DETERMINANTS OF ELECTRONIC PROCUREMENT ADOPTION IN AN ORGANIZATION: COMPARATIVE STUDY OF PRIVATE AND PUBLIC ORGANIZATION:

THE CASE OF TANESCO AND TBL

DETERMINANTS OF ELECTRONIC PROCUREMENT ADOPTION IN AN ORGANIZATION: COMPARATIVE STUDY OF PRIVATE AND PUBLIC ORGANIZATION:

THE CASE OF TANESCO AND TBL

By

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CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a dissertation entitled: **Determinants of electronic procurement adoption in an organization: a comparative study of Tanzania Breweries Limited (TBL) and Tanzania Electricity Supply Company (TANESCO)** in partial fulfillment of the requirements for award of the Degree of Master of Science in Procurement and Supply Chain Management of Mzumbe University.

Signature

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Major Supervisor

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Internal Examiner

Accepted for the Board of School of Business

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DECLARATION AND COPYRIGHT

I **GIFT ONESMO MUSHI** declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other university for similar or any other degree award.

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Date.....

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DEDICATION

I dedicate this work of my hand to my husband Shadrack for always being there and support and my son Gabriel. I also dedicate this work to my late Father Onesmo Mushi and my mother Gladness Maimu, your prayers have taken me this far.

LIST OF ABBREVIATIONS

B2B	-	Business to Business
EDI	-	Electronic Data Interchange
ICT	-	Information Communication Technology Management
IT	-	Information Technology
MRO	-	Material Repair and Operation
MSC-PSCM	-	Masters of Science in Procurement and Supply Chain
PMU	-	Procurement Management Unit
TANESCO	-	Tanzania Electric Supply Company
TAT	–	Technology Acceptance Theory
TBL	-	Tanzania Breweries Limited
TCT	–	Transaction Cost Theory
TPB	-	Theory of Planned Behavior
UN	-	United Nation

ABSTRACT

This study examined the determinants of electronic procurement adoption in an organization by comparing public organization (TANESCO) and private organization (TBL). The population consisted of employees in both organization of which a sample size of 52 respondents were taken from TBL and a sample size of 54 respondents were taken from TANESCO. The study considered four objectives as the influence of individual factors on e-procurement adoption, the influence of organizational factors in an organization, level of e-procurement adoption and the challenges facing organizations on implementation of e-procurement. A cross-sectional research design was used by the researcher and purposive sampling was used to obtain number of respondents needed from the whole population. Data were collected through questionnaires presented to the respondents and documentary review was used to supplement the study of which both quantitative and qualitative techniques were used. This study found that individual age and education found to have a significant relation with e-procurement adoption in TBL while individual skills and education found to have a significant relationship with e-procurement adoption in TANESCO of which education found as the common individual factor which influences e-procurement adoption in both organizations. On other side organization factors such as motivation and team work found to have a significantly relationship with adoption of e-procurement in TBL, while organizational structure and team work have significantly relationship with e-procurement adoption in TANESCO, the study found that team work is the major influence under organizational factor in e-procurement adoption. Also the study found that private organizations like TBL adopted e-procurement at the highest level stage compared to public organizations which are in preliminary stage of adopting e-procurement. Among challenges facing the organization on implementing the system were found to be system compatibility and supplier readiness while challenges facing the organization on the adoption process were lack of electronic infrastructure and fund. It was recommended that public organization should adopt fully e-procurement in a pace of private organization in order to increase performance of organization through cost reduction, efficiency and effectiveness.

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CHAPTER ONE

BACKGROUND OF THE STUDY

1.1 Introduction

This chapter consist of the background of the study, research problem, objectives of the study, research questions and the significance of the study.

1.2 Back ground of the study

The arrival of e-commerce via internet on 1990 has led to the beginning of internet enabled procurement to take place. World literature show high percent of organizations adopt e – commerce in their daily activities. Studies done in Singapore indicate that,61.7% of organizations are electronic procurement adopters, and it has been indicated that, firm size, top management support, business partners and perceived indirect benefits are one of the positive influencers of electronic procurement adoption (Teo *et al.,* 2009). According to Teo *et al,*.(2009), level of electronic procurement adoption differ among countries, for stance in Singapore varieties of items are procured in different extent of which most procured items via internet are Material, Repair and Operation (MRO) which represent 57.6%, while manufactured goods represent 43.5% procured through internet and raw material represent 47.4%.

The adoption of e-procurement in Saudi Arabia is highly influenced by external factors rather than internal factors. The external factors include Government support, security and trustworthiness of the online payment option, policy and regulation as well as business and national culture of the country (Altayyar&Beaument, 2016), similarly Saudi Arabia is characterized by political and economic instability in that sense makes the rate of Information and communication technology innovation is low.

In United Nations (UN), electronic procurement adoption is highly influenced by Organization readiness, supply factor, policy factor, digital divide and strategic factors, and most of electronic procurement is done on routine and non-standardized, at the same time, in most of all purchases and type of organization, recently e-procurement used in the purchasing of few set of goods, in the office supplies but also material requirement and operations (MRO) (Davila& Palmer, 2003). As document by Makoba *et al., (*2017) Tanzania like any other country is strive to succeed in electronic procurement system to improve organization's efficiency and effectiveness which will influence transparency, they also revealed that organizations which practicing traditional procurement fear to opt for electronic procurement because of risks associated with the system, although organization which have opt for the system turned into vulnerable risk.

1.3 Statement of the problem

E-procurement enable the organization to reduce cost in terms of less paper work in the procurement undertaken, and reduce inventory cost because goods, or material will be delivery faster due to timely information transfer (Aberdeen Group, 2005). Also e-procurement help the organization to improve efficiency as the essence of maverick purchase will be reduced because of automated procurement system which enhances good monitoring of procurement activities, in that essence transparency improve and the organization gain a good relationship with their supplier (Koech *et al,* .2016).

As it has been observed that e-procurement not only benefits the organization on cost reduction but also helps the organization to operate with few chosen suppliers of which the implementation will involves the use of Electronic Data Interchange (EDI) and the internet, where by the organization will be able to search for suppliers and also supplier gets information on what it is required to meet (Teo *et al*., 2009). And it has been revealed that, organization that makes maximum use of internet technology are in the better position of reducing non value added tasks through the increased

speed of information transfer which helps to link all members within a supply chain (Morosan & Jeong, 2008).

Despite of e-procurement benefits to the organization still the rate of adoption is low especially in developing countries like Tanzania (Makoba *et al*, 2017) in that sense the key question is what causes a low rate adoption in public organizations such as TANESCO while private organizations such as TBL have been able to adopt. Various studies in Tanzania have revealed that, the successful adoption of e-procurement require various driver forces such as; technological factors in terms of technological infrastructure ,organizational factors in terms of top management support and the attitude of the organization towards e-procurement and environmental factors (Mohammed,2013).

Also the study done by Koech & Ayoyi, (2016) in Kenya comes with recommendations that e-procurement adoption in any organization must be supported by individual factors especially technical skills and age of the employee, because it was observed that the elder people are late adopters of information and communication technology compared to younger people. E-procurement have able to be practiced in private sectors especially in Tanzania Breweries Limited (TBL) of which in public sectors such as TANESCO the system have not yet been implemented, and therefore in this study the researcher went to analysis on factors made the organization to adopt electronic procurement and what made the public organization to slowly implement the system.

1.4 Research Objectives

1.4.1 General Objective

To analyze the determinants of e-procurement adoption in an organization: A case of TANESCO and TBL

1.4.2 Specific Objectives

i. To determine the influence of individual factors on e-procurement adoption at TANESCO and TBL
ii. To determine the influence of organizational factors on e-procurement adoption at TANESCO and TBL
iii. To assess the level of e-procurement adoption in TANESCO and TBL
iv. To examine the challenges facing e-procurement adoption in TANESCO and TBL

1.5 Research Questions

i. What is the influence of individual factors on e-procurement adoption in an organization?
ii. What is the influence of organizational factors in electronic procurement adoption in an organization?
iii. What is the level of electronic procurement adoption in an organization?
iv. What are the challenges facing adoption of e-procurement in an organization?

1.6 Significance of the study

1.6.1 Government

This Research assisted the Government of Tanzania to acquire the information on how factors such as organization factors and individual factors influence the adoption of e-procurement in public organization and help the Government to reduce cost and

corruption and showed the Government to what extent does the Government can be able to respond to the technology

1.6.2 Academicians

The Research helped student to analyze the response of the Government towards e-procurement in Tanzania and formulate other gap for future research papers. On other side this research provided knowledge to academicians on the extent of e-procurement adoption in the country.

1.6.3 Organization

To the organization this study enabled them to get information on the benefits of adopting e-procurement, and how the system helped to reduce cost and increase efficiency of which in turn improved the organization performance, On other side the this Research enabled the organization to determine what the organization should do in order to improve electronic procurement system.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter present theoretical literature that presented relating with the objectives of this paper, and the theories guided the objectives and present the necessary framework concern the problem of the study.

2.2 Definition of the Concepts

2.2.1 E-procurement

Refers to the aspects of procurement supported by various forms of electronic communication and takes up forms such as electronic data interchange, enterprise resource planning, e-sourcing, e-tendering, and e-informing, among others (Knudsen, 2002).E-procurement as the use of electronic methods over the internet to conduct procurement functions: identification of requirement, tendering process, payment and contract management. The rationale behind adoption of e-procurement is to enhance efficiency and effectiveness and transparency and accountability in procurement (Corsi, 2006). E-procurement has been defined as the use of information technologies to facilitate business-to-business (B2B) purchase transactions for materials and services (Wu *et al*., 2007).

Generally in this research e-procurement was considered to be as the use of computer technology to purchase goods, works or service from various suppler with the support of the Internet which link one computer with an

2.2.2 Adoption

Rogers, (2003) defined adoption as “the first or minimal level of behavior utilization”. And also Adoption means the choice of acquire and use a particular way of doing

(Khan, 2002). Adoption is a decision to make full use of innovation as the best course of action available (Hakansson & Waluszewski, 2003).

In this research adoption meant the action taken by the organization to acquire and use electronic means for purchasing goods, works or service. In that sense adoption in this Research will aim for both acquiring of system and use it. The organization termed as adopters once found they have install information and communication technology and they are using it.

2.2.3 Compatibility

Refers to the process in which an instrument or system are consistency with user expectations/population stereotypes, which provide higher user satisfaction, few errors and faster learning (O'cass, &Fenech, 2003).In this research compatibility meant a situation in which the installed system inside the organization is within the capacity of the employees to implement.

2.2.4 Information Technology

Information technology (IT) is a technology which uses computers to gather, process, store, protect, and transfer information. Today, it is common to use the term Information and communications technology (ICT) because it is unimaginable to work on a computer which is not connected to the network (Rendulic,2011).

2.3 Theoretical review

2.3.1 Theories

The study was guided by three (3) theories which are technology acceptance theory, theory of planned behavior and transaction cost theory.

2.3.1.1 Technology Acceptance Theory

According to Devis (1986), this theory explains that, emerged new technology inside the organization cannot be implemented if it does not accepted by the user. Adoption of e-procurement technology in the organization requires the involvement of employee and openly communicate with them concern the new technology emerged. According to Attaran, (2001), new technology leads to organizational and behavior changes, hence attitude and beliefs among employees must be aligned with the new technology imposed. Most of individual inside the organization may resist the changes emerged hence it is important for the organization to find out the reason for the users to resist any changes.

Theory of Technological acceptance is based on two things; Perceived usefulness and ease of use. This theory is applicable to this study because the adoption of e-procurement in an organization will be implemented if the employees within the organization find it easy for them to use and the organization will insist on the implementation of the system if the technology found to be of the benefit to the organization. So that all the employees within the organization must feel positive towards the adoption of e-procurement

2.3.1.2 Theory of Planned Behaviour (TPB)

From this Theory of Planned Behaviour (TPB) it explore how a certain behaviour of an individual is determined by the behavioural intentions which influenced by the attitude of an individual towards that particular behaviour and how does the individual perceptions will be towards control on the behaviour (Ajzen, 1975).

