Calantone, R.J, (2000). A structural analysis of the effectiveness of buying firms' strategies to improve supplier performance.

Krejcie, Robert V., and Morgan, Daryle W., "*Determining sample size for research Activities*", Educational and psychological Measurement, 1970.

Lam, S. Y., Shankar, V., Erramilli, M. K., & Murthy, B. (2004). Customer value, satisfaction, loyalty, and switching costs: An illustration from a business-to-business service context. Journal of the Academy of Marketing Science.

Lamming, R. (1193). Relationship strategy, development and purchasing practice.

Lambert, D.M, Cooper, M.C and Pagh, J.D. (1998). Supply chain management. Implementation issues and research opportunities. The international journal of logistics management.

Lagat, J. (2013). Factors affecting integration of green purchasing in procurement at Kenya Airways Limited. *International Journal of Social Sciences and Entrepreneurship*, *1*(7), 216-251.

Leenders, M. L., Fearon, H.E. (2002) and Johnson, P.F. Purchasing and supply management, New York: McGraw-Hill.

Lokesh, (2003): Methodology of Educational Research, New Delhi, Vikas Publishing House.

Louviere, J.J., Verma, R., and Thompson, G.M., (1999). Configuring Service Operations in Accordance with Customer Needs and Preferences, Journal of Service Research.

Luitzen De Boer, Merjin M, Fredo S. and Telgen J. (2000).An analysis of some mistakes, miracles and myths in supplier selection.

Mahmut, S. (2006). A Review and Critique of Supplier Selection Process and Practices.

Mamavi et. al. (2015). How do strategic networks influence awarding of contracts? Evidence from French public procurement.

Mandal, A., Deshmukh, S.G., (1994). Vendor selection using Interpretive Structural Modelling (ISM). International Journal of Operations and Production Management.

Mapulanga, P. (2015). Public procurement legislation and the acquisition of library materials in academic libraries in Malawi. Library Review.

Martin Mukabi Shiati, Dr. Yusuf Kibet and Dr. Douglas Musiega (2014), determinants of supplier selection on the performance of public institutions in Kenya.

Mitnick, B. M. (1975). The Theory of Agency: The Policing "Paradox" and Regulatory Behavior. Public Choice, 24, 27-42.

Modern evolution in supplier selection criteria and methods by Amol Nayakappa Patil*1, 2014.

Moe, T. (1984). The New Economics of Organization. American Journal of Political Science, 28, 739-777.

Monczka, R, Handfield. R.B., Giunipero. L.C. & Patterson. L.J. (2011). Purchasing and Supply Chain Management. Fourth Edition.

Mortensen, M. H., Freytag, P. V., & Arlbjørn, J. S. (2008). Attractiveness in supply chains: A process and matureness perspective. International Journal of Physical Distribution and Logistics Management.

Mose, J.N., Ombui, K., & Iravo, M (2018). The role of supplier selection criteria on procurement performance in public universities; A case of Machakos University.

Munson, C. L., Rosenblatt, M. J., (1997). The impact of Local content rules on Global sourcing decision, production and operation management.

Mugenda, O. & Mugenda, G. (2005). *Research Method,* Quantitative and Qualitative Approaches. Nairobi: Nairobi Act Press.

Muyomba, L., (2010). Local Government Councils Performance and the Quality of Service.

Mwichigi, S. N., &Waiganjo, E. W. (2015). Relationship between Outsourcing and Operational Performance of Kenya's Energy Sector.

Nakamura, R. & Smallwood, F. (1980). The Politics of Policy Implementation. New York: St. Martin's.

Neupane et. al, (2012). Role of public e-procurement technology to reduce corruption in government procurement.

Nuwagaba, A. (2009). Corruption is caused by lack of effective sanctions.

Ogot, M., Nyandemo, S., Kenduiwo, J. Mokaya, J., & Iraki, W. (2009). The long term Policy Framework for public procurement in Kenya.

