ROLE OF E- GOVERNMENT IN DELIVERY OF PUBLIC SERVICES:

A CASE STUDY OF TANZANIA ELECTRIC SUPPLY COMPANY IN

RUVUMA REGION, TANZANIA

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DEDICATION

To my wife Jenifer, my daughter Brenda and my son Brayson, for their endurance

and encourage me throughout the period of this study.

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LIST OF ABBREVIATIONS

BoT	:	Bank of Tanzania
E-Administration	:	Electronic Administration
E-Citizens	:	Electronic Citizens
E-democracy	:	Electronic Democracy
EDI	:	Electronic Data Interchange
eGA	:	e-Government Agency
E-Government	:	Electronic Government
E-Services	:	Electronic Services
E-Society	:	Electronic Society
GPSA	:	Government Procurement Services Agency
G2B	:	Government-to-Business
G2C	:	Government-to-Citizen
G2E	:	Government-to-Employee
G2G	:	Government-to-Government
ICT	:	Information and Communication Technology
IT	:	Information Technology
JKUAT	:	Jomo Kenyatta University of Agriculture and Technology
MDA	:	Ministry Department Agency
MEM	:	Ministry of Energy and Minerals
MoEVT	:	Ministry of Education and Vocational Training
MIS	:	Management Information System
MoFEA	:	Ministry of Finance and Economic Affairs
MS-TCDC	:	MS-Training Centre for Development Co-operation
NBS	:	National Bureau of Statistics
NECTA	:	National Examinations Council of Tanzania
NeGS	:	National e-Government Strategy
NGO	:	Non Government Organization
NICTP	:	National Information and Communication Technology Policy
NPM	:	New Public Management
OECD	:	Organization for Economic Co-operation and Development
PKI	:	Public Key Infrastructure

PO-PSM	:	President Office Public Services Management
PS	:	Permanent Secretaries
PSRP	:	Public Sector Reform Program
RS	:	Regional Secretariat
SMATRA	:	Surface & Marine Transport Regulatory Authority
SPSS	:	Statistical Package for Social Science
TBA	:	Tanzania Building Agency
TANESCO	:	Tanzania Electric Supply Company
TANROAD	:	Tanzania Road Agency
TAMESA	:	Tanzania Electrical Mechanical and Electronics Services Agency
TISS	:	Tanzania Inter banking Settlement System
TNGS	:	Tanzania National Government Strategy
TRA	:	Tanzania Revenue Authority
UN	:	United Nations
URT	:	United Republic of Tanzania
WB	:	World Bank

DEFINITION OF KEY TERMS

E-Government is defined as the use of Information Communication and Technology to enhance the range and quality of public services to citizens and businesses while making government itself more efficient, accountable and transparent according to Almarabeh and AbuAli, (2010).

Government is a body that has the authority to make, and the power to enforce laws within a civil, corporate, religious, academic organization (Kitaw, 2006).

Public service is a Service provided or supported by a government or its agencies. In other way Agency involved in providing public service for or on behalf of a government by Dijkzeul (2005).

Service delivery is regarded as a process between a provider and a client or target group that creates benefits by facilitating a change in the client(s) by Dijkzeul (2005).

Human capacity is the stock of knowledge, habits, social and personality attributes, including creativity, embodied in the ability to perform labor so as to produce by UNDP, 1997

Information technology is the application of computers and telecommunications equipment to store, retrieves, transmits and manipulates data by Daintith, John, (2009).

ABSTRACT

E-government facilitates delivery of public services of relevant government information in electronic form to citizens in a timely manner and better service delivery to citizens. E-government is a kind of governmental administration which is based on Information Communication and Technology Services. Electronic government describes the use of technologies to facilitate the operation of government and disperse of government information and services.

The scope of the study was limited to Tanzania Electric Supply Company Limited (TANESCO) in Ruvuma region. The population of thirty (31) were selected from a total population of 169 public servants use both purposive and stratified random sampling techniques applied. Data was collected by structured questionnaires about role of e-government in delivery of public services with regards of research objective and questions of this study. The study employed a case study research design; both quantitative and qualitative methods were applied to enjoy the benefits of both approaches also to supplement each other.

The major findings of study were on three focus; firstly about 67.7% of response from respondents agree that ICT infrastructures specifically modern computer connected to internet, reliable internet speed, well organized organization website, power availability in public operation contribute to efficient in delivery of services, it also noted by respondents to faster decision making, speeding up transaction processing and reduce cost.

Secondly, the study found that 77.4% of responses from respondents were strongly agreeing that, the uptake of ICT in government operation, it supreme efficient in delivery of public services by employ e-government. As noted that quality of delivery public services improved as more acceptability of using the information technology and communication.

Thirdly, the human capacity in ICT to public servants were influences the efficient in delivery of public services in TANESCO, 87.1% of respondents trained on ICT about 71% of response from the respondents agree computer knowledge, skill and experience improve efficient in delivery of public services. It further revealed that 93.5% of respondents on their daily work are delivery services by both face to face and electronically that improve standard and quality in delivery of public services.

The study recommends that capacity building to public servants on ICT, install and strengthening ICT infrastructures to government organizational are inevitable to realise relevant role of e-government in delivery of public services.

Keywords: *E-government, Information Communication and technology and Human capacity*

CHAPTER ONE

INTRODUCTION

1.1: Background

The fundamental nature of electronic government (e-government) is to link government activities with the advanced technology that the world is having today. This technology has already shown a significant contribution in convey efficiency in private sector through e-business, e-banking, e-procurement, e-services and so forth.

Tanzania Government increasingly trying to put e-government on as model of providing public services to its citizens (Bhatnagar, 2004) because of the evident opportunities it promises. Given that e-government has the potential to improve competence, efficacy, quality in delivery public service through different government sectors (Cibora & Navarra, 2005, Dada, 2006).

According to Schware, R. (2005) the term e-government refers to the use of information and communication technology (ICT) to enhance the range and quality of public services to citizens and business while making government more efficient, accountable, and transparent Schware, R. (2005), e-government means the services available to the citizens electronically. It may provide opportunity to citizen to interact with the government for the services that they required from government. ICT plays an important role to providing the easy services by the government to the citizens.

In both developed and developing countries e-government are noted to towering level services; accelerated processing, increased transparency and low cost in Government and its departments in delivering public services and information share. Wimmer, Codagnone, & Ma (2007) pointed out that despite the many potential benefits of using modern ICT, governments still struggle with the problems of rigid,

ineffective processes, and processes are not properly designed for effective implementation through modern ICT that is an e-government in delivery public services to citizens.

Several scholars provided empirical evidence to suggest that successful implementation of e -government has been problematic in African countries (Dada, 2006; Heeks, 2003). Some of the challenges include the effect of digital divide, inadequate local content, issues of usability, lack of trust in e-government services, lack of government commitment to implement e-government etc. (Bwalya, 2009; Dada, 2006). It is also noted that e-government is still a new phenomenon in context of developing countries (Dada, 2006; Heeks, 2003; Ngulube, 2007) that impede the progress in implementing e-government resulting in failure to reap the benefits of using ICT in delivery of government services to the citizenry.

It has been noted that in most of African countries, Government and its departments and units fail to modernize delivery of public services and information's to citizens through application ICT knowledge. UN reports; (2008, 2007, 2003) noted that majority of the developing countries are still in their embryonic stages of e-Government implementation. However, e-government is still an important move towards the 21st century (Kumar et al., 2007) and a key to address barriers and challenges entering the global economy and for future growth potential. It has been inevitable for both developed and developing countries to adopt e-government due to rapid growth in internet usage and development of Information and communication technologies and potential progress of e-commerce/e-business in the private sector. This has escalated pressure for public sector organizations in the Ministry and Department Agencies to serve citizens electronically (O'Brien & Marakas, 2006).

As learnt from the private sector, public awareness, and the influence of development agencies (e.g. the World Bank) exert force towards e-government (Cordella, 2007; Heeks, 2002; Ndou, 2004). In response, Tanzania government through its ministries, departments and agencies have launched e-government initiatives to cope with the pressure of the powers of ICT and their benefits (Bhatnagar, 2004; Tseng et al., 2008). As noted in United Nations reports that in 2008 192 countries had various forms of e-government initiatives (UN, 2008). The initiatives aim to improve government's competitiveness through enhanced quality and a wider variety of the public sector services

The government of Tanzania recognizes that ICT is the key facilitator of the development strategies in the country. The National ICT Policy (URT, 2003) emphasizes on the application of ICT in various development sectors such as health, education, government, infrastructure, and agriculture and so on. Accordingly, the government acknowledges that e-government has the potential to enhance quality and effectiveness delivery public services (URT, 2003). Therefore, the government has been investing on e-government in various in public sectors (Sawe, 2007, UN, 2008). Kobb (2008) relates e-government to public sector reform programmes intended to improve service delivery in the government of Tanzania. Although it had not been an explicit component in the Government functions as necessary enabler towards the successful in delivery public services.

In practice Tanzania through it administrative functions; Ministries, Ministerial department agencies and other public sectors have continued to rely on paper work and other traditional systems for delivery public services. Even though computers and computerized systems were being introduced and e-government facilities were

installed throughout government offices, unfortunately public servants persist working largely on conventional manual and in very small apply electronic government on delivery public services to citizens that cause role of e-government not been realized by government in delivery of public services.

It is observed that; e-government initiatives are common in most countries as they promise a transparent, citizen-centric government and reduce operational cost it is basically an integration of information technology (IT) capacity, primarily websites, intranets, and databases, to allow self-service through an IT medium (Budd & Harris, 2004). All of this information is the basic ingredient for governments to provide public services, and account for its performance (Heeks 1999). It is a means to ensure the accountability of government, to manage the government's operations, to maintain the healthy performance of delivering public services (OMB 2000).

According to Act No 30 of 1997 and 18 of 2002 Government of Tanzania establish number of Ministry Department Agencies (MDAs) in various Ministries as a semi autonomous to operational within ambit of Ministry for the purpose of providing public services in selected areas in a more efficient and effective manner and for related matters. In Ruvuma region like other Tanzania regions a number of MDAs are providing public services to citizens, these Ministry Department Agencies (MDAs) are like National Bureau of Statistics (NBS), Tanzania Electric Supply Company Limited (TANESCO), Tanzania Revenue Authority (TRA), Tanzania Road Agency (TANROAD), Surface and Marine Transport Regulatory Authority (SUMATRA), Tanzania Building Agency (TBA) and Tanzania Electrical Mechanical and Electronics Services Agency (TEMESA), Government Procurement Services Agency (GPSA) also noted an e-Government Agency (eGA) is established

as a semi - autonomous Institution under President's Office Public Service Management to be charged with the mandate of providing coordination, oversight and provision of e-Government initiatives and enforcement of e-Government standards to Public Institutions.

In Tanzania mainland TANESCO; as indicated in this study operates in 26 regions and currently it offers electricity to only about 18.4% out of over 44.9 million Tanzanians (Tanzania National Population & Housing Census, 2012). This means that since Tanzanian independence in 1961, about 81.6% of Tanzanians had never had electricity in their homes. TANESCO's service provision can be declared as ineffective based on this information alone. It needs to expand its service provision and must understand that in the world of ICT electricity is an important service, so much so that ICT proponents regard it as a human right as also reinforced by Tanzania Energy Policy (URT, 2003).

TANESCO, as like other Tanzania MDAs has initiate e-government in it operations by install Information and Technology Communication, web site, internet and other IT facilities are procured, deploy IT experts and train key staff on computers and software as insisted by the National ICT Policy (URT, 2003) with an emphasize the application of ICT in various public sector to delivery services.

Services in this study is defined as products that consists of activities, benefits or satisfaction that are offered for sale that are essentially intangible and do not result in the ownership of anything (Kotler, Wong, Saunders & Armstrong, 2005). Many local governments offer services such as water, sanitation, electricity, schools, hospitals and housing. TANESCO offers electricity to Tanzanian citizens.

According to Dijkzeul (2005) service delivery is regarded as a process between a provider and a client or target group that creates benefits by facilitating a change in the client(s), a change in their physical possessions, or a change in their intangible assets. Through this definition, it is necessary to understand that, service delivery reveals the relationship between two sides, one side being of the provider and the second of the receiver.

Efficiency means getting any given results with the smallest possible inputs, or getting the maximum possible output from given resources, Black, J (1997) Oxford Dictionary of Economics.

1.2: Statement of the Problem

It is more than decade now; since Tanzania government launched an e-government in public services provision, there has been a problem in delivery of public services. As argued by Berman (1997) that inadequacy of public services and information is believed to significantly reduce citizens' trust in government and their participation to improve quality of delivery services. Despite the efforts made by Tanzania Government and acknowledgement that e-Government has a potential to enhance quality, efficiency, effectiveness and timely in public services provision to its citizenry (URT, 2003), more invest in e-government initiatives to various public sectors (Sawe, 2007, UN, 2008) and benefits are presume to be associated with e-Government that basically translates to provision services direct to users instead of traditional flow of paper work and queues in delivery of public services.

Notable few example of initiative services related to e-government are electronic revenue collection (e.g. Electronic Fiscal Devices by Tanzania revenue Authority), Higher education application services (By Tanzania Commission for Universities)

and examination results publication (by National Examination Council). It is still difficult for realize role of e-government in delivery public services in Tanzania.

The e-government in delivery of public services in Tanzania's Government was aspiration for eGA by national ICT Policy approved by Cabinet in March 2003, to envisage the Government as a model user of ICT, and supporting ICT to promote good governance, transparency and accountability.

In practice, Most of the government sectors have continued relaying on paper work and other traditional systems for delivery of public services. Although computers and computerized systems were being introduced and e-government facilities were installed throughout government, public servants unfortunately continue to depend work largely on conventional manual and in very small apply electronic government on delivery public services to citizens that cause role of e-government not realized in improve quality of delivery services

While some previous research has shown that e-government has the potential to accelerate reforms in the public administration that influence improvement in improve quality of delivery services and enhance free flow of public information. Heeks (2002) argued that free flow of information through e-government between the citizens, government agencies, and private sectors potentially increase the quality, efficiency, effectiveness and timely to the citizens. It is not known to what extent the Tanzanian e-government that was launched in 2003, its role in delivery public service to Tanzania citizens.

Studies related to e-Government have been increasing (e.g. Kaaya, 2004, Yonazi, 2010; Yonazi, et al, 2010). However, few of these studies have investigated the role of e-Government in delivery public services in Tanzania. This indicates that, the planning, design, deployment and management of such initiatives have been done

with limited understanding of the potential factors that may influence the role of e-government in delivery of public services.

The study examined the role of e-government in delivery public services to citizens in government sectors as noted efforts made by Government to ensure ICT facilities are procured and installed, IT experts employed and other key staff trained on computer.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of the study was to assess the role of e-government in delivery of public services in Tanzania Electric Supply Company Ltd Ruvuma region office.

1.3.2 Specific Objectives

The specific objectives were;

1. To investigate the role of ICT infrastructures in delivery of public services in Tanzania Electric Supply Company Limited Ruvuma region office.

2. To determine role of uptake of ICT in delivery of public services in Tanzania Electric Supply Company Limited Ruvuma region office.

3. To determine the role of human capacity in ICT in delivery of public services in Tanzania Electric Supply Company Limited Ruvuma region office.

1.4: Research Questions

1. What are the contributions of ICT infrastructures in delivery of public services at TANESCO?

2. What is the role of human capacity in ICT in delivery of public services at TANESCO?

3. What is the role of uptake of ICT in delivery of public services at TANESCO?

1.5: Significance of the Study

This study will add knowledge on the existing knowledge and help researchers and academician as point of reference on the new areas that need more research. Further the study will inform policy makers on the measures to address challenges in e-government area (Mutahagahywa, Kinyeki & Ulanga 2007), and enhancing e-government initiatives in Tanzania (Yonazi 2010).

The Tanzanian government developed the National ICT policy in 2003 (Yonazi 2010). One of the policy challenges, according to Mutahagahywa, Kinyeki and Ulanga (2006:6), is on the creation of an e-government environment responsive to the needs of citizens.

The results of this study will also be of benefit to officials from the private sector responsible for e-commerce. It enhance understanding, simplify services delivery procedures and reduction of delivery time reduces administrative costs incurred by citizens and organizations in obtaining services and allows for the introduction of uniform standards of service delivery. It benefit to scholars researching on e-government through its highlighting of the role e-government in delivery public services.

This study and its results are expected to form an important contribution to understanding of e-government in delivery public service to citizens in the externally and internally connectivity world with a driven force and reshaping governments throughout the world by improving public services delivery and engaging citizens.

1.6: Study Justification

In Tanzania Government due to an increasingly put e-Government on as model of providing public services to its citizens (Bhatnagar, 2004) had create a great demand

to conduct this research on the role e-government in delivery public services, also influenced by the evident of opportunities and potential it promises to improve quality, competence, efficacy in service provision to Government sectors (Cibora & Navarra, 2005, Dada, 2006).

As learnt from the private sector, public awareness, and the pressure of development agencies (e.g. the World Bank) exert pressure towards e-Government (Cordella, 2007; Heeks, 2002; Ndou, 2004). In response, Tanzania government through its Ministries, departments and agencies have launched e-Government initiatives to cope with the pressure of the powers of ICT and their benefits (Bhatnagar, 2004; Tseng et al., 2008) for the nation to have critically and mean fully policy, guides, design, implementation, monitoring and evaluation of e-government in delivery of public services in government entities. It also enhances understanding of public and other stakeholders of e-government and it role in delivery services and fully participation in competitiveness and well modern world.

Through empirical evidences that has not been done before in Tanzania; brings about a synthesis that has not been made before in the country; uses already known material, such as previous literature, with a new interpretation for the role of e-government in delivery public services, and investigates areas, such as the role of I CT infrastructures, role of human capacity and adoption of e-government in MDA in delivery of public services in Tanzania which scholars in the discipline have not looked at before.

Studies about e-government in Tanzania are of limited, the current research mostly focus on the use of ICT while other areas were; access of electronic information resources (Shija 2009), e-learning in higher education (Ndume, Tilya & Twaakyondo 2008).

The present study brings new knowledge by assessing the role of e -government in delivery of public services in Tanzania. The findings of this study focus on the Tanzanian context; hence, it is original in that perspective.

The study is also original in that it involved Tanzanian citizens from civil servants from Tanzania Electric Supply Company Limited (TANESCO) in Ruvuma region, thus representing government employee in Tanzania, while most of e-government studies have concentrated on the public sector organizations.

This study also achieved originality by triangulating data collection methods, which are interviews and questionnaires.

Data sources including Tanzanian citizens and policy makers were triangulated. Lastly, this study reviewed a range of literature from more advanced countries in e-government to draw lessons, which may be relevant to the Tanzanian situation, hence making this study different from previous studies conducted in Tanzania.

1.7: Scope of the Study

The scope of the study is limited to Tanzania Electric Supply Company Limited (TANESCO) in Ruvuma region as one of Ministry Department Agency (MDA) operate in the Region as semi autonomous entity for providing public services in selected areas in a more efficient and effective manner and enforced by Tanzania Energy Policy (URT, 2003).

The study target populations were staff at regional TANESCO head quarter that includes heads of department, heads of sections and other staff selected from each department and section. Based on staff categories a total 31 respondents were selected in this study as representative sample size from the total population. Data collected were examining the role of e-government in delivery public services. As

noted from the TANESCO a government entity deals with supply electricity as service to citizens

TANESCO is only Government entity deals with electricity generation and supply to Tanzanian communities; that services are offered in the form of G2C, G2B and internally services G2G. The mainly services are application, billing sending and payments and customer care services.

1.8: Study Limitation

This study derives its findings from a particular case study in a specific area and does not claim to represent the entire population of Tanzania. For instance the case study itself TANESCO has branches countrywide and it is difficult to study them all in time available to conduct this study. The respondents that contributed to this study was representatives of many public servants but their understanding does not mean that all Tanzanians understand things the same way.

This study employed a case study research design that yield comprehensive data from selected respondents that cover proportional representative against the population to overcome limited fund from this study, geographical area covered and constrain of time limit were generally draw out by research design employed that adhered to the fundamentals of scientific research.

CHAPTER TWO

LITERATURE REVIEW

2.1: Introduction

This chapter provides comprehensive literature review that is relevant to this study. It covers concepts, theoretical, empirical, and models review with regards on the electronic government and its role in delivery public services to the citizens, the conceptual framework of e-government. Lastly, the chapter previews the experiences from both developing and developed countries in view of e-government.

The aim is to systematically guide the process of solving the research question, achieve the objectives specified in this research and also links e-government in service delivery through government, ministry department agencies and other government entities for public servants improve their way to provide services to citizens and the potentiality and benefits of e-government discussed in this chapter.

2.2: Theoretical Framework

The term e-government (electronic government) is understood as the use of the ICTs in public administrations combined with organizational change and new skills to improve public services and democratic process/accountability. (World Bank: 2001). Administrative efficiency, quality of public services and democratic participation are core principles of e-government, according to Sheridan and Riley (2006), limited to the development of online services. Sheridan and Riley (2006), *e-government is an institutional approach to jurisdictional political operations where as e-governance is a procedural approach to co-operative administrative relations,* i.e. the encompassing of basic and standard procedures within the confines of public administration.

The recent advancements in the field of information and communication technology (ICT) have opened up huge opportunities for governments and businesses alike to transform their operations and service delivery systems. They have also contributed to heighten public expectations and demands for increased and quality services from their respective agencies/service providers. Consequently, the governments' world over has been forced to undertake government role for ICT application in their operations aiming to inject speed and ease in service provision and thus achieve greater productivity and excellence. Commonly known as e-Government, the drive has become a major feature of the current administrative reforms globally

Some Scholars have defined e-government in different ways: Coleman (2006) has defined e-government as the combination of electronic information-based services (e-administration) with the reinforcement of participatory elements (e-democracy) to achieve the objective of "balanced e-government". Muir and Oppenheim (2002) defined e-government as the delivery of government information and services online through the internet or other digital means. E-government has also been defined as the delivery of improved services to citizens, businesses, and other members of the society through drastically changing the way governments manage information (Kumar et al., 2007).

Furthermore, Almarabeh and AbuAli, (2010), define e-Government as the "use of information and communication technologies to offer citizens and businesses the opportunity to interact and conduct business with government by using different electronic media such as telephone touch pad, fax, smart cards, self-service kiosks, e-mail / Internet, and Electronic Data Interchange (EDI)". In its simplest form, it is the application of information and communication technologies (ICTs) to deliver public

services (Holmes, 2002), this effect, e-government can be viewed as the administration, rules, regulations and frameworks organized by a government for service delivery as well as to communicate, co-ordinate and integrate processes within itself (Almarabeh and AbuAli, 2010).

The theoretical framework guides research to determine the concepts it will measure, and the statistical relationships it should look for (Borgatti 1999). In a broader context, a model is viewed as a representation of reality, it delineates those aspects of the real world considered by the scientist as relevant to the problem under investigation, it makes explicit significant relationships among these aspects, and it enables the researcher to formulate empirically testable proposition regarding the nature of these relationships (Frankfort-Nachmias & Nachmias, 1996). The following models guided the theoretical framework of this study capture three models and one theory that are information systems success model, e-government models of delivery, technology adoption life cycle models and bureaucracy theory.

2.2.1: Information Systems Success Model

DeLone and McLean (1992) model has been found to be a useful framework for organizing Information System (IS) success measurements. This model was updated although each of the variables describing success of an information system was consistent with one or more of the six major success dimensions of the updated model (Petter, DeLone & McLean 2008).

The dimensions of success include: **(i) system quality:** the desirable characteristics of an information system; for example, ease of use, system flexibility, system reliability, and ease of learning, as well as system features of intuitiveness, sophistication, flexibility, and response times. **(ii) Information quality:** the

desirable characteristics of the system outputs; that is, management reports and web pages; to measure their relevance, understandability, accuracy, conciseness, completeness, understandability, currency, timeliness, and usability. **(iii) Service quality:** the quality of the support that system users receive from the IS department and IT support personnel focusing on responsiveness, accuracy, reliability, technical competence, and empathy of the personnel staff. **(iv) System use:** the degree and manner in which staff and customers utilize the capabilities of an information system to determine amount of use, frequency of use, nature of use, appropriateness of use, extent of use, and purpose of use. **(v) User satisfaction:** users level of satisfaction, web sites, and support services. **(vi) Net benefits:** the extent to which IS are contributing to the success of individuals, groups, organizations and nations through improved decision-making, improved productivity, increased sales, cost reductions, efficiency, consumer welfare, creation of jobs, and economic development (Petter, DeLone & McLean 2008).

This study applied the concept from DeLone and McLean model (1992) to assess the role of e-government in delivery public services. Through view the system use, system quality, user satisfaction, and net benefits since they may affect user intention for continued usage of e-government websites thus affecting role of e-government (Teo, Strivastava & Liljiang 2008) it noted that electricity is a services delivered by Tanzania government to an entire country through Tanzania Electric Supply Company Limited (TANESCO).

2.2.2: E-government Models of Delivery

Brynard (2002) explains that e-government on the internet could handle all the government scenarios: government-to-citizen (G2C), government-to-business (G2B),

and government to government (G2G). In other cases, these three scenarios are called primary delivery models of e-government (Kitaw, 2006); Kitaw derives a direct association of those models with improvement in efