FACTORS AFFECTING THE ADOPTION OF ELECTRONIC PROCUREMENT
AMONG PUBLIC PROCURING ENTITIES IN TANZANIA.
A case of TANESCO.

By
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A Dissertation Submitted in Partial Fulfillment of the Requirements for the Award
of Masters of supply chain management of the College of Business Education
Dar es Salaam
2020
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AND

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The undersigned certify that he has read and hereby recommend from acceptance by the College of Business education a research report Titled “Factors Affecting Procuring Entities in Adoption of E-Procurement in Tanzania. In partial fulfillment of the requirements for the award of Master in Supply Chain Management of the College of Business Education.

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(Supervisor)

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(Signature)

Date.........................................................
DEDICATION

I dedicate this research to my family, friends and relatives who not only emphasized me to accomplish this report on time, but also, prayed for me throughout the course of undertaking this study. I earnestly feel that without their inspiration, guidance and dedication, I would not be able to pass through the tiring process of this research.
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<tr>
<td>CBE</td>
<td>College of Business Education</td>
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<tr>
<td>EP</td>
<td>Electronic Procurement</td>
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<tr>
<td>E-Procurement</td>
<td>Electronic Procurement</td>
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<tr>
<td>HQ</td>
<td>Head Quarter</td>
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<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
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<td>PPRA</td>
<td>Public Procurement Regulatory Authority</td>
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<td>PSPTB</td>
<td>Procurement and Supplies Professional and Technician Board</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package for Social Science</td>
</tr>
<tr>
<td>TANESCO</td>
<td>Tanzania Electric Supply Company Limited</td>
</tr>
<tr>
<td>UTAUT</td>
<td>Unified Theory of Acceptance and Use of Technology</td>
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ABSTRACT

The main objective of this study was to assess the factors affecting adoption of e-procurement in TANESCO. In line with this general objective, specific objectives were to identify the influence of organizational factors on adoption of e-procurement in TANESCO; to assess the influence of technological factors on adoption of e-procurement in TANESCO and to identify the influence of performance factors on adoption of e-procurement in TANESCO. The research design employed was descriptive designs. The target population was 100 from TANESCO head quarter, submitted questionnaire to the respondents were 80 and received questionnaire were 75, data were analyzed through the descriptive analysis included mean and standard deviation statistics for quantitative data. The finding revealed that the technological factors have significance role on the adoption of E-procurement in the TANESCO. This is due to its applicability and usability of that particular technology in facilitating a procurement task. Such that for this study, e-procurement was perceived to have more preference when e-procurement is a technical implementation that enables the transformation of organizational structures and workplace practices, also found out that performance factors significantly influence the adoption of E-procurement and the study indicates that infrastructure of the organization and procuring entities have less influence on the effective implementation of E-procurement. The recommendations to the TANESCO should take into account organizational, technological and performance factors in adopting e-procurement. Also the policy maker should ensure preparing policy for adopting e-procurement in the organization for full implementation.
CHAPTER ONE
INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction
This section carries the introduction part, background of the study which entails the scope, Statement of the problem, research objectives, research questions and significance of this study.

1.2 Background to the Study
Progressive technology, innovative strategic public procurement and value for money procurement requirements have forced a lot of organizations to further discover opportunities to reduce cost, while protecting all the qualitative features that public, organizations and end users expect from the particular products or services (Mgidlana, 2014). However in order to stay competitive, organizations must improve their activities and features, including successful execution of E-Procurement systems which enables the firms to improve company methods, techniques and hence total supply chain management. Recently many business professionals, consultants, most authorized professional in the country support the more computerized system in the organizations. It is more appropriate now public procurement realize the efficient and effectiveness to the extent that computerization and technology in the public procurement recognize integration (Maria, 2014).

In Tanzania, some scholars including Suleiman (2015); Tegambwage (2017) and Lilian (2015) found that, adoption of E-procurement in Tanzania is still at infant stage where by some initiatives in large part have already been implemented by few private companies especially those owned by foreign investors. Faced with competitive environment and economic pressure, some of the Tanzania public
organizations and companies have implemented E-Procurements systems in order to improve operational efficiency and enhance core competencies.

Florea et al, (2016) however, the adoption of E-Procurement is not a straight forward task and can always result in significant impact to all business divisions in operational, managerial and strategic level of the company. Implementing E-Procurement system project is a difficult and high cost proposition as it places tremendous demands on organization’s time and resources. Many organizations do not achieve success in the implementation of E-Procurement since companies are faced with a number of complexities when implementing these systems such as financial issues, expertise and infrastructures.

The study will generally explore the overall process of E-Procurement on several issues related to best public procuring process using technology say E-Procurement toward cost reduction in public procurement, Also to observe the E-Procurement system if it is compatible and the whole process occurs smoothly and automated enough to simplify the whole process and provides further benefits such as reduced purchasing cycle time, reduced inventory levels and costs, enhanced transparency and accountability in the purchasing process, enhanced budgetary control and low prices due to product standardization and consolidation of buys (Hay, 2013).

Thus, in consideration of the several scholars and literature reviews on the E-Procurement systems, implementations and its perspectives in developing countries, particularly Tanzania, and emergence of awareness of public organizations’ improvement in public procurement and initiatives for overall public organizations performances taking further steps to implement E-Procurement systems in Tanzania,
the study is then focusing on examining the effectiveness of E-Procurement in public procuring entities. The study will include factors that affect end-user of E-procurement. Specifically, the study aims to identify the effect of competencies on E-procurement, to determine the effect of budget needed on E-Procurement and to examine the effect of infrastructures on E-Procurement at TANESCO.

1.3 Statement of the Problem

E-Procurement being the latest public procurement and supply chain integrative and strategic tool, it has become so popular and various developed countries have adopted it so as to highly and critically advance procurement undertakings, supply chain and manufacturing activities for organizations. Despite the fact that most of public organizations in Tanzania have adopted E-Procurement, and still some procurement functional advancement are dramatically changing (Chung, 2007). Regardless of applying E-Procurement public organizations and companies in Tanzania today still face the challenge of increasing competition, efficiency, effectiveness and hence poor value for money public procurement which result into non-value adding public procuring activities through the service offered (Malekia, 2016).

Various steps have been undertaken by the government including the strengthening of sectors responsible for effective public procurement in the country namely: PSPTB, PPRA and Ministry of Finance. Again the punishment against procurement officers and government officials people who indicates some intent for procurement fraudulent activities, some are fired, brought to court and cut off from their working positions. Recently, PPRA have also established electronic procurement system to all public organizations and it is expected to be effective in 2020.
The effective adoption of E-Procurement can be as important as it provides the environment for value for money procurement. It is significant to assure effective public procurement as it enhances the services to citizens, to have a smoother workflow, and to provide a better governance and transparency. Among the reasons for government to adopt E-Procurement systems is because it helps in reshaping government organizations as they promise to solve the challenges posed by portfolios of evidently disconnected and uncoordinated applications (Nkonge, 2014).

On top of that some literatures have been carried out concerning E-Procurement effectiveness and implementation in Tanzania perspective compared to western countries, some of the studies were carried out by Nziku (2019); Malekia (2009); Makoba et al (2017); Rasheli (2016) conducted studies on the factors affecting adoption of E-procurement in private sectors, Ndibalema (2014) carried out study on investigation of end-users acceptance of enterprise resource planning systems at the post implementation phase in Tanzania.

Lack of abundant and detailed elaborated research and findings on the aspect of e-procurement in Tanzanian context has resulted the government to be late to adopt e-procurement and enjoy the fruits of this new technology to the public sector, how TOE (Technological, Organizational and Environmental) framework could be applicable to address the adoption of this new technology become another challenge for most Tanzania especially public institutions who play a major role of providing the social service to the citizens of Tanzania. This study therefore focuses at assessing the factors affecting the Public Procuring entities’s in adoption of E-Procurement. A case of HQ TANESCO in Dar es Tanzania.
1.4 Research Objectives

1.4.1 General Objective

The general objective of this study is to assess the factors affecting adoption of E-Procurement in public procuring entities.

1.4.2 Specific Objectives

The study will be guided by the following specific objectives:

i) To identify the influence of organizational factors on adoption of e-procurement in TANESCO

ii) To assess the influence of technological factors on adoption of e-procurement in TANESCO

iii) To identify the influence of performance factors on adoption of e-procurement in TANESCO

1.5 Research Questions

i) How organizational factor influence adoption of e-procurement in TANESCO?

ii) What are the influences of technological factors on adoption of e-procurement in TANESCO?

iii) How performance factors influence adoption of e-procurement in TANESCO?

1.6 Significance of the Study

The study will be helpful to public sectors and policy makers. It will provide some concepts which is discussed in the study on the applicability of E-procurement. Since among the application of E-procurement is to ensure effectiveness, efficiency and
transparency of Public procurement systems to comply with procurement regulations. Therefore, the public sectors will have to move adopt and implement the fast and improved E-procurement system.

The study findings can be helpful in strengthening the skills and the way the as public procurement is undertaken. Public procuring sector will have to recognize that they are involved in a major function of the national economy in which large amount of the government money is spent through procuring goods, works and services. So are required to ensure and stabilize effective and legal procurement skills, as it is explained in this study that among the strategy to apply E-procurement systems and stay away from paper based style of procurement.

Based on the understanding obtained from the study policy recommendations on how successful adoption of E-procurement can be achieved in public organizations. More specifically, the study will establish the advantages of applying technology through E-procurement toward the improvement of various services and functions. More than that the study will provide useful information to other researchers, and other stakeholders spending public funds on how to take working measures to minimize factors hinders the adoption of E-procurement. Also, the findings through this study will contribute to the knowledge base that is helpful for further researcher scholars and professionals of this field and for future references.

1.7 Scope of the Study

This study will be conducted in Dar es Salaam at TANESCO Head Quarter, located in the western part of Tanzania along Dar es Salaam city. TANESCO adopted E-Procurement for some times until now. This will help validity and reliability of data
since the respondents have been applying E-Procurement, so they are familiar with E-Procurement, Public procurement and supply chain, therefore questionnaires and interviews are expected to bring the most required information concerning the subject matter, which is the effective implementation of E-Procurement and its salient features.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The objective of this chapter is to describe the theoretical, empirical literature, conceptual framework and research gape on the factors affecting procuring entities’ adoption of E-procurement in Tanzania.

2.2 Definitions of Concepts and Terms

This section defines key terms used in the study; these terms are E-procurement, procurement processes, supply chain in Public Procurement and other E-procurement public procurement perspectives.

2.2.1 E-Procurement

Suleiman (2015) defined E-procurement as the delivery of goods and services, information or payment over computer networks or by any other electronic means. PPA (2016) e-procurement is the frame work for inter organizational collaboration. Electronic procurement denotes the all-in-one application of information and communication technology from its point of origin to its ends point along the entire value change of procuring processes conducted electronically and designed to enable the accomplishment of organization goal.

Kayungi (2013) defined E-procurement from a business perspective, as the application of technology towards the automation of business transactions and work flow. From a service perspective e-procurement is a tool that address the desire of firm, consumers and management to cut service costs while increasing the speed of
services delivery. Generally, E-procurement provides the capability of buying and selling products and information on the internet and other online services.

E-procurement according to this study can be explained as simplified and errors free computerized system of acquiring materials. It is expected to reduce processing time and increase efficiency with assured record management. It can contain elements like; E-ordering, E-sourcing and E-tendering.

2.2.2 Public Procurement

Ali et al (2017) defined public procurement as an acquisition, whether under formal contract or otherwise, of works. Supplies and services by public bodies using publicly sourced finances. It involves the purchasing, hiring or obtaining by any contractual means of publicly needed goods, construction works and services by the public sector. It also includes situations in which public funds are mobilized to procure works, goods and services even if the government does not get directly involved (PPP,2012).

This operationally, can be defined as the procurement for the people, as it reflects the citizens or for government which function on behalf of the citizens or purchasing is about obtaining a work, product or solutions at the best value compared to the required top quality using public funds.

2.3 Theoretical Literature Review

This section provides the theoretical perspectives related to the topic under study. This study adopted various theories and concepts on factors affecting procuring entities’ in adoption of E-procurement, it includes organizational factors,
environmental factors and technological factors, and many aspects for which all of them constitute the scope of the study as explained below:

2.3.1 Technology Adoption Theory

To be able to improve public services, various reforms in public sectors have been made, one being E-procurement (EP). However, the adoption also known as acceptance theory (Venkatesh, 2012). The theory holds that in the adaptation of anything is mostly accompanied with a number of obstacles. The theory of adaptation believes that emerging technologies cannot improve organizational effectiveness and performance if the change has not been accepted by the consumer. This means that it is very absurd to introduce any change in an organization without involving the clients who are the end users of the product.

Thus, the theory therefore, has provided a new insight that will be effectively in implement E-procurement. This theory therefore is very useful in explaining the E-procurement implementation in procurement activities. According to this theory therefore, the variables obtained are organizational factors, Technological factors and performance factors.

2.1.2 Organizational Adoption Theories

Organizational adoption decisions were concerned with not only the adopted innovation but also the adopting organization. The factor model suggests that when making adoption decisions, an organization needs to straddle simultaneously innovation and organization dimensions because the equality of technological superiority and fit with the adopting organization was not automatically guaranteed. Structured members’ attitudes toward technology and decision-making practice be
important organizational characteristics of adoption decision making (Frambach, 1999).

This theory is very important in this study as it explains to the organization the way to adopt the E-procurement in the organization as much as the staff’s attitude must be very important toward the technology adoption.

2.2.3 Diffusion of innovation theory

The Diffusion of Innovation Theory was first discussed historically in 1903 by the French sociologist Gabriel Tarde (Toews, 2003) who designed the original S-shaped diffusion curve, followed by Ryan and Gross (1943) who introduced the adopter categories that were later used in the current theory popularized by Everett Rogers. Katz (1957) the Diffusion of Innovation theory is often viewed as a valuable revolution model for guiding technological innovation where the innovation itself is modified and presented in ways that meet the needs across all levels of adopters. It also stresses the importance of communication and peer networking within the adoption process.

The Diffusion of innovation theory is a prevailing theory in the technological adoption spectrum which has been extensively researched by past extant scholars (Tsai et al., 2012). Diffusion is defined as the rate at which innovation is adopted and communicated to the individual members of units over a certain period and innovation is defined as the new ideas, practices or object that organization or individual perceived as new which have never been used or is new inventions (Kaminski, 2011).
In relation to a study where there was look on the factors for adoption e-procurement as well as its perceived benefit hence under the diffusion of innovation theory divided five characteristics for adopters of any technology, these act as factors as so far including the benefits of e-procurement. That are relative advantages, compatibility, complexity, trial ability and observability (Raynard, 2017; Wallenburg et al., 2019).

Based on Rogers (1995) assumptions, any new technologies that organization or individual unit intent to adopt is equivalent to innovation which needs to be embedded with diffusion characteristics to be successful. Rogers (1995) adds that the adopters of new technology can be categorized as innovators of the technology, early adopters of the technology, early majority of the technology, late majority of the technology, and laggard of the technology. Knowing the categories of innovators is crucial for the effective implementation of technology diffusion.

2.3.2 Factors which hinder application of E-Procurement

E-procurement is affected by some of the barriers which can be broadly categorized into three; Technological, Organizational and Environmental. (Galloway et al., 2003) as explained below as Follows: -

Technology always becomes a barrier if it is inadequate and insufficient Furthermore, this situation become worse if there is no skilled staff to support or their information system knowledge is not up to the mark.

Organization’s Internal Culture if it is not technological welcoming, which means that there is no top management or employees’ support, then it can be the biggest hurdle as this is the foot step in adoption of e-procurement. Lack of integration with business partners or suppliers can also resist adoption of e-procurement system.
Many researchers have highlighted that e-procurement benefits have not been fully delivered, and the main reason identified for this is the lack of tangible results is mainly because of the traditional resistance to IT-based process innovation (Daud, et al., 2017).

Cost becomes a big issue whenever organization is heading to change; especially technological wise, as the implementation cost is too high and sometimes the amount of benefits accepted do not justify the amount of cost.

External environment: has to be supportive from all sides if company wants the adoption to be success. External environment includes completion intensity, partner/supplier readiness and government regulatory and legal boundaries. Security of transaction: Security is a major concern when working on the internet (Edie et al, 2007). Data transmitted on it can be garbled and reassemble wrongly at the other end, or can display only partially because of incompatible software (Fernandez et al., 2017).

2.4 Empirical Literature Review

This section presents empirical studies related to the topic under Study. The empirical studies are presented in the context of E-procurement in Public Procurement, E-procurement effectiveness and organizational performance perspectives. Empirical findings are presented according to scope namely foreign studies and local studies.

Daud et al., (2013) the study found out that among the variables namely perceived usefulness, perceived credibility and awareness had significant influence on adopting ERP and E-procurement in the country. Zunk et al., (2014) ease to Use the capacities provided by E-procurement, as well as Project implementation Success and User
Satisfaction of an E-procurement initiative are key factors influencing the overall success of an E-procurement implementation. However, Change Management seems to be not as critical as the other factors. The crucial role of User Satisfaction as a mediating variable is also corroborated. The success of an E-procurement implementation is measured in terms of improvements in business performance.

Mgidlana, (2014) barriers which are common are internal factors and external factors in an enterprise and cannot be overlooked while implementing E-procurement. It shows that the barriers of E-procurement are mostly observed in large and in SMEs. The reasons for occurring the barriers while implementing E-procurement are because of many things, the barriers which are commonly observed are- huge capital incurred for software, poor planning or poor management, lack of perfection, lack of training and predetermined corporate goals, lack of good vendors, lack of risk assessment, lack of approach, lack of data models (support), lack of E-procurement systems’ benefits, lack of system performance, lack of hierarchical attribute structure and lack of management support.

Ibem et al., (2016) the success of E-procurement systems depends on when it is measured and that success at one point in time may only be loosely related to success at another point in time. Companies experience problems at all phases of the E-procurement system life cycle and many of the problems experienced in later phases originated earlier but remained unnoticed or uncorrected. These findings suggest that researchers and companies can do well to adopt broad definitions and multiple measures of success and pay particular attention to the early identification and correction of problems.
The study concludes and recommends private institutions to develop Web Service-Based, domain-specific application framework that will enable private companies to quickly and easily build and deploy robust, secure, scalable, manageable, interoperable, portable and lawful ERP. Applications using a good e-procurement software system as it would help them greatly reduce the time and effort required to complete purchasing transactions by eliminating traditional paper chain of requisitions, approvals, receiving, payment reconciliation and reduces face to face interaction hence lower risk of corruption.

Ndibalema (2014) three mid-sized public organizations in Tanzania who are at the post-implementation phase of E-procurement systems implementation were randomly selected and the 70 end-users in these organizations were administered with a questionnaire based on the UTAUT model. The model also assisted in generating the study hypothesis from its main dimensions. The hypotheses were then tested by regression analysis of the data generated by the questionnaire and the relationships among the study variables were established. The study shows that performance expectancy, effort expectancy, social issues and facilitating condition affect end-user acceptance of E-procurement systems. The major conclusion of the study is that all the four dimensions (Performance expectation, Effort expectation, Social influence and Facilitating conditions) of the UTAUT model are indeed factors that influenced in varied magnitude the end-user acceptance of E-procurement systems in mid-size public organizations in Tanzania, thus it is recommended that organization’s need to pay close attention to these dimensions in order to improve end-user E-procurement acceptance.
Tsuma et al (2017) pre-implementation of an organization is complex in nature and characterized by multi-criteria decision making problem with parameters that can be expressed in linguistic values which are vague. The status of the E-procurement pre-implantation of an organization is determined to support a more accurate and scientific decision making.

Makoba et al (2017) the most critical factors found to be more important during the implementation are top management support, technological infrastructure, effective communication, Process redesign/Reengineering, clear goals and objectives, project management, change management, Project team work and composition, User training and user involvement. The study also managed to find out the implementation approach used by SBL in implementing SAP system, the implementation of SAP passed through different phases before arriving to the go live stage. Preparation and Phase five going live and Support.

2.5 Research Gap

From the literatures, there is a gap in the public procurement series of activities that involve E-procurement to transform input (procurement functions) into an output which as to reflect value for money (goods, works or /and services) as the stakeholders are not satisfied with the functions discharged by the public procurement officers. From the study the literature gap is limited in exploring E-procurement applications and advantageous in public procurement process especially in developing countries.
2.6 Conceptual Framework

Conceptual framework is the presentation of subject matter in an operational form which can be either drawn or narrated to implicate causal relationship among variables. Accordingly, a conceptual framework gives more elaborations for further details which cannot be deeply described by the literature reviews or the study in general (Babaian et al., 2018). The study involve three independent variables related to theories namely technological adoption theory, organization adoption theory and diffusion of innovation theory. Organizational Factors, Technological Factors and Performance factors whereas independent variable is adoption of E-procurement by public organization. The relationship is portrayed below as follow:

![Figure 1: Conceptual Frame Model](image)

Source: Literature Reviews (2019)

2.7 Operationalization of Variables

Basing on the conceptual framework above, three hypotheses are developed for testing. These hypotheses have the same weight and focused on the objectives of the study. From the conceptual framework above it has been noted that when the following factors apply then there is a possibility of effective E-procurement
procedures and implementations to be molded to reflect efficiency and effectiveness hence value for money in procurement activities public procuring entities.

**Technological Factors (T):** The technology context represents the pool of technologies available to a firm for adoption. These can be both the technologies available on the market and the firms’ current equipment (Scupola, 2009). The most vital elements will influence organization in Tanzania to adopt e-procurement are Perceived benefits, Technological infrastructures, Technological Complexity, and Technological Compatibility.

**Organizational Factors:** Include *organization Size:* Firm size is one of the most influential factors of internet adoption among sectors (Leu *et al*, 2017). According to Uliveira *et al*, (2010) three major arguments support the positive role of firm size in determining IT adoption: the benefits of the new IT, the greater availability of funds and the quicker capture of economies of scale. Thus, larger firms tend to adopt technology at higher levels, while smaller firms are inclined to adopt technology at lower levels (Cragg *et al*, 2009). *Management Knowledge,* the technological knowledge of the owner can influence the adoption of e-commerce (Dubelaar, *et al*, 2005) On another side of the coin Lack of technological knowledge on the owner’s part would inhibit the adoption of e-procurement (Almoawi, 2011).

*Management Attitudes,* according to Sarkar, (2009) argue that the top management support facilitated the adoption and implementation of information systems. Almoawi *et al* (2011) add that the need for commitment and support from the owners or top management during the process of assessment of the innovation or technology is of utmost importance. This commitment and support ensures that there is an
obligation within the resources, which in turn will create conducive environment within the firm for the adoption process of the technology.

*User Involvement,* user involvement also reduced resistance to changes and increases user acceptance for the new system (Sarkar, 2009). According to Suleiman, (2013), the resistance to change could occur in different contexts, it might appear due to asymmetry of information concerning the perceived usefulness of new technology, it might occur due to uncertainty of expected technology but also it may occur due to opportunistic of user. For instance in Tanzania there is a critical corrupt practice where by some of supplier(s) offer 10% for a return of tender, so if user will accept this new technology there is possibility to reduce that practice.

**Performance Factors:** Is reflected in this study because it’s the fundamental aim of procuring entities to perfect the procurement performance which may lead to value for money and general organization performance. This includes competent PMU through ability and competence to enforce E-procurement and other competitive strategies has key roles to overall organization performance. PMU must be focused on value for money procurement with transparency and accountability. PMU must be competent also in procedures, structures and processes that affect them like tendering procedures and any procurement project, and hence value for money in procurement activities.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
The chapter presents the methodology and procedures used for data collection. It describes the research design, the area of the study, and the population of the study, sample and sampling technique and sample size, data collection methods, reliability and validity of data, data analysis method and ethics in research process.

3.1 Research Design
This research adopted descriptive research design. Descriptive research method was employed in this study in order to describe, observe, and document occurring phenomenon where frequency, mean and standard deviation used for looking statistical significant of the variable construct. For the case of this study data were measured through five point rickets scale for dependent and independent variables to obtain results and evidence on the use and implementation of enterprise resource planning.

3.2 Area of the study
The study conducted at TANESCO head quarter, located at Dar-es-saalam Tanzania. TANESCO is the oldest corporation in Tanzania owned by the Government which serves the cosmopolitan population of more than 40 million peoples in Tanzania. In additional to that, TANESCO selected for the aim to look on factors affecting the adoption of e-procurement.
3.3 Target population
The targeted population was 100 numbers of respondents from Procurement department, HRM department, IT department, financial department and other departments. The nature of this study was to assess the factors affecting adoption of electronic procurement in Tanzania.

3.4 Sampling technique
This study employed purposive sampling technique in which the respondents who have knowledge concerning the e-procurement adoption were selected from various departments.

3.4.1 Purposive Sampling
Under this technique the researcher succeeded to select 80 respondents in respect with knowledge and also gave the questionnaires where 75 only were administered. Purposive sampling is a non-probability sampling technique in which only selected sample based on experienced on knowledge on specific area are involved in the research study (Adam et al, 2008). It is an appropriate method of sampling for study which required knowledgeable and experienced respondents like training and development in order to get in-depth, adequate and valid information.

3.5 Sampling Size
In this study, the sample size of 80 representatives was obtained as stipulated by Yamane. The sample size involved using the systematic formulae for calculating sample size proposed by Yamane (1973). The sample size should neither be excessively large nor too small; it should be optimum which fulfills the requirement of efficiency, representativeness, reliability and flexibility.
\[ n = \frac{N}{1+Ne^2} \]

Where:

N= Target population

n =Sample size

e=Precision level

Using the confidence interval of 95%, statistically the tolerated sampling error was 0.5. Therefore, the sample size was as follow:

\[ n = \frac{100}{1+100(0.05)^2} \]

\[ n = 80 \]

**Table 1 : Sample as Drawn From the Entire Population**

<table>
<thead>
<tr>
<th>Category</th>
<th>Population</th>
<th>Formula</th>
<th>Sample</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOD procurement</td>
<td>1</td>
<td>80/100*1</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>HOD, human resource</td>
<td>1</td>
<td>80/100*1</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>HOD, IT</td>
<td>1</td>
<td>80/100*1</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>HOD, Finance</td>
<td>1</td>
<td>80/100*1</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Employees,</td>
<td>40</td>
<td>80/100*40</td>
<td>32</td>
<td>40%</td>
</tr>
<tr>
<td>Employees, human</td>
<td>18</td>
<td>80/100*18</td>
<td>14</td>
<td>18%</td>
</tr>
<tr>
<td>Employees, IT</td>
<td>18</td>
<td>80/100*18</td>
<td>14</td>
<td>18%</td>
</tr>
<tr>
<td>Employees, finance</td>
<td>20</td>
<td>80/100*20</td>
<td>16</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td></td>
<td><strong>80</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Research Field (2019)
3.6 Types of Data and Data Collection Methods

3.6.1 Primary Data

In this study the researcher retrieved the primary data as source of data by distributing 80 questionnaires where 75 filled questioners which are equal to 93.75% were returned from that researcher obtained reliable information in line with specific objectives of the study and research questions. Primary data refers to the first-hand data of a specific information collected in the study area using the questionnaire instrument (Saunders, 2011). In this study, the researcher collected and used the primary data for the research analysis. This is because the primary data is the only option if adequate and valid secondary data is not available. The research employed Questionnaire as the instrument for collection of primary data. This is because the primary data is the only option if adequate and valid secondary data is not available. Even though e-procurement is an old practice but the secondary data concerning the problem is still limited in Tanzania. The research employed questionnaire as the instrument for the collection of primary data.

3.6.2 Secondary Data

For the purpose of this study, secondary data were used only to support the literature part. Also, the secondary sources used to compare the results with this study and build the discussion part of the report. The study gathered information from articles, published and unpublished materials, magazines, statistical reports and catalogue that provided insight on public procurements and technological applications. Especially on the factors affecting procuring entities’ in adoption of E-procurement in Tanzania.
3.7 Data Collection Methods

3.7.1 Questionnaire

The response level in this method of data collection was 93.75% whereas 75 out of 80 questionnaires were collected for data analysis. The researcher used self-administered questionnaire to respondents who cannot be easy to reach in which the researcher fill in the questionnaire by asking a series of question to respondents. Also the researcher was being able to leave the questionnaire to the respondents so that they can fill in absence. The questionnaire was written in a very simple language so that the respondents can understand easily (Bryman et al, 2015).

In this study, the questionnaire was designed in conjecture with past literature using a Likert scale of 1-5 format (1 stand for strongly disagree, two stands for disagree, three stands for neither disagree nor agree, 4-strongly agree, and five-stands for strongly agree). After design the questionnaire, the researcher distributes the questionnaire to the practitioners in the field using the pilot study method for their opinions to increase the chance of getting reliable, valid and accurate information. A pilot study is a prior study conducted to assess the content of the questionnaires and remove the unambiguous questions or any miss lead questions that would affect the validity and Reliability of the information collected.

3.8 Data Analysis

The data was analyzed using Statistical Package for Social Sciences (SPSS) version 25 descriptively, where frequency retrieved for demographic characteristics such as gender where male equal to 54.7% whom dominant the study, age of 31-40 of respondents whom dominant the study this implied that most of responded have experience equal to 46.7%, education masters level equal to 40% dominant the study,
this complied to reliably and validity of the data. Also the main variables were analyzed descriptively where mean and standard deviation showed statistical significant.

Objective one analyzed descriptively where mean and standard deviation showed statistical significant between organizational factors on adoption of e-procurement in TANESCO, objective two analyzed descriptively where mean and standard deviation showed statistical significant between technological factors on adoption of e-procurement in TANESCO and objective three analyzed descriptively where mean and standard deviation showed statistical significant between performance factors on adoption of e-procurement in TANESCO

3.10 Reliability and Validity of Data

Validity refers to the efficacy or success of instrument in measuring the specific property which it intends to measure; on the other hand reliability is the ability of measuring instrument to give accurate and consistent result (Krishna swami, 2006).

3.10.1 Reliability

In this research report the researcher ensured reliability by conducting piloting study before the collection of information and the same question after being piloted in case there is need of resetting and clarification. Kothari (2004) argues that Reliability has to do with the accuracy and precision of a measurement procedure. Reliability is the ability of measuring instrument to give accurate and consistent result (Krishna swami, 2006).
3.10.2 Validity
The researcher ensured that there is matching between research objectives and actual observations, this was done through administering questions through questionnaires that match with the research objectives. Also researcher used peer review which means deliver sample of the questionnaires to the person who is professional and experienced with the research to see whether questionnaires are suitable before giving to the respondents. Lastly researcher undertaken pilot test before distributing all questionnaires to all respondents this helped researcher to see whether respondents had understood questions which have been given in the questionnaire.

3.11 Limitations and Delimitation of the Study

**Accessibility**, accessibility to people and information on time, this study was depending on having access to people, organizations, data, or documents and, for whatever reason, if access is limited in some way or another, the study could lost the scope and focus. Also, some officials especially high in ranks are also not easy to reach them. Mostly, the researcher also wants to receive reliable information from all level of staffs, however, high in ranks were highly recommended to share their information. The researcher attempted to make earlier communication to inform them, also the researcher asked for their mobile phone so that to enable interview through phone when they were not around.

**Financial Constraints**, since the research report involves some expenses due to transport and even incurring some expenses. The researcher was position herself in savings and prepares a sufficient budget that enables the proper data collection in the field.
3.12 Research Ethics

Research ethics is a standard and principles that guide researchers in the research process (Malhotra, 2010). In adherence to the research ethics, the researcher followed the formal process in all stages of this research. First, the researcher asked the approval for data collection from the major supervisor and CBE directorate of post graduate studies. Second, the researcher availed the management of TANESCO for request to conduct this study with an approval letter from CBE. The researcher requested the management of TANESCO to issue the letter for data collection at their respective units. Never the less, the researcher assured all respondents about the confidentiality of the study before approach the respondents for data collection. This gave the respondents adequate assurance to participate in this study. The researcher believed that this rigorous approach ensured the ethical consideration in this study.
CHAPTER FOUR

PRESENTATION OF FINDINGS

4.1 Introduction

This chapter presents the findings of this study following the specific objectives described in chapter on. The chapter starts with preliminary data analysis, presentation of sample characteristics of the respondents, including the gender, education, experience, and working post.

4.2 Response Analysis

The researcher has managed to collect 75 completed questionnaires which make a response rate of 93.75% as shown in the pie chart depicted in figure 4.1. About five questionnaires equivalent to 6.25% was not returned to the researcher on time and rejected for further analysis. However, a response Babbie (2004), who pointed out that, in social science studies, a response rate of 50 is adequate for study while a response rate of 60% is goods and response rate from 70% is excellent. The high response rate in this study was a result of researcher commitment to making follow up and untestable of the respondents at TANESCO.
4.3 Distribution of the Respondents ‘Attributes

This section presents the characteristics of the sample involved in this study including the age of the respondents, gender of the respondents, education level of the respondents, working posts of the respondents and working experience of the respondents. The demographic information was included to get a picture on the respondents involved in this study. The study prior to findings and analysis first assessed the attributes of respondents which were based on demographic attributes such as HOD procurement, human resource, IT, Finance and other departments. Other respondents include Employees procurement, Employees, human resource, Employees IT and Employees finance.

4.3.1 Gender of the Respondents

Table 4-1 shows the gender of the respondents used in this study. The purpose of analyzing the gender of the respondents was to assess the gender parity during the data collection process. The results of this study indicate that 41 respondents equal to 54.7% were male, while 34 respondents equal to 45.3% were female. The results of
this study imply that male respondents dominate in this study compare to female respondents. It is very often that male is the one who dominates the studies compared to female participants.

Table 2: Gender of Respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>41</td>
<td>54.7</td>
<td>54.7</td>
</tr>
<tr>
<td>Female</td>
<td>34</td>
<td>45.3</td>
<td>45.3</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field Data (2020)

4.3.2 Age of the Respondents

Table 4-2 present the age group of the respondents involved in this study. The results show that three 13 respondents equivalent to 17.3 % were below 30 years' age, 35 respondents equal to 46.7% were between the age of 31 - 40 years, while 27 respondents equal to 36.0% were in the age group between 41 years and 50 years old. The findings in this study show that more than 50% of the respondents involved in this study were below 40 years old. This implies that TANESCO has energetic young employees compared to age employees.

Table 3: Age of respondents

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;30 years</td>
<td>13</td>
<td>17.3</td>
<td>17.3</td>
</tr>
<tr>
<td>31 - 40 years</td>
<td>35</td>
<td>46.7</td>
<td>46.7</td>
</tr>
<tr>
<td>41-50 years</td>
<td>27</td>
<td>36.0</td>
<td>36.0</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field Data (2020)
4.4.3 Education Level

Table 4-3 stipulates the education level of the respondents involved in the data collection process. The results indicate that 16 respondents equal to 21.3% hold certificate/diploma, 24 respondents equivalent to 32% hold bachelor, and 30 respondents equal to 40% hold master level while 5 respondents equal to 6.7% hold other level of education including technical and professional education. These findings imply that the research data was cultivated from well-equipped and knowledgeable respondents.

Table 4: The education level of respondents

<table>
<thead>
<tr>
<th>Education</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate/Diploma</td>
<td>16</td>
<td>21.3</td>
<td>21.3</td>
</tr>
<tr>
<td>Bachelor</td>
<td>24</td>
<td>32.0</td>
<td>32.0</td>
</tr>
<tr>
<td>Master</td>
<td>30</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>6.7</td>
<td>6.7</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field Data (2020)

4.4.4 Work Experience

This part was intended to evaluate the working experience of the respondents involved in this study. The findings indicate that majority of the respondents equal to 46.7% had experience between 6 years to 10 years while 29.3% of the respondents had experienced between 11 years to 15 years, 13.3% of the respondents had experience below five years while 10.7% of the respondents had experienced between 16 years and 20 years of experience at TANESCO. The results imply that the data was extracted from matured and experienced respondents. Table 4-4 shows
the descriptive analysis of the working experiences of respondents involved in this study.

Table 5: Work experience of respondents

<table>
<thead>
<tr>
<th>Experience</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 years</td>
<td>10</td>
<td>13.3</td>
<td>13.3</td>
</tr>
<tr>
<td>6-10 years</td>
<td>35</td>
<td>46.7</td>
<td>46.7</td>
</tr>
<tr>
<td>11-15 years</td>
<td>22</td>
<td>29.3</td>
<td>29.3</td>
</tr>
<tr>
<td>16-20 years</td>
<td>8</td>
<td>10.7</td>
<td>10.7</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Source:** Field Data (2020)

### 4.3 Major Findings

This section presents finding as per general objective of the study to address the subject matter, on the assessment of the factors affecting procurement entities in adoption of E-procurement in Tanzania. Taking TANESCO as the case study, the section is discussed in techniques namely descriptive statistics. Whereby, mean and standard deviation are computed. The higher the mean the higher the possibility of occurrence. Moreover, the standard deviation of all the variables if they are less than 3 indicating that respondents’ opinions were basically consistent (Mbura, 2007). Findings implies that, adoption of E-procurement in public procuring entities is impacted by some factors which may facilitate the effective public procurement functions in the country. Findings and discussion are discussed below as follows:-
4.3.1 Objective1: The Influence of Organizational Factors on Adoption of E-Procurement

The first objective of the study was to identify how organization can influence the adoption of E-procurement in the public procuring entities. Therefore, perceived organizational factors on adoption of E-procurement brought to the discussion with the respondents, as the way forward or hindrances to influence efficient and effective public procurement performance in public institutions at TANESCO. The respondents were then asked to indicate by circling the number that accurately reflects the extent of organizational factor on the adoption of E-procurement toward the public procurement performance. The suggestions were arranged on levels namely 1= Disagree, 2= Moderate Extent, 3= Agree, 4= Strong Agree.

Table 6: Organizational Factors in Adoption of E-Procurement

<table>
<thead>
<tr>
<th>Factors</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>An expanded and size of organization is a factor for particular organization to adopt E-procurement</td>
<td>75</td>
<td>2.82</td>
<td>0.892</td>
</tr>
<tr>
<td>Management skills and competence of the organization lead to adoption for E-procurement</td>
<td>75</td>
<td>3.183</td>
<td>0.779</td>
</tr>
<tr>
<td>Management attitude and culture of the organization lead to adoption of E-procurement</td>
<td>75</td>
<td>2.48</td>
<td>3.323</td>
</tr>
<tr>
<td>Participation of organization’s staff on the technology, influence the adoption of E-procurement</td>
<td>75</td>
<td>2.54</td>
<td>3.115</td>
</tr>
<tr>
<td>Need for competencies lead the adoption of E-procurement</td>
<td>75</td>
<td>2.45</td>
<td>0.796</td>
</tr>
<tr>
<td>Fitness of Existing Information Technology System on Public Procurement</td>
<td>75</td>
<td>1.749</td>
<td>0.432</td>
</tr>
</tbody>
</table>
Factors | N | Mean | Std. Deviation
--- | --- | --- | ---
An expanded and size of organization is a factor for particular organization to adopt E-procurement | 75 | 2.82 | 0.892
Management skills and competence of the organization lead to adoption for E-procurement | 75 | 3.183 | 0.779
Management attitude and culture of the organization lead to adoption of E-procurement | 75 | 2.48 | 3.323
Participation of organization’s staff on the technology, influence the adoption of E-procurement | 75 | 2.54 | 3.115
Need for competencies lead the adoption of E-procurement | 75 | 2.45 | 0.796
Fitness of Existing Information Technology System on Public Procurement | 75 | 1.749 | 0.432
Valid N (listwise) | 75 | | |

Source: Research Findings (2020)

From the findings above on table 4-5, the study shows that organizational factors have less influence on the adoption of the E-procurement in public procuring entities.

Whereas, many respondents less agreed on organizational factors to be the influence of E-procurement adoption. Many respondents less agreed on factors such as (an expanded and size of organization, Management attitude and culture, Participation of organization’s staff, Need for competencies and Fitness of existing Information Technology as determinants factors for adopting E-procurement technology in the organization). Expressed by parameters respectively such as (Mean = 2.82, 2.48, 2.54, 2.45 and 1.749, S.D = 0.892, 3.323, 3.115, 0.796 and 0.432).

While, few respondents agreed on management skills and competence of the organization lead to adoption for E-procurement (Mean = 3.183, S.D = 0.779).
Generally, the study shows that many public entities do not emphasize the adoption and application of E-procurement, whereby organizational size, culture and staff don’t have any motives or way forward to emphasize the use of E-procurement in the organizations. This can be identified by when most of public entities do not acknowledge the procurement activity as the value adding function in the organizations. Ideally, the study postulated that organizations don’t have conducive facilities which allow the adoption of E-procurement for effective implementation of E-procurement, Such that the poor adoption and implementation of E-procurement result due to those poor arranged systems and management styles that do not enable the public organization at any time to adopt the changing technology and systems. The study further stipulate the need of the structured environment of organizations toward the improved procurement activity using internet, automated machines, systems and computer based design, and hence E-procurement system.

4.3.2 Objective2: The Technological Factors in Adoption of E-Procurement

The study wanted to identify the role of technology factors on the adoption of E-procurement in public entities. Due to advancement and globalization, the public entities may find ways to facilitate procurement functions. Thus, the findings bellow are presented based on the collected responses from the respondents, by circling the number that accurately reflects the level of technological factors influence on public procurement performance. The suggestions were arranged on levels namely 1= Disagree, 2= Moderate Extent, 3= Agree, 4= Strong Agree.
Table 7: Technological Factors on E-procurement

<table>
<thead>
<tr>
<th>Factors</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived benefit and advantages of using Technology to improve functions and procurement functions lead to adoption of E-procurement technology</td>
<td>75</td>
<td>4.82</td>
<td>0.912</td>
</tr>
<tr>
<td>Technological infrastructure and layout of organization can be a reason to adopt E-procurement system</td>
<td>75</td>
<td>2.183</td>
<td>0.713</td>
</tr>
<tr>
<td>System Compatibility with efficient and effective procurements undertakings</td>
<td>75</td>
<td>3.48</td>
<td>3.323</td>
</tr>
<tr>
<td>To avoid paper based or Manual procurements functions</td>
<td>75</td>
<td>4.54</td>
<td>2.115</td>
</tr>
<tr>
<td>Fitness of E-procurement on public Procurement functions</td>
<td>75</td>
<td>4.45</td>
<td>0.511</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Research Findings (2020)

From the findings above on table 4-6, the study shows that technological factors have significant influence on the adoption of the E-procurement in public procuring entities. Whereas, many respondents agreed that the change and demand for technology enforce the world, particularly the public organization to find ways to meet the implementation and functions of procurement efficiently and effectively.

Many respondents strong agreed on factors such as (Perceived benefit and advantages, System Compatibility, to avoid paper based or Manual procurements functions and Fitness of E-procurement on public Procurement functions). Expressed by parameters respectively such as (Mean = 4.82, 3.48, 4.54, 2.45 and 4.45, S.D = 0.912, 3.323, 2.115, and 0.511).
While, few respondents less agreed that technological infrastructure and layout of organization can be a reason to adopt E-procurement system (Mean = 2.183, S.D = 0.713).

Ideally, technological factor is inevitably important since automatizing the procurement process acts as a corner stone for revolutionizing the public sector purchasing. The online platform that serves as an electronic process that handles all the aspects of public procurement. The numerous benefits coming from this technology serves as the major driving force that is leading to increasing demand of this technology. The benefits attached to this that the end users can make use of this platform to conduct technological purchase of standard items form validated vendors using pre-negotiated contracts. Suppliers have the option of registering themselves and list the full range of products and services they provide. Further benefits include Cloud services don’t require upfront expenses for new on-premises servers, storage capacity and hardware.

Similar to study carried out by Makoba et al (2017) E-procurement also allow for aggregating day-to-day transactions, maintaining vendor performance profiles, project management tools and other key decision-making resources. All the relevant data is stored in one secure system, thus making it easy for the procurement staff to regulate and analyze the information strategically so as to optimize spending. Apart from these, many E-Procurement applications provide a wide range of sophisticated analysis tools, including business intelligence capabilities. Mgidlana (2013) the application eases the process of closely tracking the expenditures, analyzing the performance data needed for strategic sourcing and category management.
Moreover, the study establishes that technological improvements is a vital part of any public organization and any retail business, whether it’s a small firm or an online Web site, therefore, the application of E-procurement software is assumed to be very significant with toward the effective procurement functions. Furthermore, it is observed that with E-procurement software the procurement unit provides a critical information about the condition of the materials in the organization for the case of firm operations, such as whether there are low on stock and the inventory needs to be replenished, requisition processes, order fulfillment and other related procurement functions such as inventory management lead to effective organization performance when it can provide departments with right materials at a required time and even customers with accurate information, letting them know when items are out-of stock, back-ordered, or pre-orderable, It is also applicable to public authorities when the particular group people in the country can have access to the E-procurement system and allow the status updates electronically. Hence, failure to integrate the procurement function to the entire organization to provide information to public authorities or to customers put the organization or inventory at risk of losing value of money status or future business (Ibem et al., 2018).

4.3.3 Objective 3: To Identify Performance Factors in Adoption of E-Procurement

The third objective of the study intended to establish the influence of performance (Professional Capacity) on adoption of E-procurement management system. The study then established that need to have effective procurement performance has significant influence on implementation of E-procurement system in the organization. The study assumed that E-procurement is a cross-functional enterprise
system driven by an integrated suite of software modules including competencies to supports the basic business processes of a public procuring entity.

E-procurement will allow E-procurement in the organization to provide the right metrics and key performance indicators that can aid the firm when executing performance, resources, costs and operational logistics from relocated departments and manufacturing facilities. Again, However, Gunson (2010) E-procurement solutions gives a room to effective performance through the streamline business processes across multiple locations and geographies with suppliers, partners and manufacturers leading to significant improvement, and to make critical decisions based on ability to achieve growth and cost reduction goals.

Therefore, Performance factors are the influence for adopting and implementing E-procurement in public procuring entity. Then with use of questionnaire, the respondents were recommended to circle the number that accurately reflects the level of influence as performance factors on adoption of E-procurement system. The suggestions were arranged on levels namely 1= Disagree, 2= Moderate Extent, 3= Agree, 4= Strong Agree.
Table 8: Performance Factors in Adoption of E-Procurement

<table>
<thead>
<tr>
<th>Factors</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-procurement Reduce error and Discrepancy in procurement functions</td>
<td>75</td>
<td>4.21</td>
<td>1.319</td>
</tr>
<tr>
<td>E-procurement enables the effective Automation of Public Procurement Functions</td>
<td>75</td>
<td>1.914</td>
<td>1.821</td>
</tr>
<tr>
<td>E-Procurement Reduce Transaction Time</td>
<td>75</td>
<td>4.781</td>
<td>0.935</td>
</tr>
<tr>
<td>E-Procurement Reduce Order Processing Errors</td>
<td>75</td>
<td>3.618</td>
<td>1.656</td>
</tr>
<tr>
<td>E-Procurement emphasize value for money procurement</td>
<td>75</td>
<td>3.422</td>
<td>1.989</td>
</tr>
<tr>
<td>E-procurement Reduce or Make Error Free Procurement Procedures</td>
<td>75</td>
<td>1.554</td>
<td>1.342</td>
</tr>
<tr>
<td>E-Procurement make Public Procurement Cost effective</td>
<td>75</td>
<td>3.321</td>
<td>0.491</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Research Findings (2020)

From the table 4–7 above table the respondents provided responses on how performance influences the adoption of E-procurement system in public procuring entities. The study further suggested largely that performance factors is centered on competencies such as:- (E-procurement Reduce error and Discrepancy, Reduce Transaction Time, Reduce Order Processing Errors, E-Procurement emphasize value for money procurement and E-Procurement make Public Procurement Cost effective). Presented by parameters (Mean = 4.21, 4.781, 3.618, 3.422 and 3.321, S.D = 1.319, 0.935, 1.656, 1.989 and 0.491).

While, few respondents dis-agreed that as the source of performance, (E-procurement enables effective automation, presented by Mean = 1.914, S.D = 1.821) and (E-
procurement make error free procurement procedures presented by Mean = 1.554, S.D = 1.342).

Generally, the study established that there is significant influence of performance on adopting E-procurement system designed to solve various organizational procurement and other general management function problems, and to provide an integrated infrastructure. Through effective procurement performance the E-procurement packages offer advantages to enterprises to achieve various benefits. Therefore, performance is vital when it is effective and thus the role of E-procurement gets in such that Competencies, good flows and professionalism are observed. Ideally, the study portray that there is significant relationship between effective procurement performance (value for money procurement) and effective application of E-procurement as the indicator of competencies and public procurement performance. Competencies allow the clear flows of procedure and creativity in public procurement undertakings.

Furthermore, it can be explained that the rationalization and the penetration of various strategies and computerized systems, public entities that wish to maintain high performance standards and maintain relevance in the nation have opted to automate their operations. Public procuring entities companies in the public sector that wish to be efficient have need to tangibly opt to integrate procurement function and other function in the organization giving it the value as any undertaking in the organization.

Thus, the need to have effective performance influences the effective implementation E-procurement procurement and hence public procurement performance.
4.4 Discussion of Findings

This section explains and gives more argument and discussion that were generated through analysis of findings in previous findings, through the discussion of what has been presented in the previous findings section in relation to the subject matter based on the objectives of the study. The discussion focused on the assessment of the factors affecting procuring entities in adoption of E-procurement in Tanzania. The study specifically wanted to identify the influence of organizational factors, the influence of technological factors and the influence of performance factors on adoption of e-procurement in TANESCO. The findings and discussion are presented below as follows:-

4.4.1 Organizational Factors on Adoption of E-procurement

The study findings shows that public organization don’t have infrastructure which may emphasize the current or future effective application of technologies including the E-procurement. However, it could be due to the management systems and educational facilities that hinders instructors to effectively impact the procurements professionals with the required technicalities on application of ICT in procurement and even designing own systems which will fit the particular sectors on purchasing styles and general procurement functions.

Kayungi (2013) E-procurement has been identified as an instrument in public sector reform. It enables government to monitor the efficiency and effectiveness of procurement and provides more transparency and accountability. However, it is only effective when linked to broader public management objectives and used as part of an overall change management strategy. Otieno (2008) the progress available through e-procurement is only realized when the system is used. Process re-
engineering is not enough as different beliefs, expectations and practices may exist. In most Sub-Saharan countries definitive policy and strategic framework may fail to provide clear rules and guidelines to stakeholders that can help transform the public procurements and socio-political environments. Typically, an incremental introduction of e-procurement tools can ease the transition to an e-enabled environment. However, policy that mandates common purchasing strategies and methods provides less emphasis on the construction and improvement of facilities that can easily allow the best results.

Fernandez et al., (2017) adds that an integrated approach between whole of government and e-procurement initiatives can create a functionally coherent network of policies and standards. Furthermore, Rasheli (2016) E-procurement strategies in most developed countries were developed by a centralized agency within a broader policy scope and were integrated as part of an overall change management strategy. As a result, there was a greater potential for innovative change within these governments. This suggests that in Sub-Saharan public governance and innovative change should not be conflicting approaches.

The study findings carried out by Jun-Der et al.,(2017) states that E-procurement is more successful when the particular procuring entity organization is a process oriented and information platform is available to enable an enterprise wide operational efficiency. When the public procuring entity have the perspectives of information technology, organization profitable operations, software awareness and application as well as organizational change, E-procurement implementation budgets and professional capability then, the E-procurement can be adopted and implemented systematically organized. More than that the study also revealed that E-
procurement is still seem to be a new styles to most of developed countries including creative design of procurement functions, improving operational processes, developing innovative methods, reducing cost and time and improving quality and safety and meet public needs and the company strategy.

Furthermore, Hahn et al (2012) added that many organizations want to adopt E-procurement but implementation of the E-procurement system require a considerable investment of resources, E-procurement implementation projects are invariably complex and difficult, appropriate and effective project planning can increase the chances of successful implementation. However, the successful implementation of the E-procurement system is attributable to closely following the specific pre-implementation, implementation and post-implementation strategies in the organization.

Effective pre-implementation strategies include adopting risk and quality management protocols in change management, splitting the project into subsystems to improve cross-functional communication, using a phase-based approach rather than a radical approach, applying appropriate planning styles for various tasks and planning the recruitment, selection and training of the project team personnel. Effective E-procurement implementation strategies can have three alternative strategies: self-development, outsourcing and a dedicated software package. Self-development and outsourcing which are based on information system requirements that are analyzed in accordance with business strategies. Outsourcing and dedicated software packages can reduce software and maintenance costs. However, the software functions typically require customization. While, framework for the E-procurement system implementation for the systematic life cycle management of IT
projects involves project selection, strategic implementation and performance evaluation (Tamara, 2018).

Karahanna (2000) thus, public procuring entity’s organizations should not ignore the formal E-procurement selection practices, and emphasized the importance of user engagement during the selection process, as this could aid in avoiding E-procurement failures and erroneous system evaluations. In addition, organization specific characteristics and contexts have also been important research aspects throughout E-procurement adoption. Likewise, public procuring entities need first to consider their characteristics on the E-procurement adoption process. It has been observed that the size has a direct impact on E-procurement adoption success.

4.4.2 Technological Factors on Adoption of E-procurement

Ogubala et al (2014) the technology context represents the pool of technologies available to a firm for adoption. These can be both the technologies available on the market and the firms’ current equipment. The most vital elements which influence organization in Tanzania to adopt e-procurement are: - Perceived benefits, Technological infrastructures, Technological Complexity, and Technological Compatibility.

Perceived Benefits: include direct benefits like reduction in transaction errors and transaction costs, improved data accuracy and information quality, and faster application process. On the other hand, indirect benefits associated include better customer services and improved relationship with business partners.

Technological infrastructures: refers to technologies that enable internet-related businesses. ICT Infrastructure influence on the volume of a nation’s Internet
Transactions or on the number of e-business websites in a country. A better ICT Infrastructure enhance E-procurements development.

*Technological Complexity* relates to the level of ease with which the E-procurement technology can be understood by the firms. Basically, the easier to understand the technology and its application, the faster and more immediately the adoption process and vice versa. *Technological Compatibility* is the degree to which an innovation was perceived as consistent with the existing values, needs, and past experiences of the potential adopter. Firms generally tend to adopt technologies that are in association with certain internal experiences and values, that is, technology that is consistent and within the limits of the firm and with those technologies that will become available in the future (Mshamu, 2013).

Similar to study carried out by Makoba et al., (2017) E-procurement also allow for aggregating day-to-day transactions, maintaining vendor performance profiles, project management tools and other key decision-making resources. All the relevant data is stored in one secure system, thus making it easy for the procurement staff to regulate and analyze the information strategically so as to optimize spending. Apart from these, many E-Procurement applications provide a wide range of sophisticated analysis tools, including business intelligence capabilities. The application eases the process of closely tracking the expenditures, analyzing the performance data needed for strategic sourcing and category management (Mgidlana, 2013).

Moreover, Haddara (2018) technological improvements is a vital part of any public organization and any retail business, whether it’s a small firm or an online Web site, therefore, the application of E-procurement software is assumed to be very significant with toward the effective procurement functions. Furthermore, it is
observed that with E-procurement software the procurement unit provides a critical information about the condition of the materials in the organization for the case of firm operations, such as whether there are low on stock and the inventory needs to be replenished, requisition processes, order fulfillment and other related procurement functions such as inventory management lead to effective organization performance when it can provide departments with right materials at a required time and even customers with accurate information, letting them know when items are out-of stock, back-ordered, or pre-orderable, It is also applicable to public authorities when the particular group people in the country can have access to the E-procurement system and allow the status updates electronically. Hence, failure to integrate the procurement function to the entire organization to provide information to public authorities or to customers put the organization or inventory at risk of losing value of money status or future business.

4.4.3 Performance Factors on Adoption of E-procurement

Nziku (2019) performance is like competency which can be in two categories namely technical and behavioral performance. Public procurement performance strives to achieve three competing demands of meeting commercial interests with key themes of value for money, economy, efficiency and effectiveness. The regulatory interests with key themes of competition, transparency, equality and compliance and the social interests whose key themes include public interest, employment concerns, social exclusion, economic development and environment policy. In an effort to attain these demands, organizations constantly attempt to maintain the performance by look for employees who have skills necessary to deal with the wide variety of tasks faced by purchasing professionals.
Lewis-Faupel et al. (2016) in order to achieve the performance, Procurement professionals need a set of flexible skills due to changing local government contexts. No single skill can be adequate to manage the procurement portfolio of great complexity in local government systems. Procurement tasks demand professionals with high level strategic, tactical as well as operational skills. These skills should potentially take a broader supply chain multi-disciplinary and integrative approach. However, Angela (2014) high performance for public procuring practitioners may not only mean PMU and its member department, it can also include other departments which recognize the value of procurement in the organization, it includes other department interconnected it can be ERP interconnected system in the organization. Thus, performance significantly influence the effective public procurement competence. It stands as a major driver in the extended supply chain activities. The study established that relationship between procurement performance and E-procurement performance is based on the idea that a skilled procurement personnel embrace competencies and add value to the organization through applying fully all the elements which constitute the value for money procurement.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONSSS

5.1 Introduction
This chapter presents summary, conclusion and recommendations of the study findings which were discussed in previous chapters namely analysis, findings and discussion.

5.2 Summary of the Study
The study aimed at assessing the factors affecting adoption of E-procurement in public procuring entities. The case of Tanzania Electricity Supply Company (TANESCO). Specifically, the study identified the influence of organizational factors on adoption of e-procurement, assessed the influence of technological factors on adoption of e-procurement and identified the influence of performance factors on adoption of e-procurement in TANESCO.

The study was set in such a way that organizational factors, technological factors and performance factors are the source of effective application of E-procurement in public authorities. Also, the study findings are expected to give more details and information as the factors for E-procurement adoption and public procurement performance in the public procuring entities in Tanzania. The section is presented below as follows:-
5.3 Summary of the Study

5.3.1 Organizational Factors on Adoption of E-Procurement

The study established that public organizations have less influence on the adoption and application of E-procurement. This further has led to establishment of concepts that effective strategies are needed to improve E-procurement adoption and deliver value for money procurement. As more offices use the E-procurement system, more transactions move through the system and more efficiencies and savings are realized. As with organizations the buyer (or the buying organization) must be E-ready, and this status can vary across sectors within one government. Some issues that can influence E-readiness are the move to decentralize purchasing and finance responsibilities, the typical structure of governments, and the use of independent E-procurement or enterprise resource planning system (ERP) tools. Support throughout the adoption process requires an understanding of the different cultures. The right organizational environment for E-procurement should (a) support government and business priorities, (b) provide online access for commonly procured goods and services, (c) integrate with agencies or ERP systems and (d) communicate benefits to stakeholders.

The study found that applicability of E-procurement in the organization can be possible if the extent of application of E-procurement in the organization is determined. Such that organization have determined policies and implementations on the extent of computerization in public procuring entities, public procurement policy and seminars and training. Similarly, the study indicates that infrastructure of the country and procuring entities have less influence on the effective implementation of E-procurement. Sometimes original and up to dated hardware and software is of huge
importance during the adoption of E-procurement solution. It is like when the public procuring entity have the positive perspectives of information technology, organization profitable operations, software awareness and application as well as organizational change.

5.3.2 Technological Factors on E-procurement Adoption

The study found out that, the technological factors have significance role on the adoption of E-procurement in the public sectors. This is due to its applicability and usability of that particular technology in facilitating a certain task. Such that for this study, E-procurement was perceived to have more preference when E-procurement is a technical implementation that enables the transformation of organizational structures and workplace practices. Flexibility in the procurement functions and enablement of the associated systems and processes which allows the diverse requirements of stakeholders and participants to be recognized and supported. This may include tailored training for buyers and procurement support staff as well as the ongoing reviews of the associated processes and tools. By staying aware of participants’ needs, organizations can build, evolve and manage E-procurement systems and processes that allow organizations to adopt E-procurement and electronically purchase goods and services from preferred suppliers. Whereby, in some countries, a centralized agency successfully managing public procurement. The agency supports buyers and suppliers throughout the E-procurement process and adjusts the tools and features to support the needs of those participants.
5.3 Performance Factors on E-procurement Adoption

The study established that performance influence the adoption and implementation of E-procurement, since it’s the combine and connect various customized systems in the organization. Thus the organization which aim at high performance and reliable systems must have a well-structured infrastructure for effective implementation of E-procurement system in the particular organization. Since, E-procurement systems can be designed and built to serve the needs of the various functional departments such as procuring unit, finance department and the accountants. For example, E-procurement can support performance when work the way purchasing team work, it provides the flexible tools needed through every step of the procurement process. Performance, is influential for E-procurement performance as it connect all the functional departments in the organization. It may consists of many different tools such as e-sourcing, e-tendering, e-informing, e reverse auctions, e-MRO and web-based enterprise resource planning. Thus the study found out that performance significantly influence the adoption of E-procurement. More than that performance stand as a major driver in the extended supply chain activities. The study established that relationship between organizational performance and adoption of E-procurement is based on the idea that an E-procurement system is not simply a tool that provides a single output, but rather a system that supports the capabilities of all other information tools and processes utilized by an organization including performance.

5.4 Conclusion

Adoption of E-procurement in public sectors need to be emphasized and reintroduced as to allow the culture in the public sectors to consider the significance of the application of E-procurement. Despite the fact that public sector E-procurement
may seem to be complex socio-technical system embedded in multiple layers of government. It has the capacity to become a meaningful agent of transformation in procurement practices through the joint actions of different layers of government and cooperation across various government sectors. In addition lack of cooperation, cooperation between government sectors and technology service providers is crucial when implementing systems. Collaboration between buyers, suppliers and support staff is equally important, and users should be approached in a coordinated manner to understand how they may shape the E-procurement system for their own purposes. E-procurement is also a strategic decision, and therefore, a good business design is vital.

Daud et al.,(2013) thus the public organizations need to include, (a) effective procurement policy and practice, strategies that enable buyers and suppliers to adopt and use the e-procurement system, (b) effective communication program that communicates the value of e-procurement to all stakeholders, (c) well-devised change management program to integrate these diverse parts. (d) Procuring entities to position in managing the competing priorities in government and policy reform, (e) normal procedures for public entities in developing the skill base for the new procurement professionals. All these are suggested as the modern design of e-procurement the public procuring entities need to consider as the best described as an integrated process that includes different social and temporal contexts. These include the available systems and technologies, integrated procurement policy and practice, and strategic sourcing decisions. Moving forward, id the organizations do not meet the current global methods of making the value for money procurements, E-
procurement systems will not mature and expand to include strategic sourcing decisions which can provide real significant gains.

Furthermore, the study indicated that technological factors influence the adoption of E-procurements, due to expected usage of E-procurement such as (a) perceived benefits for adoption of E-procurement, (b) expected system compatibility with efficient and effective procurement undertakings, (c) Avoidance of manual procurement functions, (d) Achieve better value for money (e) Reduce costs of doing business for both government and industry, (f) Reduce duplication and improve purchasing efficiency within and between agencies and service providers, (g) improve strategic information capture and operational data on procurement, e.g. purchasing patterns and (h) provide greater access for regional and small to medium enterprises (SME) (competitive tendering).

The study analysis indicated that organizational performance is basic for E-procurement adoption in the public procuring entities. Thus the organization which perform greatly has competent procurement personnel, competent management and strategic unit which is relied on effective E-procurement adoption systems and a well-structured infrastructure. High performance lead E-procurement systems to be structured and designed to serve the needs of the various functional departments and vice-versa such as procuring unit, finance department and the accountants. The straightforward implication is that public procuring entities through E-procurement enhance performance of the respective systems including ERP and many others and the overall economic development of the country.

Thus, to reflect effective adoption of E-procurement performance through competence of professionals trained and qualified procurement staff should is
emphasized and implemented. The findings further imply that the general management and management of the procurement cadre through effective performance initiate the effective adoption of E-procurement. Procurement performance with E-procurement leads to transparency and accountability, code of conducts and ethics in influencing procurement functions however some organization may seem to be slow or reluctant in adopting the E-procurement.

5.5 Recommendations

The study after thorough analysis on each objective the study then the researcher, suggested the possible solutions and point of views supported by other literatures, studies and observable phenomenon in the research field. Recommendations are presented below to the government, to policy makers, to the institutions in which the research was undertaken, to the future researchers and to the practitioners as follows:-

**To the Government:** Strong procurement management in the public sector is a tool for achieving political, economic and social goals. To make better public procurement undertakings to ensure value for money the government must be positioned to support E-procurement. Through supporting public procuring entities and institutions offering ICT courses, and those which offers procurement and supply chain management. In the era of increased demand for accountability and transparency in government the government can support E-procurement, by making sure that budget prepared include public procurement advancement and its key facilities (required technology) to reliable and updated procurement system.

Again, Government should establish the principles, policies and structure of public procurement which encourage every public procuring entity to adopt technology and
be updated. Supported by established ICT government unit which shall deal with improving procurement advancement and other business related fields. Government to emphasize the ICT training and human resource development programme to enhance skill levels and improve performance and to no longer attempt to channel all procurement of goods through a paper based government stores system.

**To Policy Maker**: The study has revealed that unpreparedness of public procurement entities infrastructure were not designed to meet future expansion and advancement of public procurement using E-procurement, thus policies and procedures must prepared to meet E-procurement and other many ICT compatible procedures and styles, so that E-procurement conform to varying degrees of E-procurement in the organization. This comes in parallel with global to national factors on the public procurement advancement agendas and current policy framework. The experience of policy maker must be so strategic so that when the policy is developed reflect the effective implementation of E-procurement implementation, due to globalization policy makers must also learn more about the other developed countries E-procurements systems and public procurement entities before moving the country procurement policy into it’s vital part of the success of value for money.

**To the institution in which the Research was undertaken**: The public procuring entities should establish the organization process prior to selecting the E-procurement system to be applied. To enhance the simplicity of using the E-procurement and other technical aspects, such as system stability and quality. The institutions must also consider the cost and budget of adoption E-procurement, So that to be prepared to adopt E-procurement fully with all the potential requirements needed by a particular
requirements for effective implementation of E-. Public procuring entities must have financial strategies to estimate the required E-procurement and ICT budget, which also must include maintenance and upgrade costs in the total budget. Although the E-procurement solution should have been applied with reasonable price, moreover, the organization must put realistic expectations for the whole acquisition procedures.

On top of that, the institution’s service and support should be linked with the implemented E-procurement application. Upon, deployment of E-procurement effectively public procuring entity should observe and evaluate the organization vision properly. The vision includes investigating the future direction of the organization and whether it is prone to continue in its current position during the lifetime of the E-procurement solution in the organization. In addition, the continuous updating of the system in the organization, as well as considering how the system advanced in near future. Institutions must make sure that there are better qualified public procurement personnel in the procurement department helped to increase operational efficiency and inspire labour productivity and competent with the application of E-procurement.

To practitioners: Additionally, the study recommends for performance, skills, competency and technicality awareness in the public procuring entities. Public procurement experts must be encouraged to effectively attend seminars, training and updating their education to meet new ways and systems of doing procurements in their sectors and country as a whole. It is evident that in Tanzania most of emphasis to upgrade procurements are based on procurement regulatory authorities such as PSPTB, PPA and PPRA, so the procurement individuals are supposed to be their
own role models to present the procurement better compared to other fields in the country and national wise.

If the procurement practitioners know the value of technology, and E-procurement in public procurement entities, it going to add value and will improve the organizational performance through the procurement performance. Additionally, improved inspection and acceptance of the goods and services procured competitively.

To the Future Researchers: The advanced procurement mechanisms and rationale for public procurement play key roles in the country and can be understood through value for money procurement. Future researcher are encouraged to conduct research on public procurement which are helpful to provide information to other researchers and other many public procuring entities when they consider implementing or upgrading their E-procurement systems. Research should be conducted to provide information which can help public procurement entities to reduce E-procurement implementation risks so that organizations can have more chances to improve their procurement value and value for money procurement with the success of E-procurement systems. Such practical implications can be applied to many companies for a better understanding about the factors that can lead to the success of E-procurement systems.

This approach should be valuable information for decision makers of sectors and public procurement entities before or during their E-procurement. Top management should provide the necessary resources and authority or power for further research in the organization, each public procurement unit need to have research personnel who can add up more necessary information and the public procurement advancement.
6.6 Suggestions for the further Studies

The study attempted to assess the effectiveness of inventory control system in public authorities, a case of TNESCO. The study recommended for further studies which are:- Further research on the relationship between value for money procurement and computerized inventory control, To examine influencing factors for poor inventory control compliance with PPA and regulations and An equivalent research should be performed for private sector companies to enable the creation of benchmarks, and the same should also be done for companies in the service industry for generalization purposes.
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technologies from the supplier perspective. November 2013.


and Management Sciences, 7(2), 164–176. https://doi.org/10.6007/ijarafms/v7-i2/2927

Appendix I: Questionnaire

Dear respondent, thank you for allocating your precious time to answer this questionnaire. This questionnaire is intended to collect information on the study titled “Factors Affecting Procuring Entities’ in Adoption of E-Procurement in Tanzania: A Case of TANESCO”.

Researcher promises that all provided information will be used for this study only. It is researcher’s sincere hope that her request will be considered.

Khadija, Issa

Instructions:

Please put a check mark (✓) in the box corresponding to the correct answer, or fill in the blanks.

PART I: BACKGROUND INFORMATION

Section of respondent .................................................................

Position ......................................................................................

1. Gender of Respondent

Male
Female

2. Please Indicate Your Age Group (Year)

18-25 [ ] 26-35 [ ]
36-45 [ ] 46 and above [ ]
3. Please Indicate Your Work Experience

Less than 1 year
1-5 years
6-10 years
11-15 years
More than 15 years

N.B Highest educational level attained (please put only one check mark (✓) to indicate your highest qualification)

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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<td>Bachelor Degree</td>
<td>Masters Degree</td>
<td>Doctorate Degree</td>
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<td>Check Mark (✓)</td>
<td></td>
<td></td>
<td></td>
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</table>
PART II: TARGET QUESTIONS

Objective 1: The organizational factors in adoption of e-procurement.

The some factors are perceived to be organizational factors in adoption of e-procurement to influence efficient and effective public procurement performance.

Please indicate by circling the number that accurately reflects the level of competence of factors on adoption of E-procurement toward the public procurement performance.

1= Great Extent, 2=Small Extent, 3= Don’t Know, 4=Not at all

| An expanded and size of organization is a factor for particular organization to adopt E-procurement | 1 | 2 | 3 | 4 |
| Management skills and competence of the organization lead to adoption for E-procurement | 1 | 2 | 3 | 4 |
| Management attitude and culture of the organization lead to adoption of E-procurement | 1 | 2 | 3 | 4 |
| Participation of organization’s staff on the technology, influence the adoption of E-procurement | 1 | 2 | 3 | 4 |
| Need for competencies lead the adoption of E-procurement | 1 | 2 | 3 | 4 |
| Fitness of Existing Information Technology System on Public Procurement | 1 | 2 | 3 | 4 |
| Using additional E-procurement is easy for employees | 1 | 2 | 3 | 4 |
**Objective 2: The Technological Factors in Adoption of E-Procurement.**

The Technological factors and advanced ways to facilitate procurement are perceived to influence public procurement entities’ to adopt E-procurement to improve performance. Please indicate by circling the number that accurately reflects the level of technological factors influence on public procurement performance.

1= Great Extent, 2=Small Extent, 3= Don’t Know, 4=Not at all

| Perceived benefit and advantages of using Technology to improve functions and procurement functions lead to adoption of E-procurement technology | 1 | 2 | 3 | 4 |
| Technological infrastructure and layout of organization can be a reason to adopt E-procurement system | 1 | 2 | 3 | 4 |
| System Compatibility with efficient and effective procurements undertakings | 1 | 2 | 3 | 4 |
| To avoid paper based or Manual procurements functions | 1 | 2 | 3 | 4 |
| Fitness of E-procurement on public Procurement functions | 1 | 2 | 3 | 4 |
**Objective 3: To Identify Performance Factors In Adoption of E-Procurement.**

The following performance factors are perceived to be the influence of adopting and implementing E-procurement in public procuring entity. Please indicate by circling the number that accurately reflects the level of influence as performance factors on adoption of E-procurement system. 1= Great Extent, 2=Small Extent, 3= Don’t Know, 4=Not at all

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<th>E-procurement</th>
<th>Reduce error and Discrepancy in procurement functions</th>
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<th>2</th>
<th>3</th>
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