

**EFFECTIVENESS OF E-PROCUREMENT IN ADDRESSING  
TRADITIONAL PROCUREMENT CHALLENGES IN WORKS  
PROCUREMENT.**

**(THE CLIENTS' PERSPECTIVE)**

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**MSc. (Construction Economics and Management) Dissertation  
Ardhi University  
November, 2022**

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THE TRADITIONAL PROCUREMENT CHALLENGES IN  
WORKS PROCUREMENT  
(THE CLIENTS' PERSPECTIVE)**

**By**

**Mwajande, Evodia G.**

**A dissertation Submitted in (Partial) Fulfilment of the Requirements for the  
Degree of Masters of Science in Construction Economics and Management of  
Ardhi University**

**Ardhi University**

**November, 2022**

**CERTIFICATION**

The undersigned certifies that she has read and hereby recommends for examination a dissertation titled, **“Effectiveness of e-procurement in addressing traditional procurement challenges in work procurement. (Clients’ perspective).”** In fulfillment of the requirements for degree of Masters of Science in Construction Economics and Management, of Ardhi University.

.....

Dr. Rehema Monko

(Dissertation Supervisor)

Date .....

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I, **Mwaijande, Evodia G** hereby declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

Signature .....

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## DEDICATION

To my dear mother; Editha Malya

I have learned that, “The best love is the one that makes you a better person without changing you into someone other than yourself.” I’ve learned that certain things remain broken, and that you can go through hard times and strive for better ones as long as you surround yourself with individuals who bring out the best in you. I have learned to stay strong, focused and being a young lady with a big heart.

*Thanks for being my hope, and bringing out the best in me.*

## ABSTRACT

Fast growth of internet and innovation brought about diffusion in the 1990s of the e-procurement systems and popularity gain in 2000s which is progressively replacing the manual procurement process. Tanzania currently applies the new system of procurement as a requirement that all government entities should adopt due to the reviewed weaknesses like low achievement of value for money and spend analysis challenge in the traditional system of procurement. This calls to the attention on works procurement given the complexity nature of the activities and Tanzania being a developing nation. The study therefore investigated the effectiveness of e-procurement in addressing the traditional procurement challenges in works procurement focusing on the clients' perspectives. A survey research design was adopted. The study derived data from questionnaires and interviews, involving 21 questionnaire respondents and 5 semi structured interviews both done with heads of Procurement Management Units (PMUs). Content analysis was used to analyze interview questions while SPSS (20) was used in analyzing questionnaire responses. Findings indicate the level of implementation of e-procurement in works procurement is high with a total average mean score of 4.02. Uploading of tender document online, online submission and e-advertisement for e-tendering are the highest ranked applied procedures while approval notification of award and signing of contract along with online tender opening are the lowest ranked applied procedures. Results show that the system has effectively addressed the challenges in the traditional system of procurement with an average mean score of 4.20 in which the most addressed challenges were spend analysis, fraud and corruption in tendering stage, and fraud and corruption in post award phase. The least addressed challenges being fraud and corruption in pre-tendering stage and time consuming. However, the study recommends use of stable internet and electricity and stability of TANEPs by the system administrators. The study concludes that the challenges in the traditional system are highly addressed in the electronic system therefore being more effective in comparison to the traditional system, but needs some improvement with the internet stability. Also, stability with the system itself (TANEPs) and frequent trainings to the users of the system.

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**LIST OF ABBREVIATIONS**

A.V.M	Average Mean Score
ARU	Ardhi University
CAP	Capitulus (Chapter)
E	Electronic
EPP	Electronic Public Procurement
ERP	Enterprise Resource Planning
F	Frequent
GN	Government Notice
M.S	Mean Score
NHC	National Housing Corporation
No.	Number
NSCD	National Service Construction Department
P.E	Procuring Entity
PPRA	Public Procurement Regulatory Authority
R	Rare
S/N	Serial Number
SPSS	Statistical Package for the Social Sciences
TANEPS	Tanzania National Electronic Procurement System
TANROADS	Tanzania National Roads Agency
TBA	Tanzania Buildings Agency
V.R	Very Rare
VF	Very Frequent

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the study

E-procurement has been characterized as the child of internet age (Ageshin, 2011), that is, it has evolved from the economy that is primarily based on information technology, where by work has been made easy in a technological way going further to public and corporate purchasing practices. Fast growth of internet and innovation brought about diffusion of the e-procurement system in the 1990s and popularity gain in the year 2000s (Puschmann & Alt, 2015), which is progressively replacing the manual procurement process.

Kholi, (2012) defines e-Procurement as “conducting on the internet the equivalent of the manual tendering process, with the ostensible objective of enhancing transparency and efficiency of public procurement”. E-procurement system has proven to be a useful tool for implementing procurement reforms and creating a completely transparent and open procurement environment by public entities. According to DESA (2011) currently, many organizations have used e-procurement to promote transparency and good governance in procurement for both developed and developing countries.

Low achievement in the value for money, time consumption, and data management problem are some of the challenges that were faced in the traditional system of procurement Ahimbisibwe (2016). Facts such as significant improvements in transparency and traceability of all transactions have also proven the business case for using an e-procurement system and effectiveness in preventing fraud and corruption in countries that have adopted the e-procurement system. Public entities in Tanzania use e-procurement system platform known as Tanzania National E-Procurement System (TANEPS) as per government requirement to implement procurement activities. The public procurement through e-procurement system is supervised and monitored under the Public Procurement Regulatory Authority (PPRA) which is a regulatory body established under the public procurement Act CAP 410 (Public Procurement Act No.7 of 2011 as amended in 2016 and Regulations GN. No. 446 of 2013 as amended in 2016. Regulations 105 (2) (a) of GN. No. 446 of 2013 states that the regulations apply to all procurement of goods, works and non-consultancy services undertaken by a

procuring entity. This sub-regulation calls to the attention of this study on effectiveness of e-procurement in addressing the traditional procurement challenges in works procurement.

Relevant recent studies such as Mrisho (2010), have pointed out on the readiness for adoption of e-procurement in the Tanzanian construction industry and the associated challenges for the adoption, such as human resources capabilities in handling the system. Not only on the adoption of the system but recent relevant studies like (Kayugi, 2013) has also identified weaknesses of the manual system in various stages of works procurement, including on tender evaluation and award.

Kayugi (2013), went further to proposing a model of input factors, implementation factors and output factors of e-procurement by which the input factors were policies and framework, implementation factors as people, infrastructure, modelling, adoption and management leading to an output of efficiency and transparency of the procurement process. Mose & Magutu (2013), have pointed out the challenges of e-procurement including resistance to change by users, lack of e-procurement implementation capacity by small suppliers, and adaptation costs. Makoba, et al (2017) points out that a majority of studies in the area of e-procurement have focused on implementation, adoption, challenges and prospects.

According to the Public Procurement Act of 2011 All activities relating to the construction, reconstruction, destruction, repair, or renovation of a building, structure, road, or airfield are referred to as "works." Works includes site preparation, excavations, erection, building, equipment or material installation, decoration, and finishing as some of all kinds of civil works. Works also includes service which is tendered and contracted on the base of performance of a quantifiable physical output such as drilling, mapping satellite, and photography or seismic investigations. Public procurement currently in Tanzania has a web-based platform under Public Procurement Regulatory Authority (PPRA) that is created in compliance with the public procurement standards as per the public procurement laws part XI in line with Regulation 343 of Government Notice No. 446.

The web-based platform Tanzania National e-Procurement System (TANeps) has been developed to facilitate public procurement processes in Tanzania in accordance with the use of guidelines issued on the use of the system. Currently the government under TANeps has conducted trainings and still is conducting the trainings to the procuring entities to ensure

effectiveness in the use of the system by various entities inclusive of the procuring entities in the construction industry.

The extant literature is mostly based on the adoption of the e-procurement system, implementation of the new system such as proposing a model for implementation factors and output of e-procurement. Not much has been done on assessing the effectiveness of the e-procurement in addressing the traditional works procurement challenges. This research study goes further into assessing effectiveness of e-procurement in addressing the traditional procurement challenges in works procurement.

## **1.2 Problem Statement.**

The former manual system of procurement in Tanzania faced low achievement of value for money, fraud and corruption, data management problem and other weaknesses in its procedures that went further to affecting works procurement specifically in the construction industry. Therefore, the government reviewed the irregularities in the traditional system of procurement and a requirement was made that all government entities adopt the electronic procurement. The nature and complexity of activities in the construction industry has been simplified in this new electronic system, but to what extent is the e-procurement effective in addressing the traditional procurement challenges in works procurement remains inadequately explored question. This study explores on effectiveness of the new system of e-procurement in addressing the traditional procurement challenges in works procurement.

## **1.3 Objectives.**

### **1.3.1 Main objective.**

To evaluate the effectiveness of e-procurement in addressing the traditional procurement challenges in works procurement.

### **1.3.2 Specific Objectives.**

- i. To examine the current level of e-procurement implementation as per government requirements.
- ii. To establish the level at which e-procurement has addressed the challenges of the traditional procurement in works procurement.
- iii. To provide recommendations for effective e-procurement in works procurement.



#### **1.4 Research Questions.**

- i. What is the current level of e-procurement implementation as per government requirement?
- ii. To what extent has e-procurement addressed the challenges of traditional procurement in works procurement?
- iii. What is needed to be done to fully address the irregularities of the traditional procurement in works procurement to make e-procurement more effective?

#### **1.5 Significance of the Study.**

The findings of this research have given a clear picture of the extent that e-procurement system has brought effectiveness in operations of public procurement in works procurement as compared to the traditional procurement. The study has shown how the electronic system has addressed the irregularities in the traditional procurement such as achievement of value for money in public procurement and a clear picture and records of spend analysis. It has also given enriched knowledge on the existing irregularities in the new system and recommendations for effective electronic system of procurement with reference to the existing challenges like instability of TANEPs. The findings in this study will not only benefit works procurement but also act as a basis for further studies in strengthening the system.

#### **1.6 Scope of the study.**

##### **1.6.1 Subject scope.**

The study focused on works procurement specifically on construction works, and aimed at attaining the target population that would give the right information in accomplishment of the study. Basing on the objectives, specific objectives have precisely focused on the Government procuring entities that implement public construction projects.

##### **1.6.2 Geographical scope.**

The study is based on the government procuring entities in Dar es Salaam, target population being Government procuring entities in Dar es Salaam that implement public construction projects. The selection of the region is due to the fact that large construction undertakings are to a large extent operated, also the presence of many stakeholders relevant to the study, time

and resources for the research not being enough to collect data from government entities in other regions.

### 1.6.3 Time scope

Time scope for this study was as per the Ardhi university requirement for dissertation of post graduate program.

## **1.7 Expected Outcome**

The expected outcome of this research study is a strengthened system of e-procurement in works procurement through the identified existing challenges of the system and recommendations on how to make the system effective.

## **1.8 Organization of dissertation**

### 1.8.1 Chapter 1: Introduction

This chapter provides for the background of the study that helped the researcher to come up with the research issue on effectiveness of e-procurement in addressing the traditional procurement challenges in works procurement (The clients' perspectives). It also provides for the statement of the problem, research objectives, research questions and scope of the study.

### 1.8.2 Chapter 2: Literature review

This chapter provides for literature review on procurement in Tanzania, traditional procurement procedures, traditional procurement challenges, electronic procurement process and drivers, electronic procurement worldwide, advantages and challenges of the electronic system of procurement.

### 1.8.3 Chapter 3: Research methodology

The survey research design is exhaustively presented, sampling technique and sample size of the study, as well as data collection methods (questionnaire and interview).

### 1.8.4 Chapter 4: Analysis

This chapter provides for response rate, population characteristics, experience of the respondents, analysis of the interview, objective 2 and 3 exhausted analysis and findings.

### 1.8.5 Chapter 5: Conclusion and recommendations

This chapter provides for conclusion from the analyzed data with reference to the objectives in chapter 1. It also gives recommendations to the research as per objective number three that was well exhausted from the analysis of interviews and questionnaire responses.

### **1.9 Summary of the chapter**

This chapter provides for the background of the study that helped the researcher to come up with the research issue on effectiveness of e-procurement in addressing the traditional procurement challenges in works procurement (The clients' perspectives). The next chapter introduces literature review and conceptual framework of the study.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

This chapter reviews the literature that is in relation to the study and what has been issued on a topic by other intellectuals and researchers. Literature review aims at synthesizing sources, to highlight patterns, themes, encounters and gaps and to show the state of current knowledge in relation to the essential research question or hypothesis (McCombes, 2019). Ideas of various researchers have been summarized for extensive coverage of relevant information to this study.

#### 2.2 Definition of Key Terms

##### 2.2.1 Procurement

According to Kidd (2015), procurement is a management role in the corporate world that confirms the identification, locating, accessing and administration of the external sources that an organization needs in fulfilling its planned objectives.

Procurement has also been defined as the function responsible for the purchase, lease or other legal means of acquiring required goods (equipment, materials, consumables), services (individual consultants, consultancy firms, coaching, workshop), and works (construction, repairs, rehabilitation), when it comes to meeting specific needs in the correct amounts and at the right price (Sumbana, 2014).