Ogubala, A. R. & Kiarie, M.D. (2014). "Factors affecting procurement planning in county governments in Kenya; A case study of Nairobi City County". International Journal of Economics, Commerce &management. Vol. II, No. 11

Oluka, P. N., & Basheka, B., (2014). Determinants and Constraints to effective Procurement Contract Management in Uganda: A Practitioner's Perspective, International journal of logistics systems and management, Vol. 17.

Otieno (2004). Procurement activities in Public institutions. Jomo Kenyatta University of Science and Technology, Kenya.

Pandey, LM (2005). *Financial management* 7th edition. Vikas Publishing House.

Pandey, LM (2009). *Financial management* 3rd edition. Vikas Publishing House PVT Ltd, New Sethi, India

Pearson J.M and EIIram, L.M (2005). Supplier selection and evaluation in small versus large electronics firms. Journal of small businesses management, Vol 33.

Peter Bailey (2009); Purchasing Principles and Management, 9th Edition.

Peter W. Obanda. (2010). Fighting corruption in tactical procurement.
Prahinski C. and Benton W. C. (2004). Supplier evaluations: communication strategies to improve supplier performance.

Public Procurement and Disposal of Public Assets Act (2003).

Public Procurement and Disposal of Public Assets Guideline (2014).

Public Procurement and Disposal of Public Assets Regulations (2014).

Public Procurement and Disposal of public Assets Authority [PPDA] (2008), Public procurement symposium and Exhibition, 19th – 20th September.

Public procurement reforms: Issues and challenges: The case of Uganda (2013).

Ratanya, E. K. (2013). E-procurement implementation and supply chain integration among large scale manufacturing firms in Nairobi, Kenya. *University of Nairobi unpublished MBA project*.

Robert S. Kaplan and David P. Norton, (1996). Transforming the balanced scoreboard from performance measurement to strategic management.

Robert V., Krejcie and Daryle Morgan, (1970). Determining sample size for research activities.

Robson, P.J.A and Bennett, R.J. (2005). The adviser-sme client relationship: impact satisfaction and commitment, Small Business Economics.

Robson, P.J.A (2006). The sampling issues in qualitative research.

Rwothungeyo, B., (2012) Uganda: Poor Contract Management Affecting Service Delivery, New Vision Article, 20th December, 2012.

Sabiiti, C.K., and Muhumuza, E., (2012). Second Generation Procurement, Moving from Compliance to Results in Public Procurement: Trends, Challenges & Opportunities from the Uganda Experience.

Salam, Mohammed A. 2011. Innovative methods for supplier evaluation and selection.

Samuel, Kibiegon Lowasikou. (2016). The effects of supplier selection practices on service delivery n West Pokot county Government.

Sarka, A. and Mohapatra, P.K.J. 2006. Evaluation of supplier capability and performance: A method for supply base reduction. Journal of purchasing and supply management.

Saunders, M., (2003). International markets and the purchasing function, Proceedings of th fifth ISPERA conference, Eindhoven.

Sekaran, U., (2003). Research methods for Business A skill-building approach.

Shah, A. (2006). Public sector governance and accountability series. Local governance in developing countries.

Shleifer, A and Vishny, R., (1993). Corruption. The quarterly journal of Economics.

Simpson, P.M., Siguaw, J.A. and White, S.C. (2002), "Measuring the performance of suppliers: an analysis of evaluation processes", Journal of Supply Chain Management.

Simpson et al., (2002). Supplier selection in small and medium sized firms: The case of the U.S. textile and apparel industry.

Stormy, F. (February, 2005). Avoiding culture clash when selecting providers of outsourced services. Building Operating Management.

Tan (2002). Supplier selection and Assessment: Their impact on Business performance.

Tahriri, F., Osman, M. R., Ali, A., & Mohd, R., (2008), "A review of supplier selection methods in manufacturing industries", Suranaree Journal of Science and Technology, Vol.15.

Telgen J, Andrea P, Harland C, Lynch J and Tunde T., (2005). A framework for collaborative public procurement (CPP): Developed from an international survey.

Thabane, M. (2014). Factors that influence the time performance of the procurement process of Public Private Partnership projects in South Africa from Request for Qualifications (RFQ) to Financial Close.