Since the TPB theory is basing on intention, attitude and perception over the behavior control then from this context, users within a an organization my adopt the use of e-procurement if the system is compatible, and technology facilitate the condition, at the same time the perceived usefulness of the system, resources and self-efficacy

(Chen *et al*, 2008).TPB makes a considerable support that, adoption of a certain action mostly influenced by certain variable.

2.3.1.3 The Transaction cost Theory

Any organization can acquire an item if it has been found to have minimum cost, the minimum cost will be obtained once price of the product, negation cost, and cost of information failure have been determines which are the most important transaction cost in the market (Coase,1937). E-procurement adoption is associated with cost such as, the cost of acquiring the network infrastructure, management of electronic portal and cost of training the staff, the TCT guide the Procuring Entity to minimize as much as possible those cost associated with the adoption of e-procurement.

Most of procurement managers aims for cost reduction rather than price, and in that sense, Literatures revealed that, procurement behavior have strong direct impact on indirect procurement cost such as the cost of handling goods, supplier handling and to tackle this, collaboration have been emphasized among business partners with mutual system and working methods (Gadde&Hakansson,2001). E-procurement tools enable the organization to reduce transaction cost between business partners through facilitating and enable activities to be completed faster, cost associated with accounting such as invoicing and tracking are reduced(Rasmusson,1999). Hence, the adoption of e-procurement can be implemented once found that the cost of implementing the system is lower than the cost of not adopting the system.

2.3.2 Relationship between Individual factors and e-procurement adoption

The success of electronic procurement adoption associate with the adequate user training, together with user's characteristics and attitude. According to Kusumaningtyas and Suwarto, (2015) adoption of information and communication technology is also influenced by demographic factors such as Age, gender and education level. E-procurement adoption influenced by factors which concern the individual him/her self as they are the ones who implement the intended technology,

hence there must be a consideration to the user in the organization, among attributes of individual factors includes;

2.3.2.1 Skills

Organization performance based upon the function level of purchasing expertise and strategic purchasing activities by making the best use n new technology and increase organization's efficiency, Although benefits of e-procurement are known to the Organization, According to Harrison &Rainer, (2002) it is important for the organization to consider first inter organizational collaboration and network effect underlying the particular technology before deciding to adopt e-procurement, this is due to the reason that, the success implementation of e-procurement system selected requires expertise from both supplier entity and the buying organization, who are in charge in day to day procurement operation (Mchopa, 2012).

2.3.2.2 Education

Literatures have revealed that, there is relationship between level of education of an Individual and the adoption of electronic procurement. According to Caselli & Coleman, (2001), organization's rate of electronic usage system is viewed on workers ability in terms of their education level, that is to say a person with technical knowledge was able use electronic system easy, and the organization incurred minimum cost in training, and in that sense electronic procurement can be easily adopted

2.2.2.3 Personal Age

Among one of the important production factor is knowledge, of which its combination with the ICT usage has been considered as the crucial factor for the successful performance and competition within an organization. Literature has been reported that older workers are less qualified in the ICT usage compared with the younger ones.

As according to Meyer, (2007) the adoption of new technology is highly in the organizations with the possession of younger employees compared with the organization with high number of elder's workforce.

2.3.2.4 Gender

The adoption of electronic procurement have been documented to have a relationship with sex, the rate of using information and communication technology (ICT) varies among groups of sex, one group can be influenced to have an interest on using electronic system that other group, according to Raufu (2014) behavior intention and the condition among genders influence the rate of Information and Communication Technology (ICT) adoption.

2.3.3 Relationship between Organizational influences on e-procurement adoption in an organization

Kee-hungLai *et al.,* (2008), revealed that, e-procurement adoption is influenced by the organization factors in terms of top management support, and firm size, in the sense that the adaptors of information and communication technology receive highly support from the top management, and organizations which are large in size tends to be the larger user of Electronic Data Interchange (EDI).

The adoption of e-procurement assist the organization in improving the policy level in terms of helping the police makers in understanding the interaction and impact of the policy in the procurement system, and also improve the performance of the Government practices as e-procurement infrastructures leads to the achievement of organizations objectives (Njeru *et al.*, 2016).

According to Siedschlag & Haller, (2008), strong competition pressure force firms to adopt electronic procurement and organizations with high returns once adopting the technology before others will be the early adopter of the new generated technology, while organization with low rate of returns will be the late adaptors.

2.3.3.1 Organization Structure

It has been document that, organization structure influence the adoption of electronic procurement, as the adopting new system have been seen essential for any organization to remain competitive, but mostly of employee fear of adopting the new technology once found that technology could have an impact on their performance (Prussia *et al,.*2008). According to Rahman, (2017) the success of any new system employed within the organization, mostly need the efficient process at the level of internal workflow, as the achievement of electronic procurement is also influenced by the attainment of compliance by the internal users, in the sense that there should be a customer satisfaction as a key consideration (Croom & Johnston, 2003). The adoption of electronic procurement has to be down with the top down approach (Siedschlag *et al.,* 2008)

2.3.3.2 Motivation

The success of any organization to meet its objectives was made possible if the organizations influence their employee, motivation is one of the engine for the organization to adopt for the new system emerged as employees who have been motivated are assured of getting security and protection on their daily operation, and hence ignorance to move into a new system will be low and employee will be motivated to initiate new ideas. Motivating worker enable works to be done willingly and easy, thus organization of works is simplified and human relationship improved (Chopra, 2002).

2.3.3.3 Team work

Teo, *et al, (*2009) have documented that, there is a relationship between team work in the organization and the adoption process of technologies. Gunaseharan *et al.,*(2009) pointed that, through team work, organization can have various important attributes like, trust which means, the more the core workers trust each other, the more they can

work together to adopt any new technology. According to Ellram & Zsidisin, (2002), any good and close relationship in the organization can make buyers (in this study – the organization) and suppliers (those who supplies technology), can lead high chances of adopting the electronic procurement and there for documented to have a positive relationship. This was also found that, team work is important in creating cooperation among the individuals in the organization that can lead in adoption of electronic procurement.

2.3.3.4 Leadership style

Study conducted by Gunaseharan *et al.*, (2009), revealed that, within the organization, there is a relationship between leadership style and the adoption of electronic procurement. Organization with good leaders will not hesitate to influence their member on adopting the new system and keep encourage them on good results which will be obtained thereafter (Gunaseharan *et al.*2009). Working relationship will be optimized to achieve better and common results, and employees will be encourage to adopt electronic procurement as they are well aware with the benefit which will be gained**.** Quality business excellences have been influenced by a good leadership style and enable the organization to sustain in a competitive environment (Bohoris, 2007).

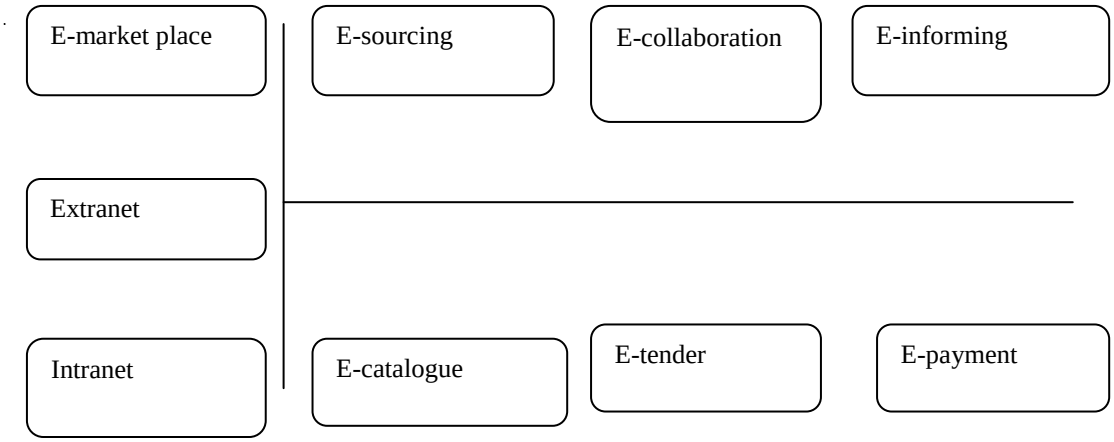
2.3.4 Level of E-procurement

It has been revealed by Siedschlag& Haller, (2008) that, the adoption new technology depends much on how information is spread concern its availability which helps to reduce uncertainty of the new technology, and also individuals has being described as the most conservative, traditional, suspicious and risk oppose when they meeting innovation, the adoption will be successful once observed it has been adopted by other members (Ya-Huei Wu, 2015). In that sense, the marginal rate of acquiring new technology decreases with the increased numbers of previous adaptors. This means status of e-procurement adoption was determined by measuring to what extent one organization have been able to adopt electronic procurement.

According to Hassan, *et al.,* (2014), e-procurement practices range from information facilitates and transaction facilitating which all together is influenced with the internet infrastructure such as e-market place, extranet and Intranet.

Figure 2.1 level of e-procurement

Information perspectives



Transaction perspectives

Source; Hassan, (2014)

2.3.5 Challenges associated with e-procurement adoption

The adoption of electronic procurement change the system of doing work within an organization in that sense there are challenge which associate with the process of installing the system and implementing the system

2.3.5.1 Compatibility

Any company would engage on the use of e-procurement once found that the network that links one organization with another is compatible, reliable and secured, according to Dooley (2006) suppliers and buyers were influenced to use electronic procurement technology once the electronic networks are highly integrated.

2.3.5.2 Supplier readiness

Given the presence of multiple suppliers in the business arena, it is important for the organization to look for the qualifies supplier who are willing to operate with the organization, it is essential for the supplier to show interest of adopting and use the technology, it has been observed that, most of firms are not aware in determining the most appropriate application to use which connects both partners (Cox , 2001). Benefits of e-procurement can be realized once the application is fully integrated within members in a supply chain and the supplier has the capability to deal with the system.

2.3.5.3 Engineering capacity of the Organization

According to Rosenberg (2001) the more the advanced level of the new technology idea the less the implementation level, and that in turn it will take much time for the idea to be implemented in the organization, This means that the diffusion of new technology should be compatible with the in-house capacity so as to speed up the adoption, as documented by soliman and Yousef (2001) any strategy within Organization will be implemented once its aim and context have been specified and understood within each member which improve performance and competitive advantages. The internet can become a source of competitive advantage if it has been found to align with the overall business strategy of the organization and provide the easiness of use to the people who use it.

2.3.5.4 Fund Availability

The adoption of new technology need resources availability on its investment, larger organization are in a good position to acquire needed resources for the new technology installation more than small organization, However the adoption of new technology may be at a lower rate in large organization because of multiple level of bureaucracy which tends to slow the decision (Dorfman,2000).

2.4 Empirical Studies

According to Davila and Palmer (2003) on their research on “E-procurement in the United Nations: influences, issues and impact", they revealed that, adoption of the e-procurement depends on the organization factor, internal readiness, supply factor and policy factor, which all together will depend on the Digital divide which explore there is a difference in internet access between one country another, and there is increasing awareness that internet usage and e-business is limited for suppliers in some countries

Gunaseharan *et al.,* (2009) on the study of “adoption of e-procurement in Hong Kong; An empirical research, the study indicate that e-procurement solutions increase the effectiveness of purchasing activities in terms of reduction of cost and time (cycle time). Also the study revealed that e-procurement adoption in china change the way businesses purchase goods and services due to the application of electronic data interchange and the internet in procuring goods and services

The study conducted by Teo *et al,(*2009) on “adopters and non- adopters of e-procurement in Singapore: an empirical study, revealed that through using logistic regression model the study found that the size of the firm, support from top management, perceived indirect benefits, and influence by business partner are positively and significantly associated with adoption of e-procurement in Singapore.

According to Davila *et al* (2003) on the paper of “moving procurement systems to the internet: The adoption and use of e-procurement technology models the paper suggest that the use of e-procurement technologies will become very important aspect of supply chain management and doing so the increase rate of adoption will be accelerated by aggressive adopters through sharing their experiences.

Mahdillo and Akbary (2014) on the study of “ e-procurement adoption, its benefits and costs”, found that the adoption of e-procurement in an organization improve the performance of supply chain management through value creation, efficiency and transparency allowing the companies to simplify the procurement processes and be

able to reduce overheads and all costs associated with purchasing process. Moon (2003) found that the state government that adopt e-procurement tools tend to be larger, managerially innovative and is required to have strong centralized procurement office.

Gunaseharan *et al* (2009) on the study of e-procurement adoption in the south cost, the study focus on the current state of e-procurement by examining things which influence e-procurement adoption. The study revealed that the uses of e-procurement can benefits on cost savings and increase effectiveness of operations

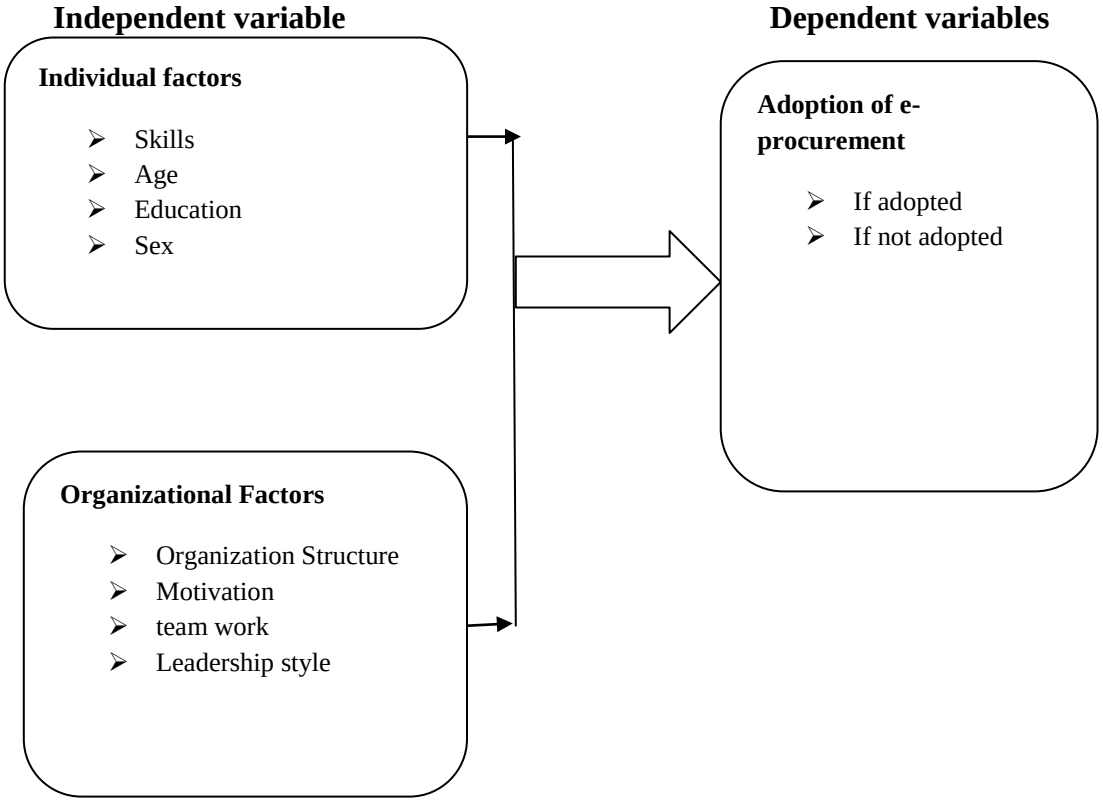
The study conducted in Kenya by Koech and Ayoyi (2016) on the factors influencing adoption of e-procurement in Kenya's public sectors, the study found that enforceability/legality electronic contracts is the critical determinant of adoption of e-procurement in Kenya, also the study revealed that resistance to change and leadership which are cultural issues is among of critical barrier of adoption of e-procurement in public sector in Kenya

2.5 Conceptual Frame work

This conceptual framework indicate objective one (1) which is determinants of individual factors on e-procurement adoption and objective two (2) which is determinants of organizational factors on e-procurement adoption as this two objectives baesd on factors for electronic procurement adoption

The conceptual frame work provided the understanding of the relationship between variable which denotes the influence of the independent variable to dependent variable regarding the whole model (Krishnaswami, 2003). In the sense that, how individual factors and organizational factors (As independent variables) influenced the adoption of electronic procurement (as dependent variable) as indicated in figure 2.2

Figure 2.2 Conceptual framework



Source; (Researcher own construct, 2017)

From the conceptual framework the linkage between variables of interest in this study is clearly shown in the figure 2.2 above. The **independent variables** according to this study involved the determinant of e-procurement in terms of individual factors and organizational factors. Individual factor is one of the variable influenced e-procurement which was measured by the skills of employees, age of and individual, technical knowledge and sex. The same apply to the organizational factors which were measured in terms of organization structure, motivation, teamwork and leadership style, meaning that adoption of e-procurement in an organization was influenced by the organizational factors.Meanwhile in the context of the above conceptual framework in figure 2.2**dependent variables** were measured in terms of if organization adopted and if not adopted.

2.6 Hypothesis of the Study

Hypothesis related to individual factors and adoptions of e-procurement are;

H01; there is no significance relationship between individual skills and adoption of e-procurement

Ha1; There is significance relationship between individual skills and adoption of e-procurement

H02; there is no significance relationship between individual age and adoption of e-procurement

Ha2; There is significance relationship between individual age and adoption of e-procurement

H03; there is no significance relationship between education and adoption of e-procurement

Ha3; There is significance relationship between education and adoption of e-procurement

H04; there is no significance relationship between sex and adoption of e-procurement

Ha4; There is significance relationship between sex and adoption of e-procurement

Hypothesis related to organizational factors and adoptions of e-procurement are;

H01; there is no significance relationship between organizational structure and adoption of e-procurement

Ha1; There is significance relationship between organizational structure and adoption of e-procurement

H02; there is no significance relationship between employee motivation and adoption of e-procurement

Ha2; There is significance relationship between employee motivation and adoption of e-procurement

H03; there is no significance relationship between teamwork and adoption of e-procurement

Ha3; There is significance relationship between teamwork and adoption of e-procurement

H04; there is no significance relationship between leadership style and adoption of e-procurement

Ha4; There is significance relationship between leadership style and adoption of e-procurement

2.7 Research Gap

Most of the researches on e-procurement have been done in Tanzania to analyze e-procurement adoption risk, challenges and value addition in organizations, hence in this study the researcher went deeper to analyze factors influencies e-procurement adoption by comparing public entity such as TANESCO and private entity such as TBL.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1Introduction

From this chapter the methodology used in this study has been presented and also provision of the justification and description of the, study area, Research design population and sampling frame, units of analysis, variables and their measurements, sample size and sampling techniques, types and sources of data, data collection methods, validity issues, data analysis, and ethical concern The chapter also, presented binary logistic regression model employed in analyzing the factors influencing the adoption of e-procurement in an organization

3.2 Study Area

The study was conducted in Dar es Salaam at Tanzania Breweries Limited (TBL) and TANESCO in Dar es Salaam.TBL Company was selected because it is among of the Private organizations in Tanzania practices the use of e-procurement in all procurement activities. So that by selecting TBL it enabled the researcher to obtain the relevant information concern the adoption of e-procurement in an organization. Also TANESCO was selected because it is among of public procurement entity having the largest volume of procurement which is above 20 billion Tanzania shillings but not yet adopting electronic procurement (PPRA,2017).

3.3 Research Design

Cross-sectional design was used because the researcher intended to collect data to the respondents in Tanzania Breweries Limited and TANESCO only once without repeating the same phenomena. Also cross-sectional design made it possible for the researcher to collect enough amounts of data needed and from the sizeable population in a cost-effective way.

The same kind of the research design have been revealed to assist the researcher by giving more control over the research process (Saunders *et al.* 2005).

3.4 Unit of analysis

In this study unit of analysis comprised two organizations TBL and TANESCO. This is because as the unity of analysis the researcher used two organizations which will generalize public and private institutions.

3.5 Study Population

The targeted population in this study comprised of Procurement management unit (PMU), tender board, IT department, stores department, accounting and finance department and other user department they were used as key informants so as to get the important information and to ease the discussion of the variables in the study. It was also important to use knowledgeable respondents who were directly involved in procurement activities.

3.6 Sampling technique and sample size

The researcher used non- probability sampling techniques because not every element in the population had chances to be selected . Under non-probability sampling, purposive sampling method was used. In purposive sampling method, the researcher purposely targeted procurement management unit,Tender board,IT depaortment, store department accounting and finance departpment, as they were believed to be reliable, direct involved and knowledgeable for the study. Non probability sampling procedure provided a range of options to the researcher to select samples based on researcher's subjective judgment (Magigi, 2015).

3.6.1 Sample size

Sample size used in this study comprised of 106 respondents who comprised of procurement management unit,Tender board,IT depaortment, store department

accounting and finance department of which 52 respondents were from TBL and 54 respondents were from TANESCO from the total population of 184 from TANESCO and 66 population from TBL Respondents from each organization were considered to be optimal that aimed to meet the requirement of efficiency reliability and representativeness (Kothari, 2004). Table 3.1 below indicate how sample size was drawn from each organization.

Table 3.1 Sample size composition

TANESCO			**TBL**		
SECTION	**POPULATION**	**SAMPLE SIZE**	**SECTION**	**POPULATION**	**SAMPLE SIZE**
PMU	50	21	PMU	11	10
TENDER	7	3	TENDER BOARD	7	3
IT	15	6	IT	10	10
STORES	10	4	STORES	9	9
ACCOUNTING AND FINANCE	92	16	ACCOUNTING AND FINANCE	16	10
USER DEPARTMENT	10	4	USER DEPARTMENT	15	10
TOTAL	**184**	**54**	**TOTAL**	66	**52**

3.7 Type of data

There were two approach used in data collection method included primary data collection and secondary data collection. Researcher used both primary and secondary data type. These types were distinguished as follows:

3.7.1 Primary data

Primary data were the information collected in the first time; they were collected direct by the research from the area of study after a particular purpose arises (Saunders *et al.,* 2007).

The type of primary data collected include questionnaires which were submitted to respondents, and these data were used because it provided actual and current information concerning the study.

3.7.2 Secondary data

This data were collected with the use of various publications and records from procurement department trough documents related to procurement that were very valuable to the study specifically were consulted during the course of research from department's journal. Data were extracted through reviewing of different purchasing documents such as requisition to purchase, local purchase order, delivery note and goods received note. In addition, the secondary data provided historical reference of other past related studies.

3.8 Data collection techniques

The choice of the data collection tool used in this research was selected by considering how best the tool can serve the purpose of this study, of which the preferable selected data collection tool involved questionnaires which were supplemented by the documentary review.

3.8.1. Questionnaire

The researcher prepared questionnaires which were used as an instrument of extracting information useful in the study. Questionnaires in this study were structured mainly to focus on obtaining information concerning the adoption of e-procurement in TBL and TANESCO, and the reason for choosing questionnaire in this study was because the researcher expected questionnaire to help in examining and obtaining necessary information concerning the study. Also the questionnaire designed cover all specific objectives which facilitated to gather all the intended information of the adoption of e-procurement in the organization, both close and open ended questions were formulated. All four Specific objectives were used under this type of data collection method.

3.8.2. Documentary Review

Among documentary sources used in this study includes journals and magazine and other available library materials. On other hand official files such as purchasing file, and research report, annual report were used. Other sources of secondary data provided by organization were used such as, requisition to purchase, Local purchase order, Delivery note and Goods received note. These sources helped the researcher to justify some supportive measures to be included in the research report.

3.9 Reliability and validity of the data

3.9.1 Reliability

Ability in which an instrument measure the same way each time it is used under the same condition with the same subject. Reliability in this research was measured by considering the Cronbach alpha coefficient of which it was found to be above 0.7 as it indicated that data measured what was intended to measure each time.

Table 3.2 Reliability

ITMES	Cronbach's Alpha
Skills factors	.911
Age factors	.910
Education factors	.920
sex factors	.933
organizational structure	.912
Motivation	.913
team work	.926
leadership style	.913

Research findings, (2018)

3.9.2 Validity

This is the ability of the instrument to measure consistently the phenomenon it is designed to measure. Researcher ensured validity by making sure that research objectives match with the results observed

3.10 Measurement of variables

3.10.1 Objective one: Individual influence variables

Table 3.3 shows explanatory variable, measurements, in electronic procurement adoption, and the reference of the individual factors variables. These variables were used to analyze the influence of Individual factors on the adoption of electronic procurement in an organization.

Table 3.3 measurements of individual variables

Variable	**Description**
Technical skills	1. if respondent has technical skills 2. if respondent has no technical skills
Education	Education level of employees
Sex	1 Female 2 Male
Age	Continuous: Number of years

3.10.2 Objective two: Organizational influence variables

Table 3.4 shows explanatory variable, measurements, in electronic procurement adoption, and the reference of the organizational factors variables. These variables were used to analyze the influence of organizational factors on the adoption of electronic procurement in an organization

Table 3.4 measurements of organization variables

Variable	Description
Organization structure	1. if decisions are made from high level to low level 2. if decisions are made from low level to high level
Motivation	1. if motivations are provided 2. if motivations are not provided
Team work	1. if there is interdepartmental relationship 2 if there is no interdepartmental relationship
Leadership style	1 Innovation 2 Better performance

3.11 Data Analysis

3.11.1 Qualitative analysis

The qualitative approach entails analysis of data through describing and analyzing them (comparing them and aggregating into themes). The analysis of qualitative data started after the data collected through questionnaires whereby important concept which occurs frequent were analyzed, and the relationship among the concepts (themes) were developed.

3.11.2 Quantitative analysis

The quantitative approach involved manipulation of numbers, use of tables of frequencies and percentages. All the information /findings were processed by the help of Statistical Package for Social Sciences (SPSS) version 20. Various descriptive

statistics such as frequency distribution, and chi – square were used to examine the data pattern. This helped to provide a useful historical account of a return behavior of each variable which were used in this study before including the variable to logistic regression model.

3.11.2.1 Descriptive statistics

Descriptive statistics were used to analyze the data in objective three (3) and objective four (4) through using frequency table which show the frequency and percentage of response of the respondents.

3.11.2.2 Inferential statistics

In this study the main statistical operations performed by using inferential statistics are binary logistic regression model. Binary logistic regression model was used to compare the relationship between independent variable which are individual factors (individual skills, age, education and sex), and organizational factors (organization structure, employee motivation, teamwork and leadership style) with the dependent variable adoption of e-procurement. The inferential statistics is performed specifically in objective one (1) and objective two (2) only.

3.11.2.3 Binary logistic regression model

Objective one; Individual factors variable

Inferential statistics such as binary logistic regression model was performed in order to determine the influence of independent variable individuals factors (individual skills, age, education and sex) towards the dependent variable adoption of e-procurement. The dependent variable was treated in binary response measuring whether the organization adopted e-procurement or not. For this case a dummy variable was created 1= if adopted e-procurement and 0= if not adopted e-procurement.

Logit (Y) = a +β_1SK+β_2AG+β_3ED+β_4SE……..1

Where by

Logit (Y) = is a probability of e-procurement adoption ranging from 0 to 1;

a = constant term,

SK= Skills

AG= Age

ED= Education

Se = Sex

β_1+β_2+β_3+β_4 =coefficient of independent variables showing its effect on the dependent variable

Hypothesis related to individual factors and adoptions of e-procurement are;

H01; there is no significance relationship between individual skills and adoption of e-procurement

Ha1; There is significance relationship between individual skills and adoption of e-procurement

H02; there is no significance relationship between individual age and adoption of e-procurement

Ha2; There is significance relationship between individual age and adoption of e-procurement

H03; there is no significance relationship between education and adoption of e-procurement

Ha3; There is significance relationship between education and adoption of e-procurement

H04; there is no significance relationship between sex and adoption of e-procurement

Ha4; There is significance relationship between sex and adoption of e-procurement

Objective 2; Organizational factors variable

Hence the hypothesis were tested by using binary logistic regression model which tested alternative hypothesis one (1) up to alternative hypothesis four (4), and the results are shown in table 4.5 regression output of the influence of individual factors towards adoption of e-procurement.

Furthermore in order to assess the influence of organizational factors (organization structure, employee motivation, teamwork, and leadership style) towards adoption of e-procurement in objective two (2) the researcher used binary logistic regression model. The dependent variable was treated in binary response measuring whether the organization adopted e-procurement or not. For this case a dummy variable was created 1= if adopted e-procurement and 0= if not adopted e-procurement.

Logit (Y) = $a + \beta_1 OG + \beta_2 EM + \beta_3 TW + \beta_4 LS$……………………………………..2

Where by

Logit (Y) = is a probability of e-procurement adoption ranging from 0 to 1;

a = constant term,

OG= Organization structure

EM= Employee motivation

TW= Team work

LS = Leadership style

$\beta_1+\beta_2+\beta_3+\beta_4$ = coefficient of independent variables showing its effect on the dependent variable.

Hypothesis related to organizational factors and adoptions of e-procurement were tested as indicated below and results were shown in table 4.7 on regression output

H01; there is no significance relationship between organizational structure and adoption of e-procurement

Ha1; There is significance relationship between organizational structure and adoption of e-procurement

H02; there is no significance relationship between employee motivation and adoption of e-procurement

Ha2; There is significance relationship between employee motivation and adoption of e-procurement

H03; there is no significance relationship between teamwork and adoption of e-procurement

Ha3; There is significance relationship between teamwork and adoption of e-procurement

H04; there is no significance relationship between leadership style and adoption of e-procurement

Ha4; There is significance relationship between leadership style and adoption of e-procurement

3.12 Ethical Concerns

It was important to look at ethical issues in relation to each stakeholder in the research. The stakeholders in this research were the research participants or subjects from the visited institutions during data gathering. The researcher seek informed consent from the respondents, by explaining to them objective of the study, as well as the relevance and usefulness of the research to their institutions. The researcher also protected and maintained confidentiality and anonymity of the information gathered from the respondents. This was implemented during data collection, analysis and during reporting. Furthermore, a permission to conduct the research was sought from the University and other authorities involved. Moreover, data were collected wholly and objectively.

Research ethics specified the way researchers should conduct themselves when they investigate fields. All those with a direct and indirect involvement in a research study generally, were considered as research participants, hence stakeholders, (Kumar, 2011)

CHAPTER FOUR

PRESENTATION OF THE FINDINGS

4.1 Introduction

This chapter presents the findings and analysis made under this research study. Data are presented, analyzed basing on the study objectives which were to determine the influence of individual factors on e-procurement adoption in an organization, to determine the influence of organizational factors on e-procurement adoption in an organization, to assess the level of e-procurement adoption in an organization and to examine the challenges facing e-procurement adoption in an organization. IBM SPSS version 20 was used to analyze the presented data. The researcher during data collection distributed 106 questionnaires in TANESCO and TBL, which comprise 54 questionnaires and 52 questionnaires respectively. From that distributed questionnaire the researcher were able to collect 50 questionnaires from TANESCO which is equivalent to 92.5% and 50 questionnaires from TBL which is equivalent to 96%

4.2 Demographic characteristics

Demographic characteristics of the respondents help the researcher to determine current position of an employee, experience and age of respondents which helps the researcher to generalize information which provide answers to the research objectives.

4.2.1. Experience level

The finding about experience level of respondents was used by researcher to understanding the role of experienced employees towards influencing the adoption of e-procurement. The following are the results obtained from TANESCO and TBL

4.2.1.1 Experience level of respondents

Table 4.1 indicate that majority of respondents in TANESCO having the experience of 6-10 years equivalent to 50% followed by less than 5 years which represented by

24%, 16-20 years represented by 10%, 11-15 years represented by 10% and more than 20 years represented by 6%. Implies that the organization have experienced employees from 5-10 years which is equivalent to 38% of all respondents. Level of experience of the respondents in TBL have been found to be 6-10 years which is represented by 46% of the respondents, followed by less than 5 years represented by 28% of total respondents, 11-15 years by 16% , 16-20 years represented by 6% and more than 20 years represented by 4% as indicated in table 4.1. This implies that most of experienced employees from TBL are within 5-10years which is equivalent to 37% of all respondents.

Table 4.1 Experience level of respondents

Experience level	**TANESCO n=50**		**TBL n=50**	
	Frequency	Percent	Frequency	Percent
less than 5 years	12	24.0	14	28.0
6-10 years	26	50.0	23	46.0
11-15 years	5	10.0	8	16.0
16-20 years	4	10.0	3	6.0
more than 20 years	3	6.0	2	4.0

Research findings, (2018)

4.2.2 Education level

The findings concerning education level of the respondents was used by the researcher to understanding the contribution of education level of employees towards the adoption of e-procurement. The following are the response from TANESCO and TBL

4.2.2.1 Education level of respondents

The results shows that a total of 05 respondents equivalent to 10% of respondents had other qualifications, 10 respondents equivalent to 20% had masters qualification, 20 respondents equivalent to (40%) of the total respondents had a bachelor degree

education level, 12 respondents equivalent to (24%) of the total respondents had diploma level, and 3 respondents equivalent to 6% of respondents had certificate level refer to the table 4.2. implies that, most of employees in TANESCO are fall under Bachelor degree level of education which is equivalent to 40% of all respondents and this means that there are educated employees in the organization. also table 4.2 shows that, the education level of respondents in TBL was 20 respondents equivalent to 40% Bachelor degree, 12 respondents equivalent to 24% Master's Degree, 10 respondents equivalent to 20% diploma, 5 respondents equivalent to 10% certificate level and 3 respondents equivalent to 6% others . implies that most of employees in TBL they have got Bachelor degree and masters level of education which is equivalent to 72% of all respondents.

Table 4.2 Education level of respondents

Education level	**TANESCO n=50**		**TBL n=50**	
	Frequency	Percent	Frequency	Percent
Certificate	3	6.0	4	8.0
Diploma	12	24.0	8	16.0
bachelor degree	20	40.0	20	40.0
Masters	10	20.0	16	32.0
Others	5	10.0	2	4.0

Research findings, (2018)

4.2.3 Age of respondents

Age of respondent's information was used by researcher to understand the contribution of age towards the adoption of e-procurement in an organization. The following are the response from respondents in TANESCO and TBL

4.2.3.1 Age of respondents within organization

The results from the findings as indicated in table 4.3 shows the age of the respondents in TANESCO are 32% of all the respondents were between 21-35 years

old, 56% were between 35 – 55 years old and 12% were above 55 years old. This implies that most employees in TANESCO are found to be elders from 35-55 years which is equivalent to 56% of all respondents and few youth employees equivalent to 32%. Also the results from the findings as indicated in table 4.3 shows the age of the respondents which are 64% of all the respondents were between 21-35 years old, 32% were between 35 – 55 years old and 4% were above 55 years. This implies that most of TBL employees are youth which is equivalent to 64% of all respondents compared to elders which is equivalent to 32% of respondents.

Table 4.3 Age of respondents within organizations

Years	TANESCO n=50		TBL n=50	
	Frequency	Percent	Frequency	Percent
21-35 years	15	32.0	33	64.0
35-55 years	29	56.0	15	32.0
above 55 years	6	12.0	2	4.0

Research findings, (2018)

4.3 Influence of individual factors on e-procurement adoption in Tanesco

The aim of this objective was to determine how e-procurement adoption can be influenced by individual's factors such as individual skills, age, education and sex. The following are the results obtained from the field which were analyzed by using binary logistical regression. And it was hypothesized that there is positive significantly relationship between individual factors and e-procurement in Tanesco

4.3.1 Testing binary logistic regression assumption

Literatures indicate that in order to run binary logistic regression model the assumptions of the model was necessary to be checked in order to avoid deviation from the assumptions. As said by Pallant (2007) that fundamental assumptions regression model must be checked before running regression analysis. The following are the basic assumptions of regression model which were checked by the researcher during data analysis

4.3.1.1 Multicollinearity

For testing this assumption the researcher looked at the predictors (independent variables) in order to see if they not highly correlated each other by looking on correlation matrix table. In predicting dependent variable it was found that there was a problem on independent variables as it indicated by the correlation which is beyond 0.9 (r=9 and above), hence one independent variable was necessarily to be removed. The multicollinearity meant for the independent variables to relate each other softly (r<0.90) (Abbas, 2011). Highest correlation found to be r=0.642 which is below 0.9 from the correlation matrix table 4.4 indicate that there was no multicollinearity as the correlation was very small among variables in this study.

Table 4.4 correlation matrix

	Constant	**Individual skills**	**Age**	**Education**	**Gender**
Skills	-.624	1.000	.077	.474	-.459
Age	-.582	.077	1.000	.107	-.452
Education	-.775	.474	.107	1.000	.006
Sex	.184	-.459	-.452	.006	1.000
	Constant	**Organization structure**	**Employee motivation**	**teamwork**	**Leadership style**
Organization structure	-.531	1.000	.005	.466	-.066
Employee motivation	-.126	.005	1.000	.054	-.641
Teamwork	-.696	.466	.054	1.000	-.074
Leadership style	-.073	-.066	-.641	-.074	1.000

Research findings, (2018)

4.4.2.2 Outlier

Also the researcher looks on outlier in order to test the assumption of binary logistic regression. The outliers in this study were tested by looking on standardized residuals performed in the SPSS and the results show that all the standardized residual values were less than -3 and 3. Anderson (1982) indicates that in order the data to be free from outliers it requires the standardized residual to be within -3 and 3**.**

4.4.1.4 Evaluating of the model

Table 4.4 shows that overall model was statistically significant ($p<0.05$), which indicate the capability of the model to predict that the e-procurement adoption is influenced by the individual factors, also the goodness fit of the model was measured by looking on Hosmer and Lemeshow test which the results indicate that there is goodness fit of the model as p value is greater than 5% ($p>0.05$) as shown in table 4.5.

Furthermore in order to test the usefulness of the model Nagelkerke R^2 and Cox and Snell R square must be observed. For this study the value of Cox Snell R square and Nagelkerke R^2 was 0.620 and 0.857 consecutively. This implying that independent variable (skills, age, education and sex) as indicated in the model explains 62% and 85.7% variance in dependent variable (e-procurement adoption)

Table 4.5 omnibus tests of model coefficients and Hosmer and Lemeshow test

		Chi-square	**Df**	**Sig.**
Step 1	Step	48.314	4	.000
	Block	48.314	4	.000
	Model	48.314	4	.000
		Hosmer and Lemeshow test		
		Chi-square	Df	Sig
		11.486	8	.176

Research findings (2018**)**

Furthermore the results from binary logistic regression between the dependent variable adoption of e-procurement and independent variables such as individual age, gender, individual skills and technical knowledge presented in table 4.6

Table 4.6 Influence of individual factors on e-procurement adoption in TANESCO

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Individual skills	-3.367	1.282	6.896	1	.009**	.034	.003	.426
Age	-.651	1.408	.214	1	.644	.522	.033	8.236
Education	-2.423	1.137	4.541	1	.033**	.089	.010	.823
Sex	.808	.718	1.268	1	.260	2.243	.550	9.155
Constant	13.930	6.425	4.701	1	.030	1120960.573		

Dependent variable: E-procurement adoption (1=if adopted 0=if not adopted**) **** denote significant level

Research findings, (2018)

The results in table 4.6 show that there was a significantly relationship between individual's skills and adoption of e-procurement because the p-value is less than 5% ($p < 0.05$) and the coefficient value is positive 0.567 which indicate that the unit change of individual skills will increase 56.7% of e-procurement adoption. The results support the alternative hypothesis.

As it was obtained from the findings, it was found that there was no statistically significance relationship between age of an individual on adopting e-procurement in an organization, the presented question accept null hypothesis and p-value was greater than 5% ($p>0.05$) as shown in table 4.6

Furthermore the results in table 4.6 indicated that there is positive significantly relationship between education and adoption of e- procurement in an organization as p value was less than 5% ($p<0.05$) and the coefficients value is positive 0.423 which indicate that the unit change of technical knowledge will increase 42.3% of e-procurement adoption . It was hypothesized that there is significantly relationship between individual factors and e-procurement adoption in an organization, the results support alternative hypothesis.

Also in table 4.6 the results shows that there is no significantly relationship between sex and adoption of e-procurement in an organization because the p-value is greater than 5% (p-value > 0.05). Therefore the results reject the alternative hypothesis by accepting null hypothesis.

4.3.2 Regression analysis of individual factors on e-procurement adoption in TBL

Overall model was statistically significant ($p<0.05$), which indicate the capability of the model to predict that the e-procurement adoption is influenced by the individual factors, also the goodness fit of the model was measured by looking on Hosmer and Lemeshow test which the results indicate that there is goodness fit of the model as p value is greater than 5% ($p>0.05$) as shown in table 1 appendix two

Moreover in order to test the usefulness of the model Nagelkerke R^2 and Cox and Snell R square must be observed. For this study the value of Cox Snell R square and Nagelkerke R^2 was 0.613 and 0.848 consecutively. This implying that independent variable (skills, age, education and sex) as indicated in the model explains 61.3% and 84.8% variance in dependent variable (e-procurement adoption). Furthermore the results of binary logistic regression analysis between individual factors skills, age, sex and education on influencing adoption of e-procurement are presented in table 4.7.

Table 4.7 Influence of individual factors on e-procurement adoption in TBL

	B	**S.E.**	**Wald**	**Df**	**Sig.**	**Exp(B)**	**95%C.I.for EXP(B)**	
							Lower	Upper
Individual skills	1.175	1.268	.859	1	.354	3.238	.270	38.871
Age	3.317	1.338	6.148	1	.013**	27.590	2.004	379.808
Education	2.607	1.170	4.961	1	.026**	13.556	1.367	134.383
Sex	-.858	.733	1.371	1	.242	.424	.101	1.783
Constant	-15.798	6.719	5.528	1	.019	.000		

Dependent variable: E-procurement adoption (1=if adopted 0=if not adopted**) **** denote significant level

Research findings, (2018)

The results in table 4.7 indicating that there was no significantly relationship between individual's skills and adoption of e-procurement because the p-value was greater than 5% ($p>0.05$). The results reject the alternative hypothesis and support the null hypothesis.

Meanwhile from the results was found that there was positive statistically significance relationship between Age of an Individual on adopting e-procurement in an organization, the presented question accept alternative hypothesis and p-value was less than 5% ($p>0.05$) as shown in table 4.7

Furthermore the results in table 4.7 indicated that there was positive statistically significantly relationship between Education and adoption of e- procurement in an organization as p value was less than 5% ($p<0.05$). It was hypothesized that there is significantly relationship between individual factors and e-procurement adoption in an organization, the results support alternative hypothesis.

Also in table 4.7 the results shows that there is no significantly relationship between sex and adoption of e-procurement in an organization because the p-value is greater than 5% (p-value > 0.05). Therefore the results reject the alternative hypothesis by accepting null hypothesis.

4.4 Influence of organizational factors on e-procurement adoption in Tanesco

The aim of this objective was to analyze the influence of organization factors towards the adoption of e-procurement, of which organizational factors such as organization structure, motivation factor, team work and leadership were presented to the field so as to obtain information which answers the researcher's objective. Binary logistical regression modal was used to analyze the findings.

4.4.1 Regression results of organizational factors on e-procurement adoption in TANESCO

Table 4.8 shows that overall model was statistically significant ($p<0.05$), which indicate the competence of the model to forecast that the e-procurement adoption is influenced by the organizational factors, also the goodness fit of the model was measured by looking on Hosmer and Lemeshow test which the results indicate that there is goodness fit of the model as p value is greater than 5% ($p>0.05$) as shown in table 4.8

Furthermore in order to test the usefulness of the model Nagelkerke R^2 and Cox and Snell R square must be observed. For this study the value of Cox Snell R square and Nagelkerke R^2 was 0.659 and 0.912 consecutively. This implying that independent variable (skills, age, education and sex) as indicated in the model explains 65.9% and 91.2% variance in dependent variable (e-procurement adoption)

Table 4.8 Omnibus Tests of Model Coefficients and Hosmer and Lemeshow Test

	Chi-square	**Df**	**Sig.**
Step	53.778	4	.000
Block	53.778	4	.000
Model	53.778	4	.000
	Hosmer and Lemeshow Test		
	3.115	7	.874

Research findings (2018)

Also in the table 4.9 indicate the results of binary logistic regression between the dependent variable adoption of e-procurement and independent variables such as organizational structure, employee motivation, teamwork and leadership style.

Table 4.9 Influence of organization factors on e-procurement adoption in TANESCO

	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Organization structure	2.602	1.112	5.476	1	.019**	.074	.008	.655
Employee motivation	-2.404	5.217	.212	1	.645	.090	.000	2491.685
Teamwork	3.275	1.561	4.404	1	.036**	.038	.002	.806
Leadership style	1.381	5.234	.070	1	.792	3.981	.000	113609.813
Constant	17.228	7.485	5.297	1	.021	30352317.444		

Dependent variable: E-procurement adoption (1=if adopted 0=if not adopted**) **** denote significant level

Research findings (2018)

Findings from the field indicated that there is a significance positive relationship between organization structure and the adoption of e-procurement in TANESCO, as it was found that the p-value was less than 5%($p<0.05$) and the coefficients value is positive 0.602 which indicate that the increase improvement of organizational structure will increase the rate of e-procurement adoption as shown in table 4.9 hence, the findings support the alternative hypothesis.

In addition there was not statistically significance relationship between motivating employees and e-procurement adoption, alternative hypothesis was rejected as p-value was greater than 5% ($p<0.05$).

Moreover as indicated in table 4.9 it was found that there was statistically significance relationship between team work within the organization and e-procurement adoption, the results was supported by p-values which was less than 5% ($p<0.05$) and the coefficients value is positive which indicate that the increase of teamwork will increase the rate of e-procurement adoption, of which the result obtained accepted the alternative hypothesis.

Furthermore the results as shown in table 4.9 Indicated that there is no significantly relationship between leadership style and adoption of e-procurement in an organization as p value is greater than 5% ($p>0.05$). It was hypothesized that there is positive significantly relationship between organization factors and adoption of e-procurement in an organization, but the results rejected alternative hypothesis by accepting null hypothesis.

4.4.2 Regression results of organizational factors on e-procurement adoption in TBL

Table 2 in appendix two shows that overall model was statistically significant ($p<0.05$), which indicate the competence of the model to forecast that the e-procurement adoption is influenced by the organizational factors, also the goodness fit of the model was measured by looking on Hosmer and Lemeshow test which the results indicate that there is goodness fit of the model as p value is greater than 5% ($p>0.05$).

Also in order to test the usefulness of the model Nagelkerke R^2 and Cox and Snell R square must be observed. For this study the value of Cox Snell R square and Nagelkerke R^2 was 0.656 and 0.908 consecutively. This implying that independent variable (skills, age, education and sex) as indicated in the model explains 65.6% and 90.8% variance in dependent variable (e-procurement adoption)

Furthermore in the table 4.10 shows the results of binary logistic regression between the dependent variable adoption of e-procurement and independent variables such as organizational structure, employee motivation, teamwork and leadership style

Table 4.10 Influence of organizational factors on e-procurement adoption in TBL

	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Organization structure	.550	2.457	.050	1	.823	1.733	.014	213.709
Employee motivation	2.789	1.106	6.364	1	.012**	16.266	1.863	142.029
Teamwork	3.583	1.523	5.536	1	.019**	35.983	1.819	711.686
Leadership style	.582	2.159	.073	1	.787	1.790	.026	123.166
Constant	-18.923	7.892	5.748	1	.017	.000		

Dependent variable: E-procurement adoption (1=if adopted 0=if not adopted**) **** denote significant level

AS indicated in table 4.10 there was no significance relationship between organization structure and the adoption of e-procurement in TBL, p-value was greater than 5%($p<0.05$). The findings support the alternative hypothesis.

Besides there was statistically significance relationship between motivating employees and e-procurement adoption in TBL, as p-value was less than 5% ($p<0.05$). Alternative hypothesis was accepted. As shown in table 4.10

Additionally as indicated in table 4.10 it was found that there was statistically significance relationship between team work within the organization and e-procurement adoption, the results was supported by p-values which was less than 5% ($p< 0.05$) and the coefficients value is positive which indicate that the increase of team work will increase e-procurement adoption in TBL, of which the result obtained accepted the alternative hypothesis.

Also the results as shown in table 4.10 indicated that there was no statistically significantly relationship between leadership style and adoption of e-procurement in TBL as p value is greater than 5% ($p>0.05$). It was hypothesized that there is positive significantly relationship between organization factors and adoption of e-procurement

in an organization, but the results rejected alternative hypothesis by accepting null hypothesis.

4.5 Level of e-procurement adoption in an organization

On this objective the researcher wanted to obtain information on level of e-procurement adoption in organizations, whether if organizations are in information level or transactional level on e-procurement adoption and what e-procurement tools are used in information level and transaction level. The following are the results obtained from the findings

4.5.1 Level of e-procurement adoption in TANESCO and TBL

The results in table 4.11 shows that 60% of all respondents agreed that in TANESCO is in information level of e-procurement adoption, 16.7% of all respondents agreed that the level of e-procurement adoption in TANESCO is Transaction level and 23.3% of all respondents agreed that there is no adoption of e-procurement in TANESCO in terms of information level and transactional level, while for the case of Tanzania Breweries Limited (TBL), results shows that 80% of respondents agreed that the organization was in transactional perspectives while 12% of respondents agreed that the organization is in information perspectives and 8% of respondents said that the organization is neither in transaction perspectives nor information perspectives as indicated in Table 4.13. Implies that in TANESCO 64% of all respondents which is the greatest percentage indicate that the organization is in the preliminary stage of e-procurement adoption which is greater than 22% of all respondents who said the organization is in transaction perspectives while in TBL the results shows that the organizations was in transaction perspective in e-procurement adoption by 80% which is the highest stage of e-procurement adoption. It means that the Organization is implementing the e-procurement system in most of its procurement proceedings.

Table 4.11 level of e-procurement adoption in TANESCO

Level	TANESCO N=50		TBL N= 50	
	Frequency	Percent	Frequency	Percent
Information perspective	32	64.0	4	8.0
Transaction perspective	11	22.0	40	80.0
None	7	14.0	6	12.0
Total	50	100.0	50	100.0

Research findings (2018)

4.5.3 E-procurement information perspective tools used in TANESCO

From table 4.12 concerning information tools used in TANESCO results from respondents indicated that, 68% of respondents agreed that e-informing is highly used in an organization, 22% of respondents agreed that e-informing is moderately used while 10% of respondents also said that there is a low rate of e-informing usage in an organization. On e-collaboration tools 42% of respondents said that there is a high usage of e-collaboration in an organization and 34% of respondents said there is a low rate usage of e-collaboration while 24% of respondents said there is medium usage of e-collaboration in an organization.

Also on the other information tool which is e-sourcing the results obtained from the field indicated that, 36% of respondents agreed that e-sourcing is highly used in an organization and 34% of respondents agreed that e-sourcing is moderately used, while 30% of respondents said that there is a low rate of e-sourcing practice in an organization.

Table 4.12 E-procurement information perspective tools used in TANESCO

Response	e-informing tools	e-collaboration	e-sourcing
Low	11(22%)	17(34%)	15(30%)
High	34(68%)	21(42%)	18(36%)
Medium	5 (10%)	12(24%)	17(34%)
Total frequency and percentage	50(100%)	50(100%)	50(100%)

Research findings, (2018)

From the table, by 68% of respondents means that, the highest response was shown in the use of e-informing tools compared to the use of other information perspectives tools such as e-collaboration and e-sourcing, and the lowest percentage used of information tools is in e-collaboration tool as indicated by 24%.

4.5.4 E-procurement transactional perspective tools used in TANESCO

questionnaires were presented to TANESCO concern the usage of three transaction tools which are e-payment, e-tendering and e-catalogue and the results from the field indicated that, 12% of respondents agreed that e-payment is highly practiced in an organization and 14%of respondent said that there is a medium usage of e-payment system in an organization and also 74%of respondents said that e-payment system is used in a lower rate. On e-tendering practice results indicated that, 30% of respondents agreed that e-tendering is highly practiced in an organization, 10% of respondents said that there is a moderate usage of e-tendering while 50% of respondents said that there is low usage of e-tendering in an organization. Also on e-catalogue practice the results from the field indicated that, 12% of respondents agreed that e-catalogue is highly practiced in an organization, 28% of respondents said that there is moderate usage of e-catalogue while 48% said that there is a low rate of e-catalogue usage in an organization as indicated in table 4.13

Table 4.13 E-procurement transactional perspective tools used in TANESCO

Response	E-payment	E-tendering	E-catalogue
Low	37(74%)	25(50%)	24(48%)
High	6(12%)	15(30%)	12(24%)
Medium	7(14%)	10(20%)	14(28%)
Total frequency and percentage	50(100%)	50(100%)	50(100%)

Research findings, (2018)

From the table the use of transactional e-procurement tools are in the lowest rate which is equivalent to 82% of all respondents.

4.5.5 E-procurement information perspective tools used in TBL

Results in table 4.14 indicated that,66% of respondents agreed that e-informing is highly used in an organization, 24% of respondents agreed that e-informing was used in low rate in an organization and 10% of respondents also said that there is a moderately usage of e-informing in an organization. On e-collaboration tools 74% of respondents said that there is a high usage of e-collaboration in an organization and 14% of respondents said there is a moderate usage of e-collaboration while 12% of respondents said there is low rate usage of e-collaboration in an organization.

In usage of e-sourcing the results obtained from the field indicated that, 76% of respondents agreed that e-sourcing is highly used in an organization and 14% of respondents agreed that e-sourcing is low rate usage, while 12% of respondents said that there is a moderately usage of e-sourcing practice in an organization

Table 4.14 E-procurement information perspective tools used in TBL

Response	e-informing tools	e-collaboration	e-sourcing
Low	12(24%)	7(14%)	7(14%)
High	33(66%)	37(74%)	38(76%)
Medium	5(10%)	6(12%)	5(10%)
Total frequency and percentage	50(100%)	50(100%)	50(100%)

Research findings, (2018)

From the table, results indicate that there is higher rate of information perspectives usage such as e-informing, e-collaboration and e-sourcing in TBL

4.5.6 E-procurement transactional perspective tools used in TBL

Table 4.15 indicating the rate of e-procurement transactional tools used in TBL, results from respondents' shows that, 44% of respondents agreed that e-payment is highly used in an organization, 32% of respondents agreed that e-payment was low rate used while 24% of respondents also said that there is moderate usage of e-payment in an organization. On e-tendering tools 78% of respondents said that there is a high usage of e-tendering in an organization and 16% of respondents said there is a moderate usage of e-tendering and 6% of respondents said there is low rate usage of e-tendering in an organization.

The results of e-catalogue usage in TBL indicated that, 66% of respondents agreed that e-catalogue is highly used in an organization and 20% of respondents agreed that e-catalogue is moderately used, while 14% of respondents said that there is a low rate of e-sourcing practice in an organization

Table 4.15 E-procurement transactional perspective tools used in TBL

Response	e-payment	e-tendering	e-catalogue
Low	16(32%)	6(6%)	7(14%)
High	22(44%)	39(78%)	33(66%)
Medium	12(24%)	8(16%)	10(20%)
Total frequency and percentage	50(100%)	50(100%)	50(100%)

Research findings, (2018)

From the table highest response was shown in the use all transactional tools such as e-payment, e-tendering and e-catalogue in the TBL which is equivalent to 94% of all respondents.

4.6 Challenges facing e-procurement adoption in an organization

This objective aimed to analyze challenges that organization faces on e-procurement adoption, at this part the researcher presented questions to Tanzania Breweries limited (TBL) on challenges that organization face when implementing the system and other questionnaires were presented to TANESCO concern challenges on adopting of e-procurement, implementation challenges were grouped into three includes system compatibility, supplier readiness and engineering capacity of employees.

4.6.1 Challenges for e-procurement implementation (TBL)

As indicated in table 4.16 results show that, 72% of respondents agreed that system compatibility is the challenge on implementing e-procurement system in an organization while 28% of respondent disagree on system compatibility as the challenge of e-procurement implementation. Other information obtained on supplier readiness results indicated that, 76% of respondent agreed that supplier readiness is the challenge facing organization on implementing e-procurement and 12% of respondents disagree on supplier readiness as the implementation challenge facing the organization.

Also 86% of respondent disagreed that engineering capacity is the challenge facing the organization on e-procurement implementation while 14% of respondents agreed engineering capacity as the challenge facing the organization on implementing the system.

Table 4.16 Challenges for e-procurement implementation (TBL)

Response	System compatibility	Supplier readiness	Engineering capacity
Agree	36(72%)	38(76%)	7(14%)
Disagree	14(28%)	12(24%)	43(86%)
Total frequency and percentage	50(100%)	50(100%)	50(100%)

Research findings (2018**)**

From the table the most challenges that TBL face on the implementation of the system are system compatibility and supplier readiness which is equivalent to 81% of all respondents

4.6.2 Challenges for e-procurement adoption (TANESCO)

As shown in table 4.17 Indicated that 66% of all respondents agreed that availability of fund is among of challenges facing the adoption of e-procurement in an organization and 34% of all respondent disagree, 80% of all respondents agreed that electronic infrastructure is among of the challenges facing the organization to delay in adoption of e-procurement and 20% disagree. Also in the table 4.17 Shows that 78% of all respondents disagree that organizational culture is challenge facing adoption of e-procurement in an organization and 22% agreed that organization culture is among of challenges facing adoption of e-procurement in an organization.

Table 4.17 Challenges for e-procurement adoption (TANESCO)

Response	Fund	Electronic infrastructure	Organizational culture
Agree	33(66%)	40(80%)	11(22%)
Disagree	17(34%)	10(20%)	39(78%)
Total frequency and percentage	50(100%)	50(100%)	50(100%)

From the table the most common challenge that TANESCO face on the process of adopting e-procurement system was found to be electronic infrastructure and fund which is equivalent to 73% of all respondents.

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

5.1 Introduction

This chapter provider the discussion of the research findings based on the specific objectives of this research which were to determine the influence of individual factors on e-procurement adoption in an organization, to determine the influence of organizational factors on e-procurement adoption in an organization, to assess the level of e-procurement adoption in an organization and to examine the challenges facing e-procurement adoption in an organization

5.2 Influence of individual factors on e-procurement adoption

This objective aimed to find out if individual attributes among employees have got any relationship with adopting electronic procurement in an organization, individual factors in this research were analysed by considering four indicators which were education, individual skills, age and gender.

The results from the research findings revealed that adoption of electronic procurement in TANESCO is influenced by the individual factors in an organization, as this has been hypothesized that there is significantly positive relationship between education and individual skills with e-procurement adoption as the p value less than 5% ($p>0.05$).This implies that, the adoption of e-procurement in TANESCO influenced by education level of employees such as having bachelor degree and other highest level of education like masters in that sense employees who having highest level of education such as bachelor degree their ability to learn is very faster compared to those with low level education. The study was aligned with the study done by Caselli & Coleman, (2001), who found that organization's rate of electronic usage system is viewed on workers ability in terms of their education level.

This indicate that, possession of highest education by an individual in the particular field leads to the increased adoption of electronic procurement

Also individual's skills influence the adoption of e-procurement in TANESCO which implies that the employees who have skills concerning the use of different software's such as e-procurement software and others computer software was able to adopt quickly the any changes of information communication technology such as e-procurement adoption. So that the employees who have knowledge of how to use computer applications they become competent during adoption of e-procurement in TANESCO, because –e-procurement application it require to have the employee who are familiar with using computer. The study supported by Mchopa, (2012) that, the success implementation of e-procurement system selected requires expertise from both supplier entity and the buying organization, who are in charge in day to day procurement operation, indicating that increasing the adopting the changing environment increase organization's efficiency, and also for the organization to gain e-procurement benefits employees should accept technological changes and be read to learn on new system that raise (Makoba *et al*,.2017). Also the study was aligned with technology acceptance theory which indicates that smooth adoption of new technology it requires the involvement of employee to accept.