Procurement refers to a procuring entity's buying, purchasing, renting, leasing, or otherwise acquiring any goods, works, or services, and includes all functions related to obtaining any goods, works, or services, also including identifying needs, deciding and inviting tenderers, preparing and awarding contracts (PPA, 2011).

##### 2.2.2 E-Procurement

E - Procurement refers to the use of internet-based (amalgamated) information and communication technologies (ICTs) to perform one or more stages of the procurement process including identification, sourcing, negotiating, ordering, receiving, and reviewing products after they've been purchased. (Croom & Brandon, 2014).

According to Tatsis et al., (2012), e-procurement is the use of electronic tools, technologies, and web-based applications to integrate, manage, automate, optimize, and support an organization's procurement process.

### 2.2.3 Traditional system of procurement

Traditional procurement system is an offline procurement system where all procurement proceedings are handled manually (Tatsis, et al., 2012). Traditional procurement is a manual function of procurement which depends heavily on excel sheets, paper works, as well as phone calls and in-person dialogues (GEP, 2019).

### 2.2.4 Effectiveness

According to Harvey, (2014) effectiveness is the extent or reach to which an activity fulfills its intended function or purpose. Effectiveness has also been defined as the measure between stated goals and their accomplishments (Fraser, 2014). It is the degree to which certain targeted objectives are met.

### 2.2.5 Construction Industry

The construction industry is a sector that transforms raw materials into physical, economic, and social infrastructure that is required for socioeconomic progress (Ministry of Works, 2003). It refers to the process of planning, designing, building, or constructing physical infrastructure, as well as modifying, repairing, maintaining, and demolishing (*ibid*).

## **2.3 Procurement in Tanzania**

Initially, in 1996 the World Bank prepared a Country Procurement Assessment report (CPAR) which involved a number of serious faults identified in the Tanzania public procurement system, and recommended urgent reform. The PPA 2001 (Public Procurement Act 2001) enactment included some of the findings from the report which merged and for the first time, all procurement legislation was reviewed, with the goal of bringing the legal structure up to worldwide standards.

Later according to the World Bank (2003), CPAR (Country Procurement Assessment Report) The report, which was updated in 1996, identified a number of additional areas to improve, some of which would demand major reform to address in precise, the areas where the 1996 CPAR report had not been fully implemented by the 2001 legislation. The areas not fully

implemented were such as capacity or lack of appropriately skilled personnel for a sound procurement practice and improved accountability for procurement decisions at procuring entity level.

Public procurement in Tanzania is under the authority PPRA (Public Procurement Regulatory Authority), The Act No. 7 of 2011 established a regulatory body. The authority has regulatory powers and is responsible for overseeing all public procurement activities carried out by all public bodies in Tanzania's mainland. The PPRA's goal is to ensure that procurement policies and practices are fair, competitive, transparent, non-discriminatory, and cost-effective. Its other goals include establishing standards for Tanzania's public procurement processes, monitoring procuring entities' compliance, and forming collaboration with the Public Procurement Policy Division (PPPD) and other relevant professional organizations in the country. At the same time, the Ministry of Finance is responsible for drafting legislative proposals amending the public procurement legal framework.

The public procurement law in Tanzania applies to any government ministry, department, or agency, as well as any corporate or statutory entity or authority established by the government. State-owned businesses and local governments are also covered by public procurement law (Public Procurement Act, 2001). Tanzania's public procurement system is decentralized, which means that all bodies covered by the law perform public procurement activities on their own using the country's resources. The framework agreements also allow for centralized procurement.

Public procurement currently in Tanzania has a web-based platform under Public Procurement Regulatory Authority (PPRA) that is established in accordance with the requirements of the public procurement laws part XI in line with Regulation 343 of Government Notice No. 446. Public Procurement Regulations of 2013, sect. 342 (1) states that all procuring entities shall implement procurement proceedings by the electronic procurement in full or partially equivalent with the conventional manual procedures. Therefore, despite having an electronic public procurement system, Tanzania has a dual system that gives equal importance on the manual (paper-based procedure) and electronic procedures. The web-based platform, Tanzania National e-Procurement System (TANEPs)

has been developed to simplify public procurement processes in Tanzania in compliance to the use of guidelines issued on the use of the system.

## **2.4 Traditional Procurement**

Manual procurement system or the non-modern way of procurement (traditional procurement) is an offline procurement system in which all procurement proceedings are handled manually (Tatsis, et al., 2012). Traditional procurement is a manual function of procurement which depends heavily on excel sheets, paper works, as well as phone calls and in-person dialogues. The procurement cycle's steps are referred to as the procurement process which includes planning, procedure selection, measures to elicit tenderer offers, investigation and evaluation of those offers, contract award, and contract administration (PPA 2011). Procurement procedure begins with promoter's or client description of requirements, followed by the invitation to tender which is done by the client identifying potential suppliers or bidders through pre-qualification and inviting them to submit bids. After the bidding phase, evaluation of the proposals is done and the successful bidder is chosen then finally a public declaration of the competitors' names with their bid prices together with the successful bidder is done.

According to Wiklund (2018), procurement encompasses the entire process from defining the need for goods and services to allocating suppliers. Tendering is limited to the process of going to the external market with your demand description of requirements in order to collect, analyze, and nominate bids, whereas these activities can include the process of developing a process, collecting bids, selecting vendors, negotiating contracts, and more. Procurement is carried out by the process of tendering rather than buying directly from the supplier, which explains manual process of procurement in tendering process.

### **2.4.1 Traditional procurement procedures**

According to OLAF (2013), the manual procurement procedure or in other words the public procurement cycle is into three phases which are;

- i. Pre-tendering phase
- ii. Tendering phase
- iii. Post tendering phase

## I. Pre-tendering phase

Pre-tendering phase is the period or phase in public procurement cycle which comes before tendering phase. It involves needs assessment, planning and budgeting, definition of requirements and choice of procedures. In the needs assessment a review is made on the reason for procuring certain goods, works or services in a particular user department under an organization. The public organization decides whether the planned new purchase is essential or if it may be substituted by improving existing resources in that particular organization. In the entire decision-making process documentation is done and transparency is ensured through the use of independent validation of the process. It is also reasonable and recommended to discuss the procurement's beneficiary or end-user, for example, through a public utility evaluation (OLAF, 2013). After the needs assessment is favorable and the decision to proceed with the procurement is made, planning and budgeting are also done during the pre-tendering stage. As a result, government agencies carefully calculate the costs of the goods, services, or works to be obtained which could be done with reference to the basis of past procurements of the like works projects, services or goods. Cost estimates are made realistic and in a way that they take into account possible variations of the contract over time.

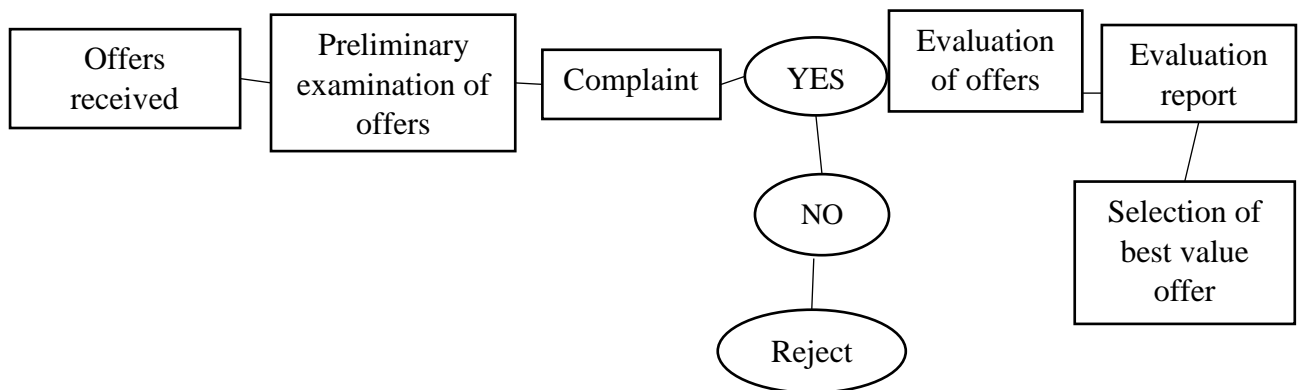
Public authorities are responsible for defining requirements, ensuring that they are established on a needs assessment, structured to minimize favoritism, and built in connection to functional performance. This is accomplished by establishing a set of regulations for avoiding conflicts of interest, collusion, and encouraging integrity, which is a necessary requirement for a transparent public procurement process (MOF, 2013). Choice of procedures follows after definition of requirements whereby the procuring entity's procurement procedure should always provide maximum feasible competition. As a result, the open approach is frequently used as the default procedure in procurement legislation. Aside from the procedure type, the tender documentation, time limits, contractor and technical qualifications and specifications, as well as selection and award criteria, are all expressed in a clear, broad, and unbiased manner.



## II. Tendering phase.

Tendering phase is the second phase in the procurement cycle, which comes before the post tendering phase and involves invitation to tender, evaluation and award of contract. Invitation to tender involves publishing a public notice by a procuring entity of its intention to procure goods, works or services. This is done in order to give room for potential bidders to be made aware of any government contract opportunities. The public notice must include information about the procurement's subject, technical requirements, potential bidders can assess whether the procurement is of competitive interest to them by looking at the selection and award criteria, contract management and deadlines, as well as a contact person for clarification.

Evaluation is another stage in the procurement cycle under the tendering phase where by evaluation of bidders is done without including any extra features than those provided by the invitation to tender notice. Evaluation is done by several evaluation officials preferably a committee and not a single individual.



**Figure 2. 1 Overall evaluation process (OLAF, 2013)**

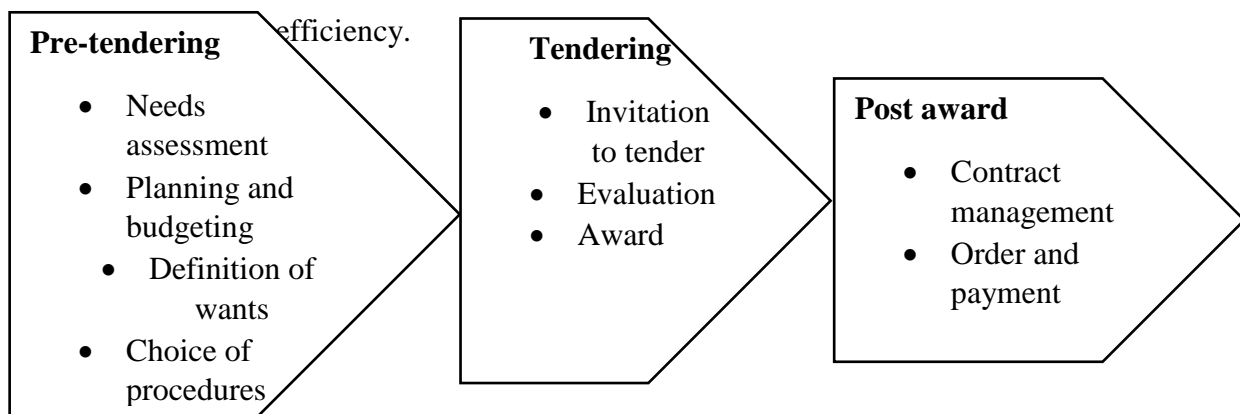
Award is the final stage of the tendering phase which involves announcement of the selected entity of winning bidder. The managing authority in a timely manner discloses with justification of price of the winning offer, name of the applicant, as well as an overview of the top-rated offer's benefits in exclusion of the sensitive commercial data which could favor collusion in future procurements (OLAF, 2013).

## III. Post tendering phase

Post tendering phase is the phase in the public procurement cycle that involves contract management also order and payment. Contract management involves monitoring of the implementation of the contract whereby following the assignment of the contract, a clear management structure is established to describe the precise expectations, roles, and

responsibilities (OLAF, 2013). Contract changes are vulnerable but are manageable by ensuring that contract amendments that alter the price and/or scope of work are supported by a rigorous and objective amendment approval process. Ensuring that contract changes that exceed a cumulative threshold are closely monitored, and allow contract changes only up to an acceptable threshold, as well as adjustments that do not affect the quality of the good or service beyond the threshold.

Order and payment is another phase in the post tendering stage whereby the expected standards of the received products/ services are ensured to be met by public authorities in line with the tender documentation taking into account value for money, accountability,



**Figure 2. 2 The public procurement cycle (OLAF, 2013).**

## 2.5 Traditional Procurement Challenges

Traditional procurement is seen to operate manually by the involvement of many hands, paperwork, and bureaucracy creating a lot of room for error. It is said that oftentimes, errors occur and therefore no one to hold accountable for any aspect of error in the process.

The challenges in the manual system of procurement are highlighted as; Ahimbisibwe (2016).

- i. Low achievement in the value for money.
- ii. Challenge in spend analysis.
- iii. Time consuming.
- iv. High chances of fraud and corruption.
- v. Data management problem due to lots of paper work involved.
- vi. Bureaucracy.
- vii. It is expensive

### 2.5.1 Low achievement of value for money and transparency

Value for money refers to achieving the optimal combination of whole life costs and quality (Ahimbisibwe, 2016). Value for money was traditionally understood as getting the correct quality, quantity, and timing from the right supplier at the right price (Ahimbisibwe, 2016). The entire concept has now been modified to include acquiring higher-quality items or services in more appropriate quantities, just in time when needed, from better suppliers at ever-lower prices (Ahimbisibwe, 2016).