The 3rd National Integrity Survey (2006). Inspectorate of Government- Final report.

Tran V, et. al (2013). Silver nanoparticles: synthesis, properties, toxicology.

Trent R.J., Monczka, R.M (2005), Purchasing and Supply Chain Management (3rd edition), USA.

United Nations Organisation Program (UNOPS) Procurement manuals 2010.

Uttam, K., & Roos, C. L. L. (2015). Competitive dialogue procedure for sustainable public procurement. *Journal of Cleaner Production*, *86*.

Van Weele (2006). Value creation and supply risk reduction in purchasing: Effects of purchasing involvement and a proactive market orientation.

Van Weele (2009). Purchasing and supply chain management: Analysis, strategy, planning and practice.

Violet, A. Odhiambo. (2015). Supplier selection practices and procurement performance in Nairobi City Council.

Voordijk, H. (2015). Perceptions of success in performance-based procurement. *Construction Innovation*, *15*(1).

Wagner et al., Janet, Richard Ettenson, and Jean Parrish (1989), "Vendor Selection among Retail Buyers: An Analysis by Merchandise Division".

Warapon. T, Kamonchanok. S and Pongsa. P (2012). The impact of supplier development on supplier performance: The role of Buyer-supplier commitment, Thailand.

Weber, C. A., Current, J. R., & Benton, W. C. (1993). Vendor selection criteria and methods. European Journal of Operational Research.

Wilson, J. E. (1994). The relative importance of Supplier selection criteria.

Yin Robert. K., (2009). Case study research: Design and methods.

Yin Robert. K. (2012). Application of case study research.

Youssef, M.A., Zairi, M. and Mohanty, B. (1996), "Supplier Selection in an Advanced Manufacturing Technology Environment: An Optimization Model", International Journal of Benchmarking for Quality Management and Technology.

Zenz G., 1981. Purchasing and the management of materials.

APPENDIX I: LETTER OF REQUEST FOR QUESTIONNAIRE SESSION.
KYAMBOGO UNIVERSITY
SCHOOL OF MANAGEMENT AND ENTREPREENUERSHIP

Dear Sir/Madam;

This research questionnaire aims at collecting information regarding —**Supplier selection and Supplier performance in Uganda Wildlife Authority."**

These questions are presented to you by a research candidate of Kyambogo University, who is conducting a research as part of his partial fulfilment of the requirement for the award of Master of Science Degree in Supply Chain Management (MscSCM).

Being one of the people that is employed by Uganda Wildlife Authority, information from your practical experience about Supplier selection is very important in making this study a success. I kindly request you to spend few minutes responding freely to the questions based on your knowledge. The information gathered will be used solely for study purpose and not otherwise.

Your assistance in this endeavor will be appreciated.

Yours Faithfully,

KAWADDWA SHEEM

MscSCM Candidate.

APPENDIX II: QUESTIONNAIRE

SECTION A: Background of Respondent

1. Gender

a) Female ☐   b) Male ☐

2. Age bracket

a) 20 – 25 ☐   b) 26 – 30 ☐

c) 31– 35 ☐   d) 36-40 ☐

e) 41 & above ☐

3. Educational background

a) Diploma ☐   b) Bachelor's Degree ☐   c) Master's Degree ☐

d) Any other please specify…………………………..

4. Position held at Uganda Wildlife Authority

a)	Senior management level
b)	Middle management level
c)	Lower management level
d)	Non-managerial staff
e)	Other please specify

5. How long have you been working in Uganda Wildlife Authority?

a) Less than 1 year ☐

b) 1 – 3 years ☐

c) 4 – 6 years ☐

d) > 6 years ☐

Section B: The relationship between Problem identification and Supplier Performance in Uganda Wildlife Authority.

This section is seeking your opinion about the relationship between problem identification and supplier performance in Uganda Wildlife Authority. Respondents are asked to indicate the extent to which they agreed or disagreed with each statement using a 5 Likert scale ((1) = strongly disagree; (2) = disagree; (3) = neutral; (4) = agree and (5) = strongly agree) response framework. Please tick one number per line to indicate the extent to which you agree or disagree with the following statements.