However the study failed to find the existing relationship between individual factors age and gender in influencing the adoption of e-procurement in TANESCO because the p value is greater than 5% ($p > 0.05$). Hence the null hypothesis was accepted and alternative hypothesis was rejected. Implies that age people such as elder people and young people cannot influence the adoption of e-procurement which was contrary to the study done by Meyer, (2007) which found that the adoption of e-procurement in organization is influenced by the individual age of the employees by considering that the youth or younger people in the organization were capable to adopt easily the new changes of technology such as the use of e-procurement compared to the elder people, as from the demographic result indicated that age of employees at TANESCO many

fall under 35-55 years. Also the study was contrary to the study of Raufu, (2014) who found that there is influence of gender (Male and female) in adoption of new technology in an organization by observing that male were able to adopt the new changes of technology very faster compared to female.

For the case of TBL the results indicated that the influence of e-procurement adoption was influenced by the individual factors age and education because the p value was less than 5%. So that there is significance relationship between age and e-procurement adoption hence alternative hypothesis was supported. This implies that age of people in an organization influence the adoption of e-procurement; normally the youth or younger people in the organization were able to learn very quickly due to the ability of youth to think critically and faster compared to elder people. Also the capability of youth to adopt easily the new changes of technology such as the use of e-procurement was very faster compared to elder people as it is goes right with the results from the demographic information indicated that there are more youth employee in TBL as most of them are between 21-35years. These study was consistence with the study done by Meyer, (2007) which found that the adoption of e-procurement in organization is influenced by the individual age of the employees by considering that the youth or younger people in the organization were capable to adopt easily the new changes of technology such as the use of e-procurement compared to the elder people. Also the study was aligned with that study of Frosch, (2011) who observed that active aging reflects the desire and ability of many to remain engaged in economically and socially productive activities while the risks of chronic illness and disability increase or goes with age, means that it have direct relationship. While this happens to TBL as age influence the adoption of e-procurement in TANESCO age is not influencing e-procurement adoption.

Also education of employee influences the adoption of e-procurement in TBL. This also was found to be the indicator of adoption of e-procurement in TANESCO. In that sense education of employees is very important towards the adoption of e-

procurement, so that the having enough number of employees with highest level of education contribute towards better performance of the organization hence the adoption of e-procurement being very easily. As supported by Caselli & Coleman, (2001), who found that organization's rate of electronic usage system is viewed on workers ability in terms of their education level.

However the findings in TBL failed establish relationship between individual skills and gender in influencing the adoption of e-procurement, p value is greater than 5% ($p > 0.05$). Hence the null hypothesis was accepted and alternative hypothesis was rejected. Implies that skills which an employees have does not influence the adoption of e-procurement because the increase of individual skills leads to decreases the rate of e-procurement adoption in TBL due to negative insignificant relationship between skills and adoption of e-procurement. This finding was contrary to findings which obtained in TANESCO which indicate the positive relationship between skills and adoption of e-procurement. Furthermore the study is contrary to the study done by Mchopa, (2012) which indicate that, the success implementation of e-procurement system selected requires expertise from both supplier entity and the buying organization, who are in charge in day to day procurement operation, indicating that increasing the adopting the changing environment increase organization's efficiency.

Moreover the study failed to find the association between gender and adoption of e-procurement in TBL as the same with the finding of TANESCO. The study was contrary to the study of Raufu, (2014) who found that there is influence of gender (Male and female) in adoption of new technology in an organization by observing that male were able to adopt the new changes of technology very faster compared to female

5.3 Influence of organizational factors on e-procurement adoption

This objective aimed to find the existing association between organizational factors and e-procurement adoption. The organization factors were analyzed by considering

four indicators which are organizational structure, employee motivation, and teamwork and leadership style. The study was hypothesized that there is significantly relationship between organizational factors and e-procurement adoption.

The results from the findings indicated that there is positive significantly relationship between organizational structure and e-procurement adoption in TANESCO as p value is less than 5% ($p<0.05$), which the alternative hypothesis of the study was accepted. Implies that there is existing association between organizational structure and e-procurement adoption, well established structure which allows smooth interaction of communication among employees within the organization enabled easy adoption of new technology because the employees were able to communicate smooth with the top management concerning any innovations which wanted to be made in an organization, and the top management provides the support to the lower level, in that extent good organization structure facilitate or encourage new innovations which leads to easy adoption of any changes of new technology such as e-procurement adoption. This supported the study done by Rahman, (2017) who found that adoption of new technology in organization was supported much with the good organizational structure which allows easy communication between top level management and lower level employees. The study is supported by the theory of Technology Acceptance Theory (TAC) done by Davis (1986), that the technology will be accepted by the employees if they find it easy to use but also if the management within the organization insists on the benefit that can be gained from the system.

Also the results shows that there is significantly relationship between teamwork and adoption of e-procurement in TANESCO as p value is less than 5% ($p<0.05$), so that the alternative hypothesis of the study was accepted. This implies that e-procurement adoption in an organization was influenced by the teamwork of employees because the availability of teamwork among the employees in performing tasks and any other issues facilitate easy adoption of e-procurement in organization through participation in understanding and implementing the new technology and software.

This supported the study done by Gunaseharan *et al.*(2009) which found that having teamwork among employees an top management in facilitate and encourage the faster adoption of e-procurement because of easy sharing of knowledge and skills. Also the study Teo, *et al. (*2009) concluded that there is positive significantly relationship between teamwork and adoption of e-procurement in an organization.

However the results failed to establish the relationship between motivation of employee and leadership style with the adoption of e-procurement in an organization as p value is greater than 5% ($p>0.05$) which the alternative hypothesis of the study was rejected and null hypothesis was accepted. This implies that there is no any association between the adoption of e-procurement in an organization and motivation of employees. The study is contrary to the study done by Chopra, (2002) who found that the adoption of e-procurement in an organization was influenced by the motivation factors such as better wages, promotion and allowances by motivating the employees to increase their productivity through innovation and adoption of new technology. Also implies that no significantly relationship between the leadership style and adoption of e-procurement, so that the leadership style either is good or bad was not influence the adoption of e-procurement which is supported the study done by Abdullah et al., (2015) Who found that there is no association between leadership style of top management and the adoption of e-procurement in an organization. Further (Bohoris, 2007), said that leadership style encourage or discourage employee to perform better job but in relation to adoption of e-procurement the study failed to establish the existing relationship.

For the case of TBL findings indicate that, there is statistically significantly relationship between employee motivation and adoption of e-procurement as p value was less than 5%, the finding support alternatives hypothesis. This implies that e-procurement adoption in TBL was influenced by motivation of employee, through motivation the employee performance increase. The motivation of employee was in terms of better salary, overtime payment, promotion and extra allowance.

This study was consistence with that study of Chopra, (2002) which found that the adoption of e-procurement in an organization was influenced by the motivation factors such as better wages, promotion and allowances by motivating the employees to increase their productivity through innovation and adoption of new technology. This study is also supported by the Theory of Planned Behavior (TPB) which indicates that the adoption of the new technology is influence by certain variables, in the sense that, employee behavior to the new technology adoption is predicted by the organization's intention (Ajzen 1991).

Also the adoption of e-procurement in TBL was influenced by the teamwork within the organization as p value was less than 5%. The alternative hypothesis of the study was accepted, the same to the findings of TANESCO which indicate the influence of team work on e-procurement adoption. Implies that the presence of team work such as collaboration in doing tasks or work in TBL among employees contribute towards easily adoption of e-procurement because of sharing technology and experience among the employees. This supported the study done by Gunaseharan *et al.* (2009) which found that having teamwork among employees an top management in facilitate and encourage the faster adoption of e-procurement because of easy sharing of knowledge and skills. Also the study Teo, *et al. (*2009) concluded that there is positive significantly relationship between teamwork and adoption of e-procurement in an organization.

Also the findings failed to establish the existing association between organization structure and e-procurement adoption in TBL as p value was greater than 5%, alternative hypothesis was rejected. This implies that the adoption of e-procurement was not influenced by the organization structure, so that having good or bad organization structure does not influence the e-procurement adoption. This was contrary to the findings of TANESCO which shows the positive significance relationship between organization structure and e-procurement adoption. Also the findings was contrary to the study done by Rahman (2017) who found that adoption

of new technology in organization was supported much with the good organizational structure which allows easy communication between top level management and lower level employees

As observed in findings of TANESCO, also the findings in TBL failed to establish the significance relationship between leadership style and adoption of e-procurement. So that adoption of e-procurement was not influenced by the leadership style. The study is opposing the study done by (Bohoris, 2007), which indicating that leadership style encourage or discourage employee to perform better job but in relation to adoption of e-procurement the study failed to establish the existing relationship

5.4 Level of e-procurement adoption in an organization

The researcher aimed to find out at what position does the TBL and TANESCO are in terms of electronic procurement adoption, in this context levels of e-procurement adoption were divided into information perspective which involves e-sourcing, e-collaboration and e-informing and in transaction perspectives which involves e-catalogue, e-tendering and e-payment.

The results from the findings indicate that e-procurement adoption in TANESCO conducted on information perspectives only. Implies that the adoption of e-procurement in TANESCO is within preliminary stage because they use only the information perspectives tools and common e-procurement tools used mostly are e-sourcing, and e –forming as majority of respondents agree. E-sourcing tools used for only searching the suppliers, contractors and service providers outside the country through looking their location, products, capabilities end even price indicated in the catalogue by using internet source. Also e-forming tools in TANESCO used as the tool of informing supplier, contractors and service providers especially concerning tender notifications such as clarification on tender, notification on awarding of tender, sending of quotations in order the suppliers to respond it and any other required information through using e-mail.

This study was supported by Hassan, (2014) who found that the adoption of e-procurement involve two stage which are information stage and transaction stage, and most of the organization start with information stage which mostly involve the use of e-mail to make communication.

While in TBL Results from the field indicated that TBL is in Transactional level perspectives as majority of respondents agreed by 80% as indicated in table 4.11. This implies that the organization has moved from preliminary e-procurement adoption that is information to transactional perspectives, transactional tools for e-procurement are used in the organization such as e-tendering and e-payment this indicate that e-procurement in TBL is fully practiced from the first stage of procurement to the last stage. E –tendering used in TBL by integrating all activities of tendering on line by using sophisticated e-tendering system which allow collaboration of many users such as buyers and suppliers from initial stage of preparing tender document, up loading tender document, advertisement of tender, selection of suppliers based on the list available to the data base, invitation to the selected suppliers to participate in tender through notification email, sending of tender document to suppliers up to final submission of tender online before closing date and then tender analysis and evaluation was conducted on the system by comparing prices of different suppliers with the available specifications and last the award of tender and negotiation of price was conducted on e-tendering system. While in TANESCO still the tendering activities was conducted manually from initial stage of advertisement of the tender until awarding of the tender to the suppliers, in that context TBL is in the better position to manage suppliers' bids online through getting right information and submission on time but also able to reduce cost of printing and posting.

Also e-payment was used in TBL as e-procurement tools by making transactions to the suppliers or service providers through using electronic means without using cash or checks. Normally in TBL they call it electronic payment system which they use mostly the credit card and direct debit card. By using direct debit card TBL instruct

his bank to pay suppliers or service providers from organization account electronically for supply of goods or services which helps the organization to improve customer retention by saving payment time. While in TANESCO this was not happen because they still using cash and checks in paying suppliers, contractors and service providers, so that they still in information perspective in stage of e-procurement adoption.

5.5 Challenges of e-procurement adoption and implementation

From this objective the researcher aimed to identify challenges that face TBL on their implementation of electronic procurement practice and challenges that face TANESCO on their way of e-procurement adoption system, in the sense that on their preliminary stage of adoption what are the challenges that organization face on the process of adoption.

Results from the field shows that, common challenges that TBL face on the implementation of electronic procurement system are system compatibility and supplier readiness. System compatibility is challenges because in order the e-procurement application to be conducted smoothly, it required to have the same software between the procuring entity and suppliers, without compatibility of software it leads the problem towards implementation of the e-procurement. So that in TBL the system compatibility with suppliers is challenges facing the organization in implementation of e-procurement. Also supplier readiness is among of the challenge facing implementation of e-procurement in TBL because sometimes the suppliers are not ready to apply the e-procurement system due to the cost of installing. These supported the study done by Cox et al., (2001) who found that the implementation of e-procurement is affected by supplier readiness challenge, system compatibility and engineering capacity.

Also TANESCO on their preliminary stage of e-procurement adoption, results indicated still there are challenges which faces the organization on the adoption, as shown in table 4.13 about 70% agreed that availability of fund is the main challenge which limiting the adoption of technology, as it has been suggested by Dorfman, (2000),that the introduction of any activity cannot be achieved without capital to facilitate the process, while 76.7% of respondents also agreed another challenge during the adoption of e-procurement was electronic infrastructures such as servers as computer that handle process, firewalls as a protection device, encryption devices and data base server, as it has been found by Ong'ang'a, (2012) that ICT infrastructures enable organization to acquire their need without travelling for a long distance.

CHAPTER SIX

SUMMARY, CONCLUSION AND POLICY IMPLICATIONS AND RECOMMENDATIONS

6.1 Introduction

In chapter six the researcher has divided it into four parts. The first is about the summary of findings, second is conclusion made under this research study, third part is about policy implication and last main parts is recommndations. The conclusion and recommendations made under this are based on the study findings. The chapter also provides area for futher research study and limitation of the study.

6.2 Summary of Findings

This research aimed to find out the determinants of electronic procurement in an organization by comparing public institution (TANESCO) and private institution (TBL), specific objectives of this study were to analyze the influence of individual factors on e-procurement adoption, influence of organizational factors on e-procurement adoption, level of e-procurement adoption in an organization and the challenges that organizations faces on adoption and implementation of e-procurement. Results obtained basing on questionnaires presented to the respondents in both organizations indicated that, there is relationship between individual factors and organizational factors in influencing electronic procurement adoption as this two quantitative objectives were analyzed by using binary logistical regression model. On individual determinant among factors found to have a significant relationship with e-procurement were individual skills and technical knowledge. Individual skills such as new ideas concern the specific area on daily movement activity can help the individual (as an employee) to acquire new idea on how to conduct a certain activity, but also technical knowledge imported to an employee on the specific area can help improve efficiency in an organization

The researcher also wanted to determine the influence of organizational factors such as organizational structure, employee motivation, team work and leadership style on electronic procurement adoption. And the results indicated that on organizational influence, organizational structure and team work have got the significant relationship with e-procurement adoption, in that sense good flow of communication and support to the top-down can influence good working relationship among working members in the organization, and also team work among employees by working together towards common objective can influence the adoption of e-procurement.

In determining the level of adoption among TBL and TANESCO, levels were divided into information perspectives and transactional perspectives and the researcher found that, there is a different extent of adoption among these two institutions. TANESCO was on preliminary stage of e-procurement adoption that is information perspectives as most common e-procurement tools used were e-informing and e-sourcing compared to TBL organization which has moved from information perspectives to transactional perspectives that is the organization has fully adopted e-procurement and e-procurement tools such as e-tendering and e-payment are practiced in the organization.

Also the researcher found that there are challenges that both organizations face on e-procurement system practice. There were challenges that TANESCO face on their preliminary stage of adopting e-procurement such as fund and electronic infrastructures as responded to have high response from respondent. TBL also face challenges on implementing electronic procurement system such as system incompatibility and poor readiness from suppliers.

6.3 Conclusion

In this research the main objective was to analyze the determinants of e-procurement adoption in an organization, by comparing TANESCO and TBL, from this objective two hypothesis were created, first hypothesis indicated that there is a significantly relationship between individual factors and e-procurement adoption, and the second hypothesis indicated that there is significant relationship between organizational factors and e-procurement adoption.

The findings shows that the level of e-procurement adoption in TANESCO as public organization was in information perspective which are preliminary stage of adopting e-procurement and the main tools used was e-informing and e-sourcing, which indicating that in public organization the use of e-procurement is still in lagging behind , currently they still in pilot study on implementing the system of e-procurement in procuring entities despite the public procurement regulation of 2013 in section 342 recommend on the public entity to implement the use of e-procurement in procurement proceedings. While in TBL as private organization the findings indicate that the organization was in transactional perspective on e-procurement adoption and the main tools used were e-tendering and e-payment and including all tools which are used in information perspective because the organization was moved from preliminary stage to final stage of e-procurement adoption. TBL through adopting e-procurement get the advantages of reduction of paper work in procurement, reduction of procurement cycle time, improve integrity, transparency and easily in conducting audit

Therefore, In this study the researcher observed that, technology keep pacing and most of activities can be easily completed with the use of technology and still achieve efficiency and effectiveness, in that sense if TANESCO (which represent Public institutions in this study) will not adopt the new system organization will continue face cost overruns, inefficiency, ineffectiveness and overall fail to achieve value for

money in procurement. However E-procurement adoption as it has been observed in TBL may leads to the reduction of employees in the future.

6.4 Policy implication

Findings which were generated from this study provide the important implication to the both public and private organizations. Furthermore the findings should be used by the government to be as a tools to enhance efficiently and effectively operations on e-procurement adoption as the system if adopted provides many benefits to the Government such as reduction of corruption by making procurement proceeding open and provides a chance to work with different suppliers in the world.

6.5 Recommendations

Basing on the study findings, the following are the recommendations which the researcher managed to formulate.

6.5.1 Recommendation to the government

This study after obtained results from the field concerning the adoption of electronic procurement to the public entity the researcher recommends the following to the Government of Tanzania;

The government of Tanzania should insist the public institutions to adopt e-procurement in order to obtain the advantages which the private organizations obtain in implementing e-procurement. Private organization like TBL doing good in procurement activities because of using e-procurement systems but most of public organization like TANESCO they doing bad in procurement such as long procurement cycle, cost overruns and inefficiency because of non adoption of e-procurement. So that the public organization should put more effort on adopt e-procurement as the technology keep advanced.

As it has been found current the Government is in the process of adopting electronic procurement by piloting 100 procurement entities then the Government must ensure that there are adequate electronic facilities as the project requires well maintained infrastructures which will build trust among participants in this research means (buyers and suppliers).

6.5.2 Recommendations to the Organization

The organization must ensure that members are provided with enough training concerning the particular project so as to build awareness among employees and increase their efficiency as it has been found the system is influenced by the availability of technical knowledge among employees.

Also organization should make sure that they recruit more youth employees than elders as they are the one who can easy adopt changes which will increase efficiency and effectiveness in their daily work.

6.5.3 Recommendation to Academicians

Academicians should keep on researching concerning e-procurement as it will enable to put more emphasizes much to the Government on the issue of responsiveness in e-procurement adoption in order to ensure efficiency and effectiveness in the government operations.

6.6 Limitation of the study

Researcher during collection of data faced with the limitation of respondents to delay to provide information through filling of questionnaire, which make the researcher to use much effort to make follow up and to ensure the questionnaire are returned in reasonable time to meet university deadline.

6.7 Area for further study

The study was to analyze the determinant of e-procurement adoption in an organization; a comparative study of TBL and TANESCO. Further study can be conducted on the Impact of e-procurement adoption and the rate of employee's reduction.

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APPENDIXES

Appendix I: Questionnaire

Questionnaire No_____

DETERMINANTS OF ELECTRONIC PROCUREMENT ADOPTION IN AN ORGANIZATION

The data provided in this survey is confidential and will be used only for Scientific purposes by the researcher

A CASE OF TANZANIA BREWERIES LIMITED AND TANESCO DAR ES SALAAM, TANZANIA

BY GIFT MUSHI
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PART I: GENERAL BACKGROUND INFORMATION

Dear respondent, the purpose of this questionnaire is to enable the researcher to collect data. The questions asked in this section will be used for classification purpose only. The information gathered will not be used in any other way and will be kept strictly *confidential*. Please tick the most appropriate alternative/s.

(01) What is your current position in your organisation in relation to Procurement?

- ☐ PMU Member
- ☐ User Department (User)
- ☐ Other (Specify)_____

(02) How long have you been in this position?

- ☐ Less than 5 years
- ☐ 6 – 10 years
- ☐ 11 – 15 years
- ☐ 16 – 20 years
- ☐ More than 20 years

(03) What is your highest education level?

i. Primary school
ii. Secondary/High school
iii. Certificate
iv. Diploma
v. Bachelor degree/Advanced Diploma
vi. Master's degree
vii. Other level _____

(04) Which of the following category best describe your age?

i. Below 20 years
ii. 21 – 40 years
iii. 41 – 60 years
iv. Above 60 years

PART II ADOPTION OF E-PROCUREMENT

1. Have you adopted e-procurement in your organization?
   A. YES (If Adopted)
   B. No (If not adopted)
2. There is adoption of e-procurement in your organization
   A. Strongly agree
   B. Agree
   C. Not sure
   D. Strongly disagree
   E. disagree
3. The rate of adoption of e procurement is very high in the organisation
   A. Strongly agree
   B. Agree
   C. Not sure
   D. Strongly disagree
   E. disagree

PART III:INDIVIDUAL FACTORS AND E-PROCUREMENT ADOPTION IN AN ORGANIZATION

Kindly indicate the extent to which you agree with the following statements on the influence of Individual factors on e-procurement adoption

Use the following scale and tick (√) your level of agreement

1= Very high 2= High, 3= Neutral, 4= Low, 5= Very Low

A	Rate the following individual factors in relation to e-procurement adoption in your organisation	1	2	3	4	5
i)	Individuals skills					
ii)	Age					
iii)	Technical knowledge/Education					
iv)	Sex					

PART IV: ORGANIZATIONAL FACTORS AND E-PROCUREMENT ADOPTION IN ORGANIZATION

Kindly indicate the extent to which you agree with the following statements on the organizational factors towards e-procurement adoption.

Use the following scale and tick (√) your level of agreement

1= Very high 2= High, 3= Neutral, 4= Low, 5= Very Low

A	Rate the following organizational factors in relation to e-procurement adoption in your organisation	1	2	3	4	5
i)	Organizational Structure					
ii)	Motivation					
iii)	Team work					
iv)	Leadership style					

PART V: LEVELOF ELECTRONIC PROCUREMENT ADOPTION

1. At what stage of e-procurement adoption does your organization experience?
   A. Information perceptive
   B. Transaction perspective
   C. None

2. Please indicate the e-procurement tool and level used in Information perspectives and transaction perspectives

   NOTE: The level ranges between 1-3; 1-for low, 2-for high, and 3-for medium

Information perspective tool	√	**Rate the level**	**Transaction perspective tool**	√	**Rate the level**
E-informing E-auction					
E-collaboration			E-tendering		
E-sourcing			E-catalogue		

PART VI: CHALLENGES FACING OF ADOPTION OF ELECTRONIC PROCUREMENT

1. Kindly indicate the extent of agreement to the following challengesfacing electronic adoption in Tanzania Breweries Limited

   Use the following scale

   1= STRONGLY AGREE, 2=AGREE, 3= NOT SURE, 4=DISAGREE, 5= STRONGLY DISGREE

A. FOR TBL ONLY

A	Challenges facing implementation of electronic procurement in the Organization	1	2	3	4	5
i)	System compatibility					
ii)	Supplier readiness					
iii)	Engineering capacity of employees in the organization					

State other challenges on the implementation of e-procurement practices

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B. FOR TANESCO

B	Challenges associated with the adoption of electronic procurement in the Organization	1	2	3	4	5
i)	Fund					
ii)	Electronic infrastructures					
iii)	Organization's culture					

State other challenges associated with the adoption of e-procurement practices

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Appendix two

Table 1 Regression analysis of individual factors on e-procurement adoption in TBL

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	47.469	4	.000
	Block	47.469	4	.000
	Model	47.469	4	.000

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	10.094	8	.258

Table 2 Regression analysis of organizational factors on e-procurement adoption in TBL

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	53.778	4	.000
	Block	53.778	4	.000
	Model	53.778	4	.000

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	3.099	7	.876

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	15.790[a]	.620	.857

a. Estimation terminated at iteration number 8 because parameter estimates changed by less than .001.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	10.326[a]	.659	.912

a. Estimation terminated at iteration number 9 because parameter estimates changed by less than .001.