Unless there are other compelling reasons not to, goods and services should be procured through competition in order to achieve value for money in procurement (ADB, 2018). For example, the use of emergency procurement where the communal interest demands. The accounting officer shall assess the requirement for emergency purchase and select the most cost-effective procurement approach, (by decreasing the cost of resources for an activity) and efficiency (by execution of tasks with reasonable effort). This example is according to regulation 63(1) of the public procurement (amendment) Regulations of 2016 whereby despite the method of procurement to be used not being competitive, there has to be a guarantee in economy and efficiency for the achievement in value for money. ADB (2018) continues that in order for value for money to be achieved there has to be;

- i. Maintenance of transparency and integrity throughout the procurement cycle from the pre-tendering phase, tendering phase and post tendering phase.
- ii. The needs of end users and other stake holders are properly identified and accounted for in the purchase process. This is done by making an assessment review of the incentives on what is to be procured and its public utility to the end users.
- iii. A clear statement of the procurement needs and objectives is established including acceptable socioeconomic goals if any (ADB, 2018).
- iv. A procurement modality relative to the risk, value context and strategic importance of the procurement. In other word suitable method of procurement for the purpose.
- v. The technical criteria are sufficiently stated as the cost and non-cost factors that must be examined in order to meet those requirements, including on a life cycle basis if appropriate.
- vi. A contract form that is appropriate for the goals is selected.
- vii. Clear evaluation criteria aligned with the needs and objectives are developed.
- viii. The bidder whose bid best meets the needs and objectives is selected.

- ix. In ensuring a contract implementation is successful, and the contract's deliverables are met and effective contract management plan is developed (Ahimbisibwe, 2016).

2.5.2 The ordinary or manual system of procurement has been blamed to be time consuming. A lot of time is consumed in the process of procurement in the aspect that both buyers and suppliers use a lot of time in getting the process done, therefore the manual procurement system is a challenge. Time consumption is a challenge in the manual system of procurement which is caused by the following attributing factors (Mena, 2018);

- i. Repetitive tasks or processes in the traditional system.  
The manual procurement system involves Internal procurement document approval, negotiation phone calls with suppliers, making several copies of the same document, going to the same approvers throughout the day, depending on their availability, spending minutes on the phone with suppliers, handling errors that are not flexible to fix on paper, and finally having to go through the approval procedure that are repeated for each procurement event (Mena, 2018).
- ii. Process delay.  
More time is consumed due to various departmental dependencies and approvers' or suppliers' delayed responses which may hinder or block urgent requirements for a while. In other words, a bureaucratic way of operation.
- iii. Less visibility on overall process.  
Since many groups such as end users, procurement departments, approvers, finance department and suppliers are involved in the process it leads to loss of control and less visibility on the entire process (Mena, 2018).
- iv. Miscommunication  
Miscommunication on who contacted who and who is responsible for what, which employee is in the contact with which supplier. This entirely leads to loss of information and procurement process disagreement and delays.
- v. Document control.  
Paper procurement process involves a vast effort in controlling the documents and keeping track of the archived records, as older documents are frequently misplaced, and following up current ones becomes harder than it looks like.
- vi. Error handling in the manual procurement process.  
Parties involved in the process, normally in the day to day work can yield some errors. In the manual procurement process the errors are not easily handled which

makes the entire process to start over, or, in the best-case scenario, from the point where the faults were made, which could be anywhere (Ahimbisibwe, 2016).

### 2.5.3 High chances and occurrence of fraud and corruption.

Fraud is defined as the intentional misrepresentation of a matter by word or conduct, or the concealment of information that should have been disclosed, with the intent of causing an entity to rely or act on that inaccurate and misleading information, resulting in damages to the entity relying on that false information (W2A, 2018).

W2A (2018), explains that the manual system lacks a proper check that might be performed on the individuals who are in charge of the procurement procedure. This is due to operation of the process in paper work and lack of transparency in business operations makes it very easy for some wrongdoing to occur. The following are conditions or indicators of fraud and corruption in various phases of the manual system of procurement.

#### A. Pre-tendering stage.

Before contract award is the period which involves different stages of procurement such as assessment, planning and budgeting, definition of requirements, and choice of procedures. In this stage, the following are indicators or conditions for fraud and corruption.

- i. Disqualification of appropriate tenderers. This could be done in favor of another corrupt tenderer for the award of contract to be on their side.
- ii. Short invitation tender list.
- iii. Unchanging list of preferred suppliers, whereby specifications are made to ally in their favor.
- iv. Contracts specifications that do not make commercial sense.
- v. Contracts that include special, but unnecessary specifications that only a specific supplier can meet.
- vi. Personal relations between staff and suppliers (Ahimbisibwe, 2016).

#### B. Tendering stage.

This stage involves invitation to tender, evaluation and award of contract.

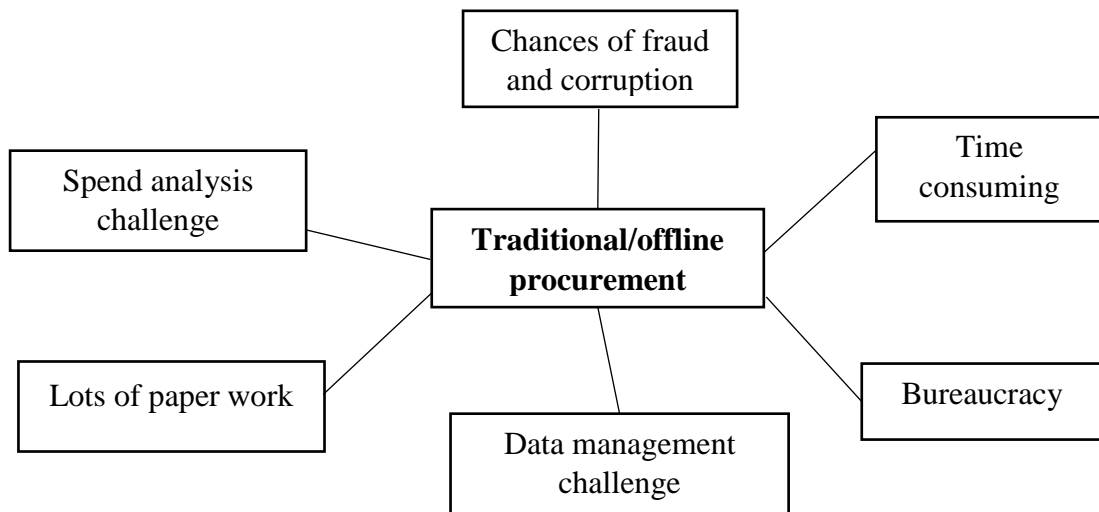
After the pre-tendering stage the following conditions or indicators for fraud occur in the manual system of procurement (OLAF, 2013).

- i. Withdrawal of a lower bidder with no obvious reason and their subsequent sub-contracting to a higher bidder.

- ii. Flexible evaluation criteria.
- iii. Acceptance of delayed bids.
- iv. Alterations in the specification after bids have been opened.
- v. Consistent exact estimates of tender costs.
- vi. Poor recording of the contract award process
- vii. Constant favoring of one firm over others (W2A, 2018).

C. Post award.

- i. Lack of common valid platform among the people involved. The traditional system of procurement lacks a common because everything happens through the medium of numerous people participating in the procurement process, a platform where contracts and their transactions may be recorded and upheld is needed.
- ii. Data management problem due to lots of paper works involved in the process is seen to be a likely cause of occurrence of errors and mistakes as a result of data tampering, loss of records and the like. Data management problem in traditional system of procurement is also seen to make auditing process a challenge. Also according to Murphy (2019), manual procurement process involves a lot of paper work which can be lost or destroyed, also involvement of different hands of individual on the paper work during the process of procurement gives a lot of room for error and misplacement.
- iii. Spend analysis is a challenge in the offline procurement system because every detail is on paper works, therefore becoming tough to effectively grasp a clear picture of all transactions (Ahimbisibwe, 2016).
- iv. Bureaucracy is a common problem most likely in African countries giving room for existence of biasness and favoritism in the process of procurement (Ahimbisibwe, 2016).
- v. Manual procurement process is costly. Procurement process manually operated is costly due to additional costs associated with labor, paper work, and associated stationaries to be used (Murphy, 2019).



**Figure 2. 3 Challenges faced in traditional offline procurement process (W2A, 2018).**

## **2.6 Electronic Procurement**

Electronic procurement is an advanced way of operating procurement proceedings due to the evolvement of technology in information technology especially by the internet. Recently governments use electronic system of procurement in negotiating contracts with suppliers for the purchase of works, materials, and consulting services that are needed by the public sector. It is a system that involves less human interference therefore ensuring compliance with procurement policies and contribution, reducing the opportunities of fraudulent and corruptive practices. The use of electronic system has its way to develop efficiency and transparency by incorporating public trust and political return into a comprehensive procurement reform process can result in increased public trust and political return (OLAF, 2013).

### **2.6.1 E-procurement process**

Ahimbisibwe (2016), tells that procuring entities perform six major functions using electronic approaches. These functions include:

- a. E-ordering: Focus on the using an internet-based software system, drafting and authorizing purchase requisitions, placing orders, and receiving the products and services ordered.

- b. Web-based ERP: Web-based ERP is similar to e-ordering. Only in the case of web-based ERP are the goods and services ordered product-related.
- c. E-sourcing: E-sourcing Using Internet technology beyond spatial boundaries, it is possible to find new suppliers for a certain category of purchasing requirements.
- d. E-tendering: Refers to the process of sending RFI (Request for Information) and RFP (Request for Proposal) using internet technology to communicate with suppliers and receive their responses E-tendering is frequently accompanied by an e-tendering system capable of analyzing the responses received from suppliers.
- e. E-reverse auction: enables the procuring entity to purchase goods and services from a supplier at the lowest price, or a combination of the lowest price and additional terms, using internet technologies.
- f. E-informing: This does not involve transactions, but it does deal with electronically gathering and disseminating purchase data from both internal and external sources (Napoli, 2016).

According to Napoli (2016) e-procurement covers every stage of the purchasing process from the initial identification of a requirement to the tendering process, payment, and finally contract management.

Tanzania public procurement under the Public Procurement Regulatory Authority, has set procedures for conducting e-procurement as stated in the Public Procurement Regulations 2016 Part XI. Table 2.1 shows a summary of the procedures as per the Regulations 347 to 355 of the Tanzania Public Procurement Regulations from the advertisement to approval notification for award and signing of contract.



**Table 2. 1 Procedures for conducting e-procurement.**

Regulation No.	Procedure
347.	E-advertisement for e-tendering <ul style="list-style-type: none"> <li>• PE prepares online invitation for tenders available from secured dashboard.</li> <li>• Invitation to tenders is published in e-PPs portal.</li> <li>• The date of tender notice is published in the e-PPs portal and is treated as the start date of tender preparation.</li> </ul>
348.	Uploading tender document for e-tendering <ul style="list-style-type: none"> <li>• Submission of tenders is done online before deadline before the date indicated in the invitation to tenders.</li> </ul>
349.	Clarification and pre-tender meeting <ul style="list-style-type: none"> <li>• Provision of features for online pretender meetings on the stated date and time.</li> <li>• Posting on request for clarification by tenderers and response to queries before or during pre-tender meetings</li> </ul>
350.	Amendments to tender document <ul style="list-style-type: none"> <li>• Amendment by the PE is done before the deadline for receipt of tenders.</li> <li>• PE issues and publishes an addendum in e-PPs accessible to all prospective tenderers along with short messages to alert tenderers of such changes.</li> </ul>
351.	E-submission <ul style="list-style-type: none"> <li>• Tenders are submitted online and considered to have binding legal effect.</li> <li>• Tenders are received online through the system prior to the closing time.</li> <li>• Tenderers who do not ensure integrity, completeness, authenticity and files containing unreadable tender shall not be considered.</li> </ul>
352.	Online tender opening <ul style="list-style-type: none"> <li>• PE receives the tenders online via e-PPs portal.</li> <li>• Tenderers may be present physically at the tender open meeting with an option of online tender opening meeting.</li> <li>• Online tender opening schedule and precise web for URL for tenderers to partake is specified in invitation to tender.</li> </ul>
353.	Formulation of evaluation committees <ul style="list-style-type: none"> <li>• Creating a tender evaluation committee on e-PPs portal.</li> <li>• PE ensures that members of the evaluation committee are familiar with the online tools.</li> </ul>
355.	Approval notification for award and contract signing <ul style="list-style-type: none"> <li>• Award notification is issued online to successful tenderer</li> <li>• Contract negotiation can be done online or offline if applicable.</li> <li>• Contract between PE and the successful tenderer may be signed online or offline.</li> </ul>

Procedures for conducting e-procurement (Public Procurement Regulations 2013).

### 2.6.2 Drivers to e-procurement adoption

Countries like Korea in its public procurement service have adopted e-procurement system in order to achieve transparency and effectiveness of public procurement along with consideration of price and quality. There are independent variables that stand as drivers or

factors to the adoption of e-procurement worldwide. The variables are grouped into (Lee, 2010);

i. Technological factors

Technological factors have been further classified into technological infrastructures, technical complexity, and technological compatibility are all factors to consider. Advantages perceived as 'direct benefits' include reduced transaction errors and expenses, greater data correctness and information quality, and a speedier application procedure. Indirect benefits, on the other hand, include improved customer service and relationships with business partners (Lee, 2010).

ii. Organizational factors.