6. To what extent do you agree with the following statements regarding the relationship between Problem identification and supplier performance in Uganda Wildlife Authority?

N/S	Statement	1	2	3	4	5
a)	Before a product is procured at Uganda Wildlife Authority, the user department meets to identify the problem (need).					
b)	During problem identification at Uganda Wildlife Authority, the user department makes consultation from technical personnel.					
c)	Before procuring products at Uganda Wildlife Authority, the nature (type and size) of the product to be procured is put into consideration.					
d)	During problem identification at Uganda Wildlife Authority, the user department liaises with the Procurement and Disposal Unit for procurement counsel.					
e)	Whilst carrying out problem identification at Uganda Wildlife Authority, the user department carries out market survey to seek more knowledge and expertise.					
f)	Whilst carrying out problem identification at Uganda Wildlife Authority, the PDU and user department put into account collection of feedback from the consumers of similar products in the organisation.					
g)	Whilst carrying out problem identification at Uganda Wildlife Authority, the PDU and user department put into account the aspect of economies of scale.					
h)	Problem identification during supplier selection within Uganda Wildlife Authority determines timely deliveries.					

i)	Problem identification in Uganda Wildlife Authority reduces costs in the organisation.
j)	Problem identification determines the quality of the end products delivered at Uganda Wildlife Authority.

Any other, specify……………………………………………………………………………..

Section C: The relationship between Criteria formulation and Supplier Performance in Uganda Wildlife Authority.

This section is seeking your opinion about the relationship between criteria formulation and supplier performance in Uganda Wildlife Authority. Respondents are asked to indicate the extent to which they agreed or disagreed with each statement using a 5 Likert scale ((1) = strongly disagree; (2) = disagree; (3) = neutral; (4) = agree and (5) = strongly agree) response framework. Please tick one number per line to indicate the extent to which you agree or disagree with the following statements.

6. To what extent do you agree with the following statements regarding the relationship between criteria formulation and supplier performance in Uganda Wildlife Authority?

N/S	Statement	1	2	3	4	5
a)	Before bid invitation at Uganda Wildlife Authority, the PDU develops the sourcing strategy for the procurement.					
b)	Before a product is procured at Uganda Wildlife Authority, the user department harmonizes with the PDU on what criteria to administer.					
c)	Before bid invitation at Uganda Wildlife Authority, the relationship between the nature (type and size) of the product and the sourcing strategy is weighed.					
d)	During criteria formulation at Uganda Wildlife Authority, the risk assessment feature is also put into consideration.					
e)	During criteria formulation at Uganda Wildlife Authority, the user department and PDU consider having an exit strategy for the procurement.					
f)	During criteria formulation at Uganda Wildlife Authority, the user					

department and PDU consider the design capabilities of vendors.

g)   During criteria formulation at Uganda Wildlife Authority, the user department and PDU consider the flexibility of vendors.

h)   During criteria formulation at Uganda Wildlife Authority, the user department and PDU look at triumphing the sustainability aspects (social, economic and environment).

i)   Criteria formulation determines timely deliveries in Uganda Wildlife Authority.

j)   Criteria formulation leads to reduced costs in Uganda Wildlife Authority

k)   Criteria formulation determines the quality of the end products delivered at Uganda Wildlife Authority.

Any other, specify……………………………………………………………………………..

Section D: The relationship between supplier qualification and Supplier Performance in Uganda Wildlife Authority.

This section is seeking your opinion regarding the relationship between supplier qualification and supplier performance in Uganda Wildlife Authority. Respondents are asked to indicate the extent to which they agreed or disagreed with each statement using a 5 Likert scale [(1) = strongly disagree; (2) = disagree; (3) = neutral; (4) = agree and (5) = strongly agree] response framework. Please tick one number per line to indicate the extent to which you agree or disagree with the following statements.

7. To what extent do you agree with the following statements regarding the relationship between supplier qualification and supplier performance of Uganda Wildlife Authority?

N/S	Statement	1	2	3	4	5
a)	Before bid invitation at Uganda Wildlife Authority, a market survey is carried out.					
b)	During supplier qualification in Uganda Wildlife Authority, a shortlist of potential vendors is made.					
c)	Before bid invitation at Uganda Wildlife Authority, the historical data regarding suppliers is assessed.					

d)	Before entering into a contract at Uganda Wildlife Authority, due diligence on the qualified suppliers is carried out.				
e)	During supplier qualification at Uganda Wildlife Authority, the technical and financial capacity and capabilities of the vendors are weighed.				
f)	Supplier qualification carried out at Uganda Wildlife Authority determines innovations within the organisation?				
g)	Qualified suppliers plays a critical role on the quality of the end product delivered at Uganda Wildlife Authority				
h)	Qualification of suppliers ultimately determines timely deliveries in Uganda Wildlife Authority.				
i)	Supplier qualification leads to reduced costs in Uganda Wildlife Authority.				

Any other, specify……………………………………………………………………………

Section E: Supplier Performance in Uganda Wildlife Authority.

This section is seeking your opinion regarding the extent to which Supplier performance in terms of Quality, Timeliness and Cost have been attained in Uganda Wildlife Authority. Respondents are asked to indicate the extent to which they agreed or disagreed with each statement using a 5 Likert scale [(1) = strongly disagree; (2) = disagree; (3) = neutral; (4) = agree and (5) = strongly agree] response framework.

Please tick one number per line to indicate the extent to which you agree or disagree with the following statements.

N/S	Quality, Timeliness and Cost	1	2	3	4	5
a)	Supplier selection has helped to improve the quality of the end products delivered to Uganda Wildlife Authority.					
b)	Supplier selection has helped to reduce the overall time taken to deliver services and products to Uganda Wildlife Authority.					
c)	Supplier selection has enabled the number of complete deliveries to be made on time in Uganda Wildlife Authority.					
d)	Supplier selection has resulted into reduced lead time in Uganda					

Wildlife Authority.

e)   Supplier selection has aimed at responding to needs of Uganda Wildlife Authority on time.

f)   Supplier selection has helped to reduce on the costs of the products delivered to Uganda Wildlife Authority.

Any other, specify……………………………………………………………………………

End

Thank you for your participation

Dear Sir/Madam,

I am Kawaddwa Sheem conducting a study on "**Supplier selection and supplier performance in Uganda Wildlife Authority"** as a partial fulfillment of the requirement for award of a Masters of Science in supply chain management of Kyambogo University. The information given will be treated with maximum sincerity and for academic purposes only. Your contribution will be highly appreciated. Therefore, you are required to answer the following questions:

Introduction questions

- For how long have you worked in Uganda Wildlife Authority?

- Which department are you from?

- Can you tell me something about how supplier selection is carried out in Uganda Wildlife Authority?

- How does the supplier selection processes affect supplier performance in Uganda Wildlife Authority?

Problem identification

- How is problem identification carried out in UWA?

- What do you think is the relationship between problem identification and supplier performance in UWA?

- What are the challenges faced during problem identification in Uganda Wildlife Authority?

- What are some of the mitigation strategies for the above challenges that can be adopted in Uganda Wildlife Authority?

Criteria Formulation

- How is criteria formulation carried out in UWA?

- What do you think is the relationship between criteria formulation and supplier performance in UWA?

- What are the challenges faced during criteria formulation in Uganda Wildlife Authority?

- What are some of the mitigation strategies for the above challenges that can be adopted in Uganda Wildlife Authority?

Supplier Qualification

- How is supplier qualification carried out in UWA?
- What do you think is the relationship between supplier qualification and supplier performance in UWA?
- What are the challenges faced during supplier qualification in Uganda Wildlife Authority?
- What are some of the mitigation strategies for the above challenges that can be adopted in Uganda Wildlife Authority?

End

Thank you for your Participation

APPENDIX IV: TABLE FOR SAMPLE SIZE DETERMINATION

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Krejcie, Robert V., Morgan, Daryle W., **"*Determining sample size for research Activities*",** Educational and psychological Measurement, 1970