Organizational factors have also been further classified into organization size, management attitudes and user involvement. Organization size is seen to be among the most important factors for Small-to-Medium Enterprise (SME). The benefits of modern IT, the higher availability of finances, and the faster exploitation of economies of scale are three main factors that support the beneficial influence of business size in deciding IT adoption. As a result, larger companies are more likely to accept technology at a higher level, whereas smaller companies are more likely to adopt technology at a lower level. Management Attitudes is another factor whereby the top management support facilitates information systems adoption and implementation. The importance of the owners' or senior management's commitment and support during the process of evaluating the innovation or technology is essential. In the aspect that the commitment and support ensures that there is an obligation within the resources, which in turn creates a favorable atmosphere inside the company for the technology adoption process. Environmental factors (Lee, 2010).

Environmental Factors (E) which is further classified as coercive pressure, normative pressure and mimetic pressure leads to adoption of e-procurement by organizations. Coercive pressures on organizations may come from a range of sources, including resource-dominant organizations, regulatory bodies, and parent corporations, according to empirical research, and are established into exchange relationships. Not only the coercive pressure, but also normative pressures are seen to be absolutely necessary because the early growth stage of e-procurement was defined by the popular hype of cost efficiency and process effectiveness. Normative pressures based on the precise types of pressures exerted by entities inside the corporate environment, may speed e-procurement assimilation across transactional and

strategic procurement processes. Mimetic pressure is another environmental factor which occurs by imitating the e-government initiatives in the advanced economies (Suleiman, 2015).

iii. Value addition

According to Suleiman (2015), the overall value created in e-procurement transactions is referred to as value, regardless of whether the value is appropriated by the firm, the customer, or any other participant in the transaction. Paperwork reduction, improved compliance and mistake reduction, decreased ordering costs, competitive bids, reduced cycle time, increased fairness and transparency, and standardization of procurement procedures are all expected values/benefits of e-procurement adoption.

According to Eadie, et al., (2008) there are several drivers of e-procurement from literature written on various industries. Generally, the drivers include;

Process cost savings (tendering or purchasing), service, material, or product cost savings, transaction administration cost savings, reduced administration costs, increased profit, strategic cost savings, enhanced inventory management, cost reductions through reduced staffing levels, shortened overall procurement cycle times, shortened communication cycle, and time reduction through greater transparency (Less objections from either parties), reduction in review time, time saved through improved internal process, time saved in fulfilling purchase orders, contract completion better quality through increased competition, higher quality through benchmarking, and reduced time through increased visibility (market intelligence) , enhanced quality through improved communication, increased quality through greater efficiency, gained competitive advantage, and increased quality through increased visibility in the supply chain (Eadie, et al., 2008)

## **2.7 E-Procurement Worldwide**

Developed countries worldwide have adopted the electronic procurement system with the aim of modernizing their government procurement function. Countries such as the U.S.A, United Kingdom, Canada, Denmark, Australia, and Finland adopted the electronic system of procurement with the purpose of (ADB & WB, 2014);

- i. Achieving increased domestic and international trust in the procurement process's integrity, transparency, and fairness.

- ii. Achieving increased government procurement value for money by delivering better services and facilities to the public.
- iii. Achieving better efficiency of the procurement process in terms of lower expenses for both government and business and shorter time of the process as compared to the traditional system.
- iv. Improving procurement management through a more strategic approach to procurement, delegation of management controls to agencies with performance monitoring, improved availability of information on procurement issues and trends, better decision-making, and the development of procurement professionals at all levels.
- v. Achieving better results of business through consistency and streaming of the process and wider opportunities for SME's.
- vi. Achieve complying with duties under international trade and investment agreements, and reaping the benefits of those arrangements.

Countries like Malaysia have adopted e-procurement and termed it as e- Peroleham. Malaysia uses the e-Peroleham for tendering and online registration of businesses and companies in the country. It is used with the aim of improving quality of services it provides and easing the participation of suppliers and improving accountability and transparency in government contracts and projects (Nawi, et al., 2017).

Some of the countries worldwide have adopted the electronic procurement system and have already had several years in use of the system. Table 2.2 shows some of the countries along with readiness, impact, lessons and challenges in the use of the system. Readiness refers to the policy and legal environment that have led to the design and implementation of the system. Lessons are those that are learnt from the adoption and use of the system and challenges in the use of the system. Some of these countries include Italy, New South Wales, New Zealand, and Scotland as per the Table 2.2.

**Table 2. 2 Some of the countries worldwide in e-procurement.**

	<b>ITALY</b>	<b>NEW SOUTHWALES</b>	<b>NEW ZEALAND</b>	<b>SCOTLAND</b>
<b>READINESS</b>	<p>The 2000 Budget Law ratified a Program for justification of public spending</p> <ul style="list-style-type: none"> <li>- EU directives for harmonizing electronic exchange of information between public administrations</li> <li>-The application of e-commerce and IT was supported by a national strategy</li> </ul>	<ul style="list-style-type: none"> <li>- The 1998 Government Procurement Policy</li> <li>- The 2001 Government e-procurement implementation strategy, and</li> <li>- The 2002 government procurement reform Strategy</li> </ul>	<ul style="list-style-type: none"> <li>- The 2000 Government's e-commerce vision and strategy emphasized a need for e-government and e-procurement</li> </ul>	<ul style="list-style-type: none"> <li>- Public procurement in Scotland becomes the responsibility of the new Scottish Parliament 1999.</li> <li>- Approval of the national E-procurement. Scotland programme</li> </ul>
<b>LESSONS</b>	<ul style="list-style-type: none"> <li>•E-procurement application needs policy reform</li> <li>•Public procurement can benefit from a centralized approach</li> <li>•Collaborative behavior can promote usage and understanding.</li> </ul>	<ul style="list-style-type: none"> <li>•Proactive change management can promote usage</li> </ul>	<ul style="list-style-type: none"> <li>•A strong business case can provide the framework for an e-procurement program</li> <li>•Securing buyers and suppliers is critical when implementing e-procurement</li> <li>•The technical implementation can impact the success of the project.</li> </ul>	<ul style="list-style-type: none"> <li>•E-procurement can reduce procurement costs.</li> <li>•Structure of procurement organizations can affect e-procurement Flexibility in the development of the systems.</li> <li>•E-procurement requires an ongoing review of processes and systems.</li> </ul>

	<b>ITALY</b>	<b>NEW SOUTH WALES</b>	<b>NEW ZEALAND</b>	<b>SCOTLAND</b>
<b>CHALLENGES</b>	<ul style="list-style-type: none"> <li>– Overcoming cultural and political resistance to e-procurement</li> <li>– Improving frame contracts to satisfy outcome criteria</li> <li>– Managing technical issues on environment that prefers verbal interaction</li> </ul>	<ul style="list-style-type: none"> <li>– Attaining and maintaining appropriate skilled personnel</li> <li>– Maintaining use of competent technology</li> <li>– Communicating benefits to promote engagement of buyers.</li> <li>– Developing effective strategies that deliver supplier value.</li> <li>– Managing competing priorities in the government</li> <li>– Developing and applying e-procurement metrics</li> </ul>	<ul style="list-style-type: none"> <li>– Justifying the return on investment (ROI)</li> <li>– Understanding the role of the government</li> <li>– Promoting improvement in procurement process.</li> <li>– Encouraging experienced agencies in adoption of the system.</li> <li>– Gaining supplier adoption and willingness when buyer acceptance is slow</li> <li>– Identifying data standards.</li> </ul>	<ul style="list-style-type: none"> <li>– Developing and/or hiring qualified staff</li> <li>– Educating participants in online auctions</li> <li>– Managing system integrations for new features</li> </ul>

Some of the countries worldwide in e-procurement (ADB & WB, 2004).

### 2.7.1 E-procurement in Tanzania.

Electronic procurement in Tanzania requires as per the regulation for registration of all government entities as users of the electronic public procurement system in order to be able to access the system features of e-pps. Users of the system shall as per the Regulation 345 (1) of the Public Procurement Regulations of 2013, be required to conform to security requirements and any other technical and operational guidelines to be issued by the authority. The system as per the regulation ensures maintenance of confidentiality of all information related to their accounts and being responsible for all the activities relating to the use of their accounts in the e-pps. The system is to be used by all procuring entities in full or partially in parallel with the conventional manual procedures.

## 2.8 Challenges of E-Procurement System

Technological advancement has affected the business environment going further to procurement practices adopting the electronic way of conducting procurement. E-procurement system is relatively a recent growth in the business application area. Despite its pros there are several challenges in its application. The following are some of the experienced challenges (Nawi, et al., 2017).

- i. The lack of benchmark reference models.

Benchmark reference models lacks for the new firms that are just starting to learn of the system's functionality and uses in their organizations. However, technology grows daily therefore changes are likely to happen in the procurement sector leading to the need for frequent trainings and system updates.

- ii. Technological barriers.

Technology not being in favor of the particular business environment and infrastructure to support its operation. Understanding and commitment to specialized software is a technological barrier for vendors.

- iii. Startup fee being a challenge for the firms to adopt.

The startup fees are beyond the abilities of SMEs required by vendors therefore a challenge in the adoption of the electronic system. The focus on support for the systems are more on the larger companies as compared to the small enterprises (Nawi, et al., 2017).

- iv. Inadequacy in government policies.

Inadequacy in the policies and legislations are areas to be emphasized. This challenge brings about the existence of bureaucracy in procurement proceedings therefore leading to a less effective system of procurement and gives room for other challenges.

- v. Lack of standard in the development

The lack of standard development of the system results in a diverse but fragmented e-procurement environment due to lack of proper communication among users of the system who cannot communicate electronically (Nawi, et al., 2017).

## 2.9 Advantages of E-Procurement System

The adoption of the electronic system of procurement in most countries has in away been beneficial to the industries concerned and electronic governments. Studies have shown advantages of practicing e-procurement in terms of cost saving aspects, efficiency, delay reduction and risk minimization.

i. Cost saving benefit.

Nawi, et al., (2017) explains cost benefit in terms of management costs, reduction of inventory costs due to increased competition, reduced order cost, administration cost, effort costs in processing the purchase order which can be operated electronically.

ii. Efficiency benefit.

E-procurement has in a successful way explained to be the most efficient way in performing procurement proceedings. Studies in various countries like Malaysia explain e-procurement efficiency in terms of procurement of goods online, efficiency in timeliness, efficiency in effort minimization in doing business, and increased competition which leads to saved costs in buying goods and services at high prices with improved quality. Efficiency benefit has also been identified in increased transparency of information which results from electronic bidding.

iii. Delay eradication in a way that the proceedings are undertaken in a platform and becomes

easy to make follow up of the process.

iv. Risk minimization.

Exposure to various hindrances of procurement proceedings are seen to be minimized in the use of e-procurement. Studies like (Nawi, et al., 2017) have specified financial risks and technical risks being minimized in the use of the new system of procurement.



**Table 2. 3 Advantages of e-procurement from different authors**

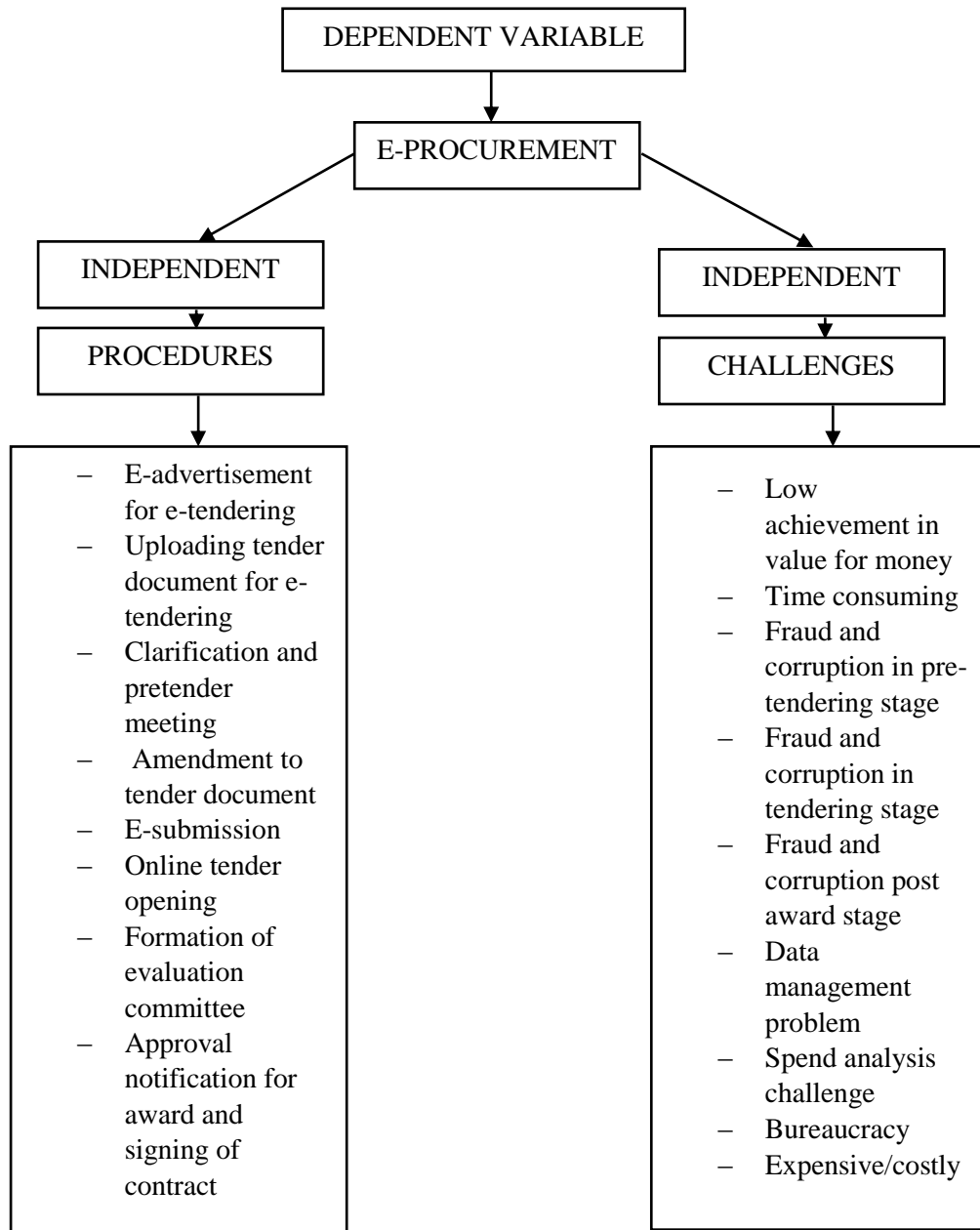
AUTHOR	ADVANTAGES
(Chaffey, 2009)	<ul style="list-style-type: none"> <li>• Cost and procurement time reduction</li> <li>• Budget control that is more effective since expenditures are limited and reporting is improved.</li> <li>• Reducing administrative and ordering errors</li> <li>• Allowing the originator to focus on the strategic aspects of acquisition</li> <li>• Enhanced information management</li> <li>• A more efficient payment system (if it is integrated with e-procurement)</li> </ul>
(Calipinar & Soysal, 2012)	<ul style="list-style-type: none"> <li>• Inventory reduction</li> <li>• Increased productivity and/or improved service</li> <li>• Save time</li> <li>• Procurement management that is decentralized</li> <li>• Improved communication and collaboration with suppliers</li> <li>• More effective planning and control</li> <li>• Increased efficiency of the purchase process</li> </ul>
(Chipiro, 2009)	<ul style="list-style-type: none"> <li>• Increased contract adherence.</li> <li>• Procurement cycle times have been shortened.</li> <li>• Improved customer demand visibility.</li> <li>• Increased production capacity accuracy.</li> <li>• Costs of operations and inventory have been reduced.</li> </ul>

Advantages of e-procurement from different authors (Chipiro, 2009).

### 2.10 Research Gap

Studies have clearly stated the challenges in the traditional system of procurement (Ahimbisibwe, 2016), which has also led to most countries adopting the electronic system of procurement. Studies have also explained on the drivers to e-procurement as well as the challenges in adaptation but Tanzania as a developing country that has adopted the system in 2020 as per the government requirement, this study has assessed on the effectiveness of e-procurement in works procurement in addressing the traditional procurement challenges in works procurement (The clients' perspective) which has not been covered in any study yet.

## 2.11 CONCEPTUAL FRAMEWORK



**Figure 2.4 Conceptual framework guiding the study.**

## 2.12 Chapter Summary

This chapter provides for literature review on procurement in Tanzania, traditional procurement procedures, traditional procurement challenges, electronic procurement process and drivers, electronic procurement worldwide, advantages and challenges of the electronic system of procurement. The next chapter explains on how the research was done (research methodology).

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Introduction

According to Kothari (2004), research methodology is a systematic and rational way devised for solving a research problem. This is accomplished through the use of an operational framework that methodically explains facts in order to solve the research problem and evaluates the reasoning behind the approach utilized by identifying features relevant to the study objectives. Kumar (2011), adds that in order to conduct a valid study, a solid understanding of research methodology is required. This chapter gives details on the research design, population, sampling procedures, sample, sample size and methods of data collection that were used for the accomplishment of assessing the effectiveness of e-procurement in addressing the traditional procurement challenges in works procurement.

#### 3.2 Research design

Kothari (2004), defines research design as the setting of conditions for data collection and analysis with the purpose of balancing relevance to the research goal with procedural efficiency. Kothari adds that research methodology constitutes a blueprint for the collection, measurement and analysis of data. As such the design includes an outline of what is done in this research, which includes the methodology and approach used, to the outline of final analysis for good recommendations and conclusion.

Creswell (2009), defines research design as strategies and procedures for research that covers everything from general assumptions to in-depth data gathering and analysis procedures. In this study, survey research design will be used due to the purpose of the study, primary audience from which data will be obtained and study focus which is on the effectiveness of e-procurement in addressing the challenges of traditional procurement in works procurement.

Mixed approach is used in this research because the study combines both qualitative and quantitative forms. Mixed approach involves philosophical assumptions which are more than just collecting and analyzing both kinds of data (quantitative and qualitative). Strength of qualitative and quantitative research was merged to facilitate a wide examination and

exploration of effectiveness of e-procurement in addressing traditional procurement challenges in construction works procurement. It involves the use of approaches in sequence which makes the overall strength of the study greater (Creswell, 2009).

### **3.3 Population of the study.**

Study population is the population from which sample is to be drawn (Mohamed, 2019). Generally, population in research refers to a large group of individuals or objects that the researchers are interested in generalizing the conclusions. The study population of this research is government procuring entities based in Dar es Salaam, because of the requirement that was made by the government that all government entities have to adopt the new procurement system. Therefore, it is directly relevant to the government procuring entities. Respondents appropriate for the research study were the head of PMU (Procurement Management Unit) or representative of head of PMU from the government entities involved in construction and procurement officers. Initially the questionnaires were distributed to procurement officers and construction works professionals in order to come about with the exact and specific target respondents.

Unit of analysis refers to the major element that is being examined in a study. It is the 'what' or 'who' that is being studied. For this research study the unit of analysis was effectiveness of e-procurement in addressing the traditionally procurement challenge in works procurement.

### **3.4 Survey Research.**

Survey research is a feature of quantitative method involving the use of self-report measures on properly selected samples. It's a versatile methodology that can be applied to a wide range of scientific and practical research problems. This research design has been applied in social surveys in England and America which was carried out in the early 20th century by scholars who wished to document the scope of societal issues including poverty. It also has a long history with the study of attitudes, stereotypes, and prejudices in social psychology. In a nutshell, survey research asks participants (respondents) to directly report on their ideas, feelings, and actions (Price, 2010).

### **3.5 Sampling technique, sample size and sampling procedure.**

Sampling technique refers to the process of selection of a sample from the respective population. Therefore, the selection of sample from government entities specialized in construction works procurement. Non probability or non-random sampling is a sampling technique used when a researcher has to determine how a small group or representative group is performing for the purposes of example and explanation, and in the majority of cases, the choice of the sample provides the accurate information representing the population (Kothari, 2004). This study was undertaken by non-probability sampling because not everyone in the population has the opportunity to engage in the study, members of the population are chosen based on their ease of access.

#### **3.5.1 Sampling technique.**

The sampling technique used for this study was convenience sampling. Convenience sampling is a non-probability sampling technique where respondents are selected because they are easily accessible and close to the research. The targeted population are used to draw network from whom the information is collected, this is done until the reach of saturation point. In convenience sampling technique individuals are chosen based on their availability and desire to respond. In this study, selection on distribution of questionnaire was done to head of PMU or representative of head of PMU from the entities and responses from professions of the respective user department such as (Architects, Quantity surveyors and Engineers) also interview was conducted to the head of PMU or representatives of head where head was not available at the time.

#### **3.5.2 Sampling procedure and sample size.**

According to Kothari (2004), sample size is what is proposed as precision rate of, and confidence rate. However, the selection criteria of sample size was based on entities specialized in construction works procurement. Below is a list of government entities specialized in construction works procurement as identified, a sampling frame for each of the entities and target respondents for the study as sample size.

**Table 3. 1 Sampling procedure and sample size from respective entities.**

<b>Population</b>	<b>Sampling frame</b>	<b>Target Sample size</b>
TANROADS	i. Engineer ii. Quantity surveyor iii. Head of PMU/ Representative	5
TBA	i. Engineer ii. Quantity surveyor iii. Architect iv. Head of PMU/Representative	6
NHC	i. Engineer ii. Quantity surveyor iii. Architect iv. Head of PMU/Representative	6
ARU	i. Engineer ii. Quantity surveyor iii. Architect iv. Head of PMU/Representative	4
NSCD	i. Engineer ii. Quantity surveyor iii. Architect iv. Head of PMU/Representative	4
CITY COUNCIL	i. Engineer ii. Quantity surveyor iii. Architect iv. Head of PMU/Representative	4
ILALA MUNICIPAL	i. Engineer ii. Quantity surveyor iii. Architect iv. Head of PMU/Representative	4
KINONDONI MUNICIPAL	i. Engineer ii. Quantity surveyor iii. Architect iv. Head of PMU/Representative	4
TEMEKE MUNICIPAL	i. Engineer ii. Quantity surveyor iii. Architect iv. Head of PMU/Representative	4
UBUNGO MUNICIPAL	i. Engineer ii. Quantity surveyor iii. Architect iv. Head of PMU/Representative	4
KIGAMBONI MUNICIPAL	i. Engineer ii. Quantity surveyor iii. Architect iv. Head of PMU/Representative	4

**Source: ministries.**

### **3.6 Data collection methods**

These are ways that a researcher uses with the intention to collect the required data for the research. Data collection is vital in any research study because it allows access to the most correct information suitable for dissemination and development of meaningful aspects such as programs that are related to the study. For this study, questionnaires were used in the achievement of objective one and two. Also, interview was another method of data collection that was used to collect data specifically from the heads of procurement management units or the representatives of heads. Interview was applied to them in order to get rich information on the effectiveness of the system, challenges addressed by the system, challenges available and recommendations for an effective system.

#### **3.6.1 Questionnaires**

Questionnaire is a method of data collection which involves of a number of questions printed or typed in a certain order on a form or set of forms. It can either be mailed or printed then handed to respondents who are required to read, understand, and respond to the questions in the space provided on the questionnaire (Kothari, 2004). Questionnaires suitable for the study were open ended questionnaires because they provide the study with rich qualitative data to support the third objective by giving the respondents the opportunity to provide information or opinions of the topic that the researcher is not familiar with, therefore an added knowledge in the study.

The questionnaires were distributed to procurement officers, and construction professions such as engineers, architects, and quantity surveyors in the procuring entities specifically dealing with construction.

On questionnaire guide, part A of the questionnaire comprised information about professional qualification of the respondent, also the title of the research study and the researcher's information. The professional qualification of the respondent was necessary for understanding the exact profession using the electronic system of procurement and provision of most genuine information to the research study. Part B1 was about years of experience in the industry, B2 was familiarity or awareness of the electronic procurement by the respondent, and B3 on whether the entity is registered online in TANEPs (Tanzania National Electronic Procurement System). B4 is another question which was about procedures implementation of the electronic system of procurement with the aim of assessing if the system is fully implemented in construction works procurement and B5 was about the level in

which e-procurement has addressed the traditional procurement challenges in works procurement. B4 and B5 questions were asked in Likert scale format.

The researcher ensured that the respondents were aware of the day and time of delivery of the instruments as well as the time in which the instruments were to be collected. The questionnaires were administered on the same day of visit, whereby the purpose of distribution of questionnaire was said and stated on the questionnaires to the respondents. The questionnaires were left with the respondents and were notified that the questionnaires will be collected on the other day after they have clearly read and understood the questions with effective responses to help with the study.

### 3.6.2 Interview

Interview is another method of data collection that was used in this research study whereby it was done by presentation of oral-verbal stimuli, and replies are given in the form of oral verbal responses. Interviews can be done through personal interview in other words face to face interview or through telephone interview, each way having both merits and demerits in their use (Kothari, 2004). This method was preferably used in this study to collect information through face to face interaction with the heads of PMU or their representatives because of their competence in procurement proceedings and the need to obtain more information from them such as effectiveness of the system, challenges addressed by the system, challenges available and recommendations towards achieving an effective system.

## **3.7 Ethical Issues, Reliability and Validity**

### 3.7.1 Ethical Issues

Ethical issues in the purpose and research question were addressed through ensuring that same purpose of the study was understood well by participants thus the researcher and participants were capable of individually describing the purpose of the study.

Ethical issue in data collection; the study gave freedom to participants to decide the extent in which they will participate in the study. The purpose of the questionnaires as well as interview were disclosed to all respondents as appendix A and B so that they can decide to participate or not.

In data collection, the questionnaires and the collected information were kept for a reasonable period for evidence purpose in case of any inconvenience also for ensuring confidentiality. All the researchers' work used were cited to indicate less intention of plagiarism.



### 3.7.2 Reliability and validity

Validity of the research instrument was ensured by distributing questionnaires to be reviewed by the research supervisor and other research experts. This was done in order to ensure that the research instrument measure was used accordingly so as to enable drawing of meaningful conclusion. On the other hand, reliability was achieved by piloting the questionnaires so as to rephrase them where necessary. Also, questionnaires were distributed so as to test if respondents provide the same response.

### **3.8 Chapter Summary**

This chapter provides for research methodology on the research topic, that is; the research design, sampling technique, and data collection methods used to achieve research objectives. The next chapter explains on analysis of the collected data.

## CHAPTER FOUR

### ANALYSIS

#### **EFFECTIVENESS OF E-PROCUREMENT IN ADDRESSING TRADITIONAL PROCUREMENT CHALLENGES IN WORKS PROCUREMENT. (THE CLIENTS' PERSPECTIVE)**

##### **4.1 Introduction**

This section analyses the gathered data from the field into useful information by making intensive discussion of the results. Data gathered for this study is both qualitative and quantitative data whereby, the main objective of this research was to evaluate the effectiveness of e-procurement in addressing traditional procurement challenges in works procurement. Qualitative analysis has been used in this study with the aim of assessment based on opinions, attitudes and behavior from procurement professionals on the use of the new system as per government requirement in construction works procurement. Quantitative data collected was analyzed and in order to obtain more precise computation, SPSS (20) was used. For quantitative analysis, the study adopted the use of arithmetic mean operation in determining the mean score.

$$\text{Mean Score Value} = \sum FxS / N$$

Where:  $Fx$  = Frequency of response for each score

$S$  = Score given each cause

$N$  = The total number of respondents for each factor

##### **Average Mean score value (M.S)**

The value from mean score was categorized into three groups where the value from 1 to 2.9 ranked as low mean score, from 3 to 3.9 ranked as medium/moderate mean score and 4 to 5 were ranked as the high mean score as presented.

**Table 4. 1 Mean score values used in discussion of finding.**

No.	Mean Score/Average mean score	Q	Color
01.	$1.0 \leq M \leq 2.9$	Low Mean Score	
02.	$3.0 \leq M \leq 3.9$	Medium/Moderate Mean Score	
03.	$4.0 \leq M \leq 5.0$	High Mean Score	

**Mean score values used in discussion of findings (Jongo, et al., 2019).**

#### 4.2 Response Rate

The study aimed at evaluating the effectiveness of e-procurement in addressing the traditional procurement challenges in works procurement, and the target population being government entities implementing public construction projects. As per the government requirement, it directly affected the government entities in using the electronic system instead of the traditional system therefore the government entities being the target as consultants and contractors. The sample size according to the field responses is 21 which is of 50% of the distributed questionnaires.

**Table 4. 2** Response rate Source: Surveyed data:

Government entities	Questionnaire distributed	Responses
A	5	3
B	5	4
C	5	2
D	5	3
E	5	2
F	5	1
G	3	2
H	3	2
I	3	1
J	3	1
<b>TOTAL:</b>	<b>42</b>	<b>21</b>

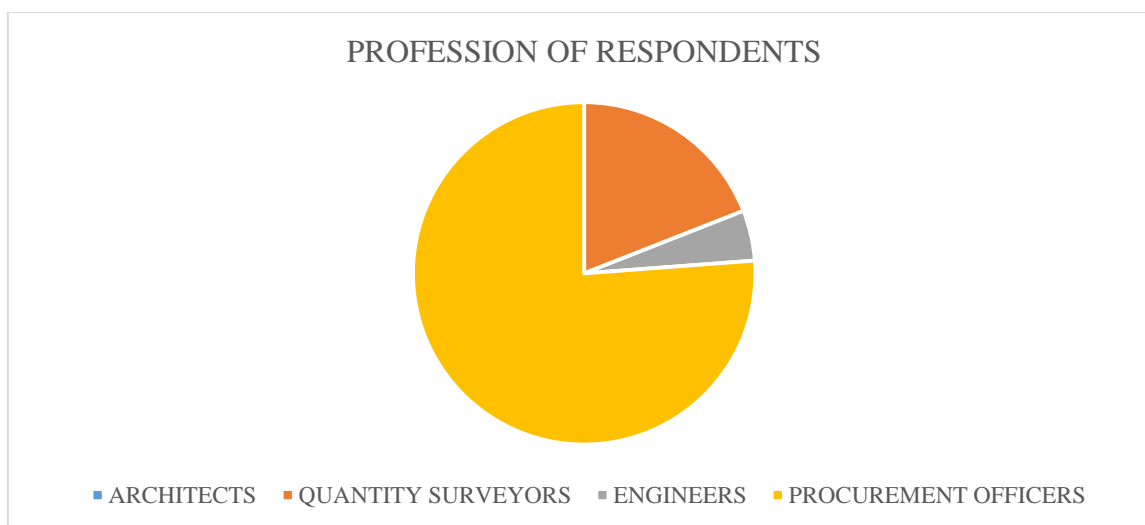
#### 4.3 Population characteristics

This section is primarily intended to provide information about the respondents in terms of their profession, experience and their familiarity in e-procurement.

##### 4.3.1 Profession of respondents

There are various designations in the industry specifically involved in works procurement. As per government requirement, in the implementation of e-procurement such designations

include quantity surveyors, engineers, architects and procurement officers. Profession of respondents were filled in the distributed questionnaires and returned by 4 quantity surveyors, 1 Engineer, 0 architects, and 16 procurement officers.



**Figure 4. 1 Showing profession of respondents**

#### 4.3.2 Experience of respondents

Experience of respondents in works procurement was among the data collected from the field as part of the research which was helpful in determining the experience that the respondent has in the use of the new system of procurement in comparison to the traditional system of procurement.

**Table 4. 3 Years of experience of respondents.**

S/N	YEARS	FREQUENCY
1	1-5	12
2	5-10	7
3	10-15	1
4	15-20	1
	<b>TOTAL</b>	<b>21</b>

#### 4.4 Interviews

Interviews were conducted between October and November 2020 time when the questionnaire survey was sent out. The Interviews took place in Dar es Salaam, Tanzania, for reasons explained in Chapter 1, Section 1.7.2. Based on the prepared interview questions (see Appendix B) the time interval of the semi-structured interviews was between 45–100 minutes.

Semi-structured interviews were preferred due to the ability of Head of Procuring Management Unit or their representatives, to provide detailed information regarding the electronic system of procurement. Semi-structured interviews were preferred because they are flexible enough to explore inquiries into areas that could reveal fresh scopes of difficulties that are not identified and can produce extensive information (Axinn & Pearce, 2006). In total, 5 semi-structured interviews were conducted with the Heads of Procurement Management Unit of the respective government entities until point of saturation.

**Table 4. 4 Interviewee profile**

Interviewee	Government Entity	Designation	Sector	Prof Background	Experience with E-procurement
A	B	HPMU	PMU	Procurement officer	< 1year
B	C	HPMU	PMU	Procurement officer	< 1 year
C	D	HPMU	PMU	Procurement officer	<1 year
D	H	HPMU	PMU	Procurement officer	< 1 year
E	I	HPMU	PMU	Procurement officer	<1 year

The interviewee profile from Table 4.4 implies that the information collected is the most reliable source since the system had less than one year in operation in use in the procuring entities specialized in construction.

#### **4.5 The current level of e-procurement implementation as per government requirement.**

The purpose of this objective was to assess the current level of e-procurement implementation as per government requirement.

As per the requirement that is made by the government, procedures for the electronic procurement were made and included in the Public Procurement Regulation of 2013. Procedures for the electronic system begin with e-advertisement for e-tendering to approval notification for award and signing of contract. Respondents involved in works procurement were to weigh the procedures on how frequent they used each procedure in procurement.

The responses from the respondents are as follows on the procedures for conducting e-procurement in works procurement.

The top ranked procedures as the most frequently used are; uploading tender document for e-tendering as the 1<sup>st</sup> ranked most used with average mean score of 4.619, 2<sup>nd</sup> being e-

submission with average mean score of 4.476, 3<sup>rd</sup> being e-advertisement for e-tendering with average mean score of 4.365. The lowest ranked procedures, which are not frequently used in comparison to the other procedures are; formation of evaluation committees as the 6<sup>th</sup> ranked with average mean score of 3.5, approval notification for award and signing of contract as 7<sup>th</sup> with average mean score of 3.404, and online tender opening as 8<sup>th</sup> with average mean score of 3.381. Most of the responses with regard to Table 4.1 fall under high mean score and moderate or medium mean score.

**Table 4. 5 The current level of e-procurement implementation as per government requirement.**

PROCEDURE	NOT	VR	R	F	VF	MS	A.V.M	RANK
	RESPONSE IN NUMBERS							
E – advertisement for e-tendering			1	7	13	4.57	4.37	3
a) Online invitation for tenders.				13	8	4.38		
b) Invitation for tender is published in e-pp portal.								
c) Date of tender notice published in e-pp portal is the start date of tender preparation.		1	1	13	6	4.14		
Uploading tender document for e-tendering		1		5	15	4.62	4.62	1
a) Submission of tenders online before deadline is specified in invitation.								
Clarification and pretender meeting			6	6	9	4.14	4.26	4
a) Tender notice has provided features for online pretender meetings on the specified date and time.								
b) Request for clarification by tenderers and responses to queries is posted online within prescribed time in the tendering document.	1	2	2	4	12	4.38		
Amendment to tender document		2	2	10	7	4.05	4.12	5
a) Amendment by PE's on the documents is done at any time prior to the deadline for receipt of tenders.								
b) Short message alert is given on	2			9	10	4.19		

PROCEDURE	NOT	VR	R	F	VF	MS	A.V.M	RANK
	RESPONSE IN NUMBERS							
the amendments made.								
<b>E- submission</b>				11	10	4.48	4.48	2
a) Submission of tenders online (before closing time)				9	12	4.57		
b) Receive of tenders online before closing time.			2	9	10	4.38		
c) Unreadable tenders not being considered.								
Online tender opening	1			8	12	4.43	3.38	8
a) Online tender opening schedule is specified in invitation to tender								
b) Physical presence of tenderers in tender opening	10	1	4	5	1	2.33		
Formation of evaluation committees	1	1	3	5	11	4.14	3.5	6
a) Creation of tender evaluation committee on epp portal								
b) Altering of tenderers data by the evaluation committee	9		4	1	7	2.86		
Approval notification for award and signing of contract	4	2	1	4	10	3.67	3.40	7
a) Online award notification to successful tenderer								
b) Contract negotiation online	10	1	5	2	3	2.38		
c) Contract negotiation offline		1	2	5	13	4.43		
d) Contract between PE and successful tenderer is signed online	12		4	2	3	2.24		
e) Contract between PE and successful tenderer is signed offline	3	1		6	11	4.00		
f) Contract award is published in epp - portal	1	4	5	1	10	3.71		

### Discussion of findings

Table 4.5 indicates procedures for electronic procurement as per the 2013 Public Procurement Regulations to be used in the implementation of the system as a requirement made by the government. The procedures in e-procurement as per the Regulation begin with

Regulation 347 to 355 as a guide to the use of the new system and an addition in the 2016 amendments regulation that is made in Regulation 354. Findings in the implementation of electronic procurement in works procurement show that the implementation is at a high level with a total average mean score of 4.02. As shown on Table 4.5, with a high mean score showing that the current level of implementation is at its peak. Interview findings were used to supplement these findings and **Interviewee B** revealed that,

*“The system is fully implemented but for some procedures like negotiation and tender opening are done offline and sometimes tender advertisement.”*

### **Uploading tender document for e-tendering.**

Referring to Table 4.5, uploading tender document for e-tendering was ranked first with an average mean score of 4.62. Respondents ranked this the highest showing that the submission of tenders is done online before the deadline specified in invitation and any incomplete tender is not allowed by the e-PPs. This is in accordance with the Regulation 348 (1) and (2) of the 2013 regulations of public procurement.

### **E-submission**

Table 4.5, shows that e-submission is ranked second with average mean score of 4.48. Respondents ranked this as the second highest showing that the submission of tenders online is done before closing time, the receiving of tenders online is before closing time as well as unreadable tenders not being considered. This is as per the Regulation 351 sub-Regulation 1, 2 and 3 of the 2013 public procurement regulation.

### **E-advertisement for e-tendering**

Table 4.5 indicates that the responses ranked e-advertisement for e-tendering as the 3<sup>rd</sup> highest with an average mean score of 4.37. This shows that advertisement is done online as per the regulation 347(1), 347(2), 347(4). The sub regulations include online invitation for tenders, invitation for tender being published in e-PP portal by proper authority from the procuring entity and the date of tender notice published in e-PP portal is the start date of tender preparation.

### **Approval notification for award and signing of contract**

Referring to Table 4.5, approval notification for award and signing of contract was ranked 7<sup>th</sup> as the second lowest with average mean score of 3.40, showing that the procedure moderately



implemented as per Table 4.1 indication of medium score range. According to 2013 public procurement regulation, the sub regulations include online award notification to successful tenderer by the PE, 355(2). Contract negotiation being done online as per regulation 355(3), contract between PE and successful tenderer being signed online 355(4), and contract award being published in e-PP portal 355(5). The lowest ranked sub regulations being the online signing of contract and online contract negotiation which shows that these procedures are not implemented electronically as per the government requirement in the 2013 public procurement regulations.

### **Online tender opening**

Table 4.5 shows that online tender opening in the electronic procedures for procurement is the least ranked coming 8<sup>th</sup> with average mean score of 3.38. The regulation 352(2) gave least responses regarding physical presence of tenderers at the tender opening meeting although the regulation gives an option to be made available for online participation of the tenderers in the e-PP portal for them to attend the tender opening online session.

## **4.6 The level at which e-procurement has addressed the challenges of traditional procurement in works procurement**

The purpose of this objective was to establish the level at which e-procurement has addressed the challenges of traditional procurement in works procurement. Tanzania is among the countries that have adopted the electronic system of procurement in replacement of traditional procurement due to the weaknesses that existed and minimized the efficiency in public procurement operation. The responses on the level at which e-procurement has addressed the challenges of traditional procurement in works procurement are as follows in order of the highest ranked and lowest ranked.

The top ranked challenges as the most addressed challenges by the electronic system of procurement are; spend analysis which was ranked 1<sup>st</sup> with average mean score of 4.62, fraud and corruption in tendering stage as 2<sup>nd</sup> with average mean score of 4.38 and fraud and corruption post award as 3<sup>rd</sup> with average mean score of 4.34. The lowest ranked challenges as the least addressed challenges by the electronic system were fraud and corruption in pre-tendering stage as 9<sup>th</sup> with average mean score of 3.9 and time consuming as 8<sup>th</sup> with average mean score of 3.95.

These results were supported by information obtained from interviews and **Interviewee B** revealed that,

*“Time consumption exists in both. The electronic system has network and maintenance issues which leads to delay in the process.”*

In addition, **Interviewee H** adds that,

*“There has been several notices of unscheduled maintenance which delays the whole process until the system is stable.”*

However, **Interviewee I** stress that,

*“Delays still exist in the new system during approval to the Accounting Officer due to the power in hand or time available for him to approve.”*

**Table 4.6 The level at which e-procurement has addressed the challenges of traditional procurement in works procurement.**

CHALLENGES	SD	D	N	A	SA	MS	A.V. M	RANK
	RESPONSE IN NUMBERS							
<b>Low achievement in Value For Money</b>				6	15	4.71	3.98	7
a) Transparency and integrity								
b) Bidder whose bid best meets needs and objectives is selected				9	12	4.57		
c) Clear evaluation criteria aligned with the needs.			9	10	2	3.67		
d) Contractual form appropriate for the objective is selected.			9	5	7	3.90		
e) Suitable method of procurement for the purpose is selected.		23.57	14.29	5	7	3.62		
f) Clear statement of procurement needs and objectives is developed.		14.29	28.57	57.14		3.43		
<b>Time consuming</b>						4.33	3.95	8
a) Decreased repetitive tasks or process.			14.29	38.10	47.62			
b) Decreased process delay (Slowness of approvers/ Suppliers responses).			42.86	7	5	3.81		
c) Clear visibility of overall process.			3	11	7	4.19		

CHALLENGES	SD	D	N	A	SA	MS	A.V. M	RANK
	RESPONSE IN NUMBERS							
d) Effective communication in the process.			5	11	5	4.00	3.9	
e) Document control (paper work handling challenges).			5	5	11	4.29		
f) Error handling in the process.		38.10	38.10		23.81	3.10		
<b>Fraud and corruption (Pre-tendering stage)</b>							3.9	9
a) Suitable tenderers are not disqualified.		9.52	14.29	38.10	38.10	4.05		
b) Reasonable invitation tender list.			9	7	5	3.81		
c) Changing list of preferred suppliers.			10	11		3.52		
d) Contracts specification various suppliers can meet.				12	9	4.43		
e) No existence of Personal relationship between staff and suppliers.			14		7	3.67		
<b>Fraud and corruption (Tendering stage)</b>				6	15	4.71	4.38	2
a) No withdrawal of a lower bidder without reason.								
b) Flexible evaluation criteria.		2		11	8	4.19		
c) No acceptance of late bids.				6	15	4.71		
d) No Changes in the specifications after bids.			8	5	8	4.00		
e) Proper documentation of contract award process.				10	11	4.52		
f) No consistent favoring of one firm over the other.			6	5	10	4.19		
<b>Fraud and corruption (Post award)</b>			2	7	12	4.48	4.34	3
a) Existence of common valid platform among the people involved.								
b) Existence of common platform where contracts can be recorded and maintained.			6	5	10	4.19		

CHALLENGES	SD	D	N	A	SA	MS	A.V. M	RANK
	RESPONSE IN NUMBERS							
<b>Data management Problem</b>						3.90	4.26	5
a) Less paper work involved.			9	5	7			
b) Simplicity in auditing process.			6	5	10	4.19		
c) Little or no paper work is destroyed.			2	3	16	4.67		
d) No involvement of different hands of individuals in the process.				15	6	4.29		
<b>Spend analysis</b>						4.62	4.62	1
a) Clear picture of all transactions.			3	2	16			
<b>Bureaucracy</b>						3.81	4.24	4
a) No existence of biasness & favoritism			8	9	4			
b) Existence of transparency			3	4	14	4.57		
c) Existence of records of dealings			3	8	10	4.33		
<b>Expensive /Costly</b>						3.76	4.12	6
a) Less labor costs in the process.		5	3	2	11			
b) Less Paper works involved.			6		15	4.43		
c) Less transport charges involved.			6	7	8	4.10		
d) Less associated stationaries.			3	12	6	4.14		

### Discussion of findings

Table 4.6 shows a list of challenges and responses given by different professionals involved in works procurement regarding the level at which the electronic system of procurement has addressed the challenges of traditional system of procurement. Various authors have written about the challenges after conducting research and coming up with most common challenges faced in the traditional procurement.

### Spend analysis

Table 4.6 shows that the most addressed challenge by the electronic system of procurement in the traditional procurement is spend analysis. It is ranked 1<sup>st</sup> with average mean score of 4.62. The measure for how spend analysis has been addressed in the electronic system was a clear

picture of all transactions. This shows that the system has in a way enabled to easily trace the transactions made in the procurement proceedings. According to W2A (2018), in manual procurement, there is no a clear picture of all transactions as a feature of spend analysis challenge.

#### **Fraud and corruption (tendering stage)**

Table 4.6 shows fraud and corruption in tendering stage as the 2<sup>nd</sup> ranked most addressed challenge with average mean score of 4.38. Measures for fraud and corruption during tendering stage included; no withdrawal of a lower bidder without reason, flexible evaluation criteria, no acceptance of late bids, no changes in specifications after bids, proper documentation of contract award process and no consistent favoring of one firm over the other. According to W2A (2018), fraud and corruption is a challenge in the traditional procurement and also that the traditional procurement lacks a proper check that could be maintained over the workers in handling the procurement process. Therefore this challenge in tendering stage shows to be effectively addressed by the electronic system of procurement.

#### **Fraud and corruption (post award).**

Table 4.6 shows fraud and corruption in post award stage as the 3<sup>rd</sup> ranked most addressed challenge with average mean score of 4.34. Measures for how this challenge has been addressed were; existence of common valid platform among the people involved and existence of common platform where contracts can be recorded and maintained. According to OLAF (2013), the traditional system of procurement lacks a common platform where by contracts and their transactions can be recorded and maintained because everything takes place by the medium of various people involved in the process of procurement. This is seen to be solved in the electronic system of procurement due to responses given.

#### **Fraud and corruption (pre-tendering stage).**

Respondents ranked fraud and corruption in pre-tendering stage as 9<sup>th</sup> and least addressed challenge with average mean score of 3.9 as shown in Table 4.6. Measures for fraud and corruption in pre-tendering stage involved; suitable tenderers are not disqualified, reasonable invitation tender list, changing list of preferred suppliers, contract specification various suppliers can meet, no existence of personal relationship between staff and suppliers.

OLAF (2013) explains on indicators of fraud and corruption in pre-tendering stage as disqualification of appropriate tenderers in favor of another corrupt tenderer for the award of

contract to be on their side, short invitation tender list, unchanging list of preferred suppliers, contracts specifications that do not make commercial sense, contracts that include special but unnecessary specifications that only one supplier can meet and personal relationships between staff and suppliers. However, the electronic system has with the average mean score of 3.9 addressed the challenge as per the responses from the system users.

### **Time consuming**

Table 4.6, shows the challenge of time consumption as one of the least addressed challenges by the electronic system of procurement. Time consuming is ranked 8<sup>th</sup> with average mean score of 3.95. Measures for this challenge being addressed were, decreased repetitive tasks or processes in the traditional system, decreased process delay (slowness of approvers/ supplier responses), clear visibility on overall process, effective communication in the process, document control (paper work handling challenges) and error handling in the process.

According to Mena (2018), time consumption in the traditional procurement has been a challenge due to manual way of handling the procurement proceedings through repetitive tasks or processes, process delay, less visibility on overall process, miscommunication, document control and error handling in the process. However, time consumption still exists in the electronic system due to occurrence of network and maintenance issues.

### **4.7 Chapter Summary**

This chapter provides for analysis of the collected data, that is; the profession of respondents, analysis of objective 1 which was the assessment of the current level of implementation of e-procurement in works procurement as per the government requirement. Also, establishment of the level at which e-procurement has addressed the traditional procurement challenges in construction works procurement. The next chapter provides for recommendations and conclusion of the research study.

## CHAPTER FIVE

### CONCLUSION AND RECOMMENDATION

#### 5.1 Introduction

This study aimed at evaluating the effectiveness of e-procurement in addressing the traditional procurement challenges in construction works procurement. This chapter is comprised of conclusions on the research objectives, recommendations for an effective system of procurement and areas of further study.

#### 5.2 Conclusions

5.2.1 The current level of e-procurement implementation as per government requirement.

The objective identified that the most implemented procedures of electronic procurement as per the government requirement are uploading tender document for e-tendering where by submission of tenders online before deadline is specified in invitation. Also, e-submission whereby the submission and receiving of tenders is done online before closing time and unreadable tenders are not considered.

The objective further led to the identification of least implemented procedures which are online tender opening, approval notification for award and signing of contract and formation of evaluation committee. This shows that the e-procurement is not fully implemented, because traditional procurement way of operation is still in use for least implemented electronic procurement procedures.

5.2.2 The level at which e-procurement has addressed the traditional procurement challenges in works procurement.

The following are the most addressed challenges of traditional procurement by the e-procurement in works procurement.

- i. Spend analysis is the most addressed challenge by the electronic system of procurement where by before the new system there was a lack of clear picture on all transactions in the entire process of procurement.
- ii. Fraud and corruption in tendering stage is another challenge addressed by the new system through no withdrawal of a lower bidder without reason, flexible evaluation criteria, no acceptance of late bids, no changes in specifications after bids, proper

documentation of contract award process and no consistent favoring of one firm over the other.

- iii. Fraud and corruption in post award phase of procurement is another challenge addressed by the electronic system through existence of common valid platform among the people involved and existence of common platform where contracts can be recorded and maintained.

### **5.3 Recommendations.**

In line with the findings on the challenges addressed and the current level of implementation of e procurement, the following are recommendations on how to make the system effective and efficient.

- i. Use of stable internet and electricity by the government entities. This should be managed by ensuring that electricity is available at all time and preferably the use of standby generators in case of power cut. Also, the strengthening of internet connection availability in the government entities by the IT technicians and respective authority.
- ii. TANEPs should ensure frequent trainings to the users of the system of all professions. That is, the IT technicians, quantity surveyors, engineers, procurement officers, and the like as tender board members and evaluation committee team.
- iii. System administrators (TANEPs) should find a way to strengthen the e-procurement system because of process delay caused by the issue of system collapsing several times in a month. Users recommend on the use of updated system in order to overcome the challenge of system collapse which may make them use the traditional system of procurement.
- iv. TANEPs should be stable because its instability leads to a lot of time consumption on tendering process which may lead to delays in procurement proceedings. Stability of the system will facilitate smooth operation of work activities.
- v. Recommendation on the use of frequent updated system that favors procurement activities. This should be done in order to make the system effective for the users and the entire process of procurement when in use.



**5.4 Areas for further studies**

- i. Participation of construction professions in the use of electronic system of procurement.
- ii. Effects of technological changes in procurement on construction works procurement.
- iii. Involvement of Procurement officers in construction works procurement in the use of electronic system of procurement.

## REFERENCES

- ADB, 2018. *Asian Development Bank*. [Online]  
Available at: [www.abd.org](http://www.abd.org)  
[Accessed 22 June 2020].
- ADB & WB, 2004. *Electronic Government Procurement-Road map-*, Washington: World Bank.
- Ageshin, E. A., 2011. E-procurement At Work: A Case Study. *Production and Inventory Management Journal*, Volume 42, pp. 48-53.
- Ahimbisibwe, A., 2016. Adoption of E-procurement Technology In Uganda:Migration From The Manual Public Procurement Systems To The Internet. *Journal of Supply Chain Management*, 3(1), pp. 1-23.
- Axinn, W. G. & Pearce, L. D., 2006. *Mixed Method Data Collection Strategies*. Cambridge, Cambridge University Press.
- BANK, W., 2003. *Country Procurement Assessment Report*, Washington, DC.: World Bank.
- Calipinar, H. & Soysal, M., 2012. E-Procurement: A Case Study about the Health Sector in Turkey. *International Journal of Business and Social Science* , III(7), p. 13.
- Chaffey, D., 2009. *E-Business and E-Commerce Management: Strategy, Implemented and Practice..* 4th ed. Harlow: Peason Education Limited.
- Chipiro, D. D., 2009. *The Impact of E-procurement On Strategic Sourcing ,A Case Study: CBZ Bank Limited, Zimbabwe , South Africa: UNISA.*
- Creswell, J. W., 2009. *RESEARCH DESIGN Quantitative,Qualitative, and Mixed Methods Approaches*. 3rd ed. Singapore: SAGE.
- Croom, S. & Brandon, J. A., 2004. *E-procurement: Key issues in E-procurement implementation and operation in the public sector..* Catania Italy, s.n.
- DESA, 2011. *E-Procurement: Towards Transparency and Efficiency in Public Sevice Delivery Report of the Expert Group Meeting*, New York: UNITED NATIONS PUBLICATION.

- Eadie, R., Perea, S. & Heaney, G., 2008. *Identifying & Confirming Drivers & Barriers to E-Procurement In Construction Organizations*, Ulster: School of the Built Environment, University of Ulster.
- Fraser, M., 2014. Quality in Higher Education an International Perspective in Green D.. *What Is Quality In Higher Education?*, 13 May, pp. 101-111.
- GEP, 2019. *Insight drives Innovation*. [Online]  
Available at: <https://www.GEP.com>  
[Accessed 9 June 2021].
- Gravetter, F. & Forzano, L.-A. B., 2011. *Research Methods for the Behavioral Sciences*. 4th ed. New York: Cengage Learning.
- Harvey, L., 2004. *Analytic Quality Glossary*, *Quality Research International*.. [Online]  
Available at: <http://www.qualityresearchinternational.com/glossary/>  
[Accessed 17 March 2020].
- Jongo, J. S. et al., 2019. Mitigation Measures In Dealing with Delays and Cost Overrun in Public Building Projects In Dar-Es-Salaam Tanzania.. *International Journal of Construction Engineering and Management*, 8(3), pp. 81-96.
- Kayugi, M., 2013. *Towards E-Procurement Implementation In Tanzania Construction*, Dar es salaam: Published Undergraduate Degree Dissertation School Of Construction Economics and Management: Ardhi University.
- Kholi , J., 2012. *Red Flags In E-procurement/E-tendering For Public Procurement and Some Remedial Measure..* [Online]  
Available at: <http://www.ippa.org/ippc5/prceedings/part2-6>  
[Accessed 9 December 2019].
- Kidd, A., 2005. *CIPS-Australia*. [Online]  
Available at: [www.cips.org](http://www.cips.org)  
[Accessed 15 January 2020].
- Kothari, C. R., 2004. *Research Methodology Methods and Techniques*. 2nd ed. New Delhi: NEW AGE INTERNATIONAL(P) LIMITED PUBLISHERS.
- Kumar, R., 2011. *Research Methodology a step-by- step guide for beginners*. 3rd ed. Singapore: SAGE Publications.

- Lee, M. J., 2010. An Exploratory Study On The Mature Level Evaluation Of E-Procurement Systems. *Journal of public procurement*, 10(3), pp. 405-427.
- Makoba, N., Nyamagere, G. & Eliufoo, H., 2017. E-procurement risks and mitigation:the case for tanzania constuction companies. *International Journal of Construction Engineering and Management*, 6(4), pp. 180-186.
- McCombes, S., 2019. *SCRIBBR*. [Online]  
Available at: [www.scribbr.com/dissertation/literature-review/](http://www.scribbr.com/dissertation/literature-review/)  
[Accessed 9 January 2020].
- Mena, S., 2018. *SEIDOR MENA*. [Online]  
Available at: [www.seidormena.com/avoid-manual-processes-in-procurement/](http://www.seidormena.com/avoid-manual-processes-in-procurement/)  
[Accessed 24 June 2020].
- MOF, 2013. *Public Procurement Procedures Handbook*. 1st ed. Belmopan: Ministry of Finance & Economic Development.
- Mohamed, H. A., 2019. *Research Population*. [Online]  
Available at: [www.academia.edu](http://www.academia.edu)  
[Accessed 21 January 2020].
- Mose, M. J. & Magutu, 2013. The Critical Success Factors and Challenges in E-pocurement Adoption Among Large Scale Manufacturing Firms In Nairobi Kenya. *European Scientific Journal*, 9(13), pp. 35-401.
- Mrisho, S., 2010. *ADOPTION OF E-PROCUREMENT SYSTEM IN TANZANIA CONSTRUCTION INDUSTRY:PROSPETS AND CHALLENGES*, Dar es salaam: Unpublished Undergraduate Degree Dissertation School of Construction Economics and Management:Ardhi University.
- Murphy, K., 2019. *Purchase Control*. [Online]  
Available at: [www.purchasecontrol.com](http://www.purchasecontrol.com)  
[Accessed 10 february 2020].
- Napoli, C., 2006. *OECD (Organisation for Economic Co-operation and Development)*. [Online]  
Available at: [www.oecd.org>mena>governance](http://www.oecd.org>mena>governance)  
[Accessed 4 February 2020].

- Nawi, M. N., Deraman, R. & Bamgbade, J. A., 2017. E-Procurement In Malaysian Construction Industry: Benefits and Challenges In Implementation. *International Journal Of Supply Chain and Management*, VI(1), pp. 209-213.
- OLAF, 2013. *Addressing The Threat of Fraud & Corruption In Public Procurement*. Greece, Center for the Study of Democracy.
- Price, P. C., 2010. *Research Methods In Psychology*. [Online] Available at: <https://www.opentextbc.ca/researchmethods/chapter/overview-of-survey-research> [Accessed 10 March 2020].
- Puschmann, T. & Alt, R., 2015. Successful Use of E-procurement In Supply Chains. *Supply Chain Management: An International Journal*, 10(2), pp. 122-133.
- Sharifirad, S. M., 2011. The Dimensions Of Learning Organization Questionnaire( DLOQ). A Cross-Cultural Validation In an Iranian Context; *International Journal of Manpower*, 32(6), pp. 661-676.
- Suleiman, M., 2015. Adoption of E-procurement and Value Addition- Tanzania Context. *European Journal of Business and Management*, VII(14), pp. 145-153.
- Sumbana, M., 2004. *The Role Of World Bank Within Public Procurement In South Africa..* Maputo, World Bank.
- Tatsis, V., Mena, C., Van, W. L. & Whicker, L., 2006. E-procurement in the Greek food and drink industry: drivers and impediments. *Purchasing and Supply Management*.
- W2A, 2018. *Wings2Aspirations*. [Online] Available at: <https://medium.com/@wings2aspirationsofficial/challenges-faced-in-traditional-offline-procurement-process-f9cef4be6863> [Accessed 8 March 2020].
- Wiklund , J., 2018. *Tendereasy*. [Online] Available at: [www.tendereasy.com](http://www.tendereasy.com) [Accessed 20 February 2020].

**APPENDICES****APPENDIX A****QUESTIONNAIRE****PART A: INTRODUCTION**

The following questionnaires are to be answered by construction professionals (Architects, quantity surveyors and engineers) and head of PMU or representative of head of PMU from government entities with the purpose of **evaluating the effectiveness of e-procurement in addressing the traditional procurement challenges in construction works procurement.**

I am Qs. Evodia Geofrey Mwaijande currently in my final year of dissertation from Ardhi University School of Architecture Construction Economics and Management pursuing Masters of Science in Construction Economics and Management. As part of the program I am required to write a dissertation to be written and kept by the University for academic purposes and in completion of masters program. The responses to this questionnaire will be kept strictly confidential for the purposes of research.

Please check where appropriate and give brief answers.

**RESPONDENTS INFORMATION**

**Profession:** .....

1. How long have you been in the industry? (Years)

- I. 1-5 {    }
- II. 5-10 {    }
- III. 10-15 {    }
- IV. 15-20 {    }

2. Are you familiar with e-procurement practice? Please tick where appropriate.

- I. YES {    }
- II. NO {    }

3. Is your entity registered in the electronic public procurement system (TANEPS)?

- I. YES {    }
- II. NO {    }

4. Below is the electronic procedure for conducting e-procurement. Please tick where appropriate on how frequent you are involved in the following.

1 = Not at all, 2 =Very rare, 3 = rarely, 4 =frequently, 5= Very frequent

Procedure	1	2	3	4	5
E – advertisement for e-tendering					
a) Online invitation for tenders.					
b) Invitation for tender is published in e-pp portal.					
c) Date of tender notice published in e-pp portal is the start date of tender preparation.					
Uploading tender document for e-tendering					
a) Submission of tenders online before deadline is specified in invitation.					
Clarification and pretender meeting					
a) Tender notice has provided features for online pretender meetings on the specified date and time.					

b) Inquiry for clarification by tenderers and responses to queries is posted online within prescribed time in the tendering document.					
Amendment to tender document					
a) Amendment by PE's on the documents is done at any time before the deadline for tender submissions.					
b) Short message alert is given on the amendments made.					
<b>E- submission</b>					
a) Submission of tenders online (before closing time)					
b) Receive of tenders online before closing time.					
c) Unreadable tenders not being considered.					
Online tender opening					
a) Online tender opening schedule is specified in invitation to tender					
b) Physical presence of tenderers in tender opening					
Formation of evaluation committees					
a) Creation of tender evaluation committee on epp portal					
b) Altering of tenderers data by the evaluation committee					
Approval notification for award and signing of contract					
a) Online award notification to successful tenderer					
b) Contract negotiation online					
c) Contract negotiation offline					
d) Contract between PE and successful tenderer is signed online					
e) Contract between PE and successful tenderer is signed offline					
f) Contract award is published in epp portal					



4. Below are some of the challenges in traditional procurement. To what level has e-procurement addressed the challenges?

1 = Very low, 2 =low, 3 = Average, 4 =High, 5= Very high

<b>CHALLENGES</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Low achievement in Value For Money</b>					
a) Transparency and integrity					
b) Bidder whose bid best meets needs and objectives is selected					
c) Clear evaluation criteria aligned with the needs.					
d) Contractual form appropriate for the objective is selected.					
e) Suitable method of procurement for the purpose is selected.					
f) Clear statement of procurement needs and objectives is developed.					
<b>Time consuming</b>					
a) Decreased repetitive tasks or process.					
b) Decreased process delay (Slowness of approvers/ Suppliers responses).					
c) Clear visibility of overall process.					
d) Effective communication in the process.					
e) Document control (paper work handling challenges).					
f) Error handling in the process.					
<b>Fraud and corruption (Pre-tendering stage)</b>					
a) Suitable tenderers are not disqualified.					
b) Reasonable invitation tender list.					
c) Changing list of preferred suppliers.					
d) Contracts specification various suppliers can meet.					
e) No existence of Personal relationship between staff and suppliers.					
<b>Fraud and corruption (Tendering stage)</b>					
a) No withdrawal of a lower bidder without reason.					
b) Flexible evaluation criteria.					
c) No acceptance of late bids.					
d) No Changes in the specifications after bids.					
e) Proper documentation of contract award process.					

f) No consistent favoring of one firm over the other.					
<b>Fraud and corruption (Post award)</b>					
a) Existence of common valid platform among the people involved.					
b) Existence of common platform where contracts can be recorded and maintained.					
<b>Data management Problem</b>					
a) Less paper work involved.					
b) Simplicity in auditing process.					
c) Little or no paper work is destroyed.					
d) No involvement of different hands of individuals in the process.					
<b>Spend analysis</b>					
a) Clear picture of all transactions.					
<b>Bureaucracy</b>					
a) No existence of biasness & favoritism					
b) Existence of transparency					
c) Existence of records of dealings					
<b>Expensive /Costly</b>					
a) Less labor costs in the process.					
b) Less Paper works involved.					
c) Less transport charges involved.					
d) Less associated stationaries.					

Please give your recommendations on how to build an effective e-procurement system in construction works procurement.

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**APPENDIX B**  
**INTERVIEW GUIDE ON**

**EFFECTIVENESS OF E-PROCUREMENT IN ADDRESSING THE TRADITIONAL  
PROCUREMENT CHALLENGES IN CONSTRUCTION WORKS PROCUREMENT.**

I am Qs. Evodia Geoffrey Mwaijande currently in my final year of dissertation at Ardhi University, School of Architecture Construction Economics and Management pursuing Masters of Science in Construction Economics and Management. As part of the program, I am required to write a dissertation and to be later kept by the University for academic purposes and in completion of masters program. Answers to this interview will be confidential for research purpose only.

**Contact details:**

**Mobile: 0762225050**

**Email: [evjande93@gmail.com](mailto:evjande93@gmail.com)**

Initially the government reviewed the irregularities in the traditional system of procurement, therefore for an effective procurement system, electronic procurement is adopted. The following interview questions will provide enough knowledge on the effectiveness of the system in addressing traditional procurement challenges in construction works procurement.

1. Is the current system of e-procurement fully implemented as per government requirement?

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2. In what stages of procurement does the traditional system still exist? (I.e. Involvement of any kind of manual activity in the process.

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3. What challenges still exist in the e-procurement that were present in the traditional procurement?

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4. What are your recommendations on how to make the e-procurement system more effective in construction works procurement?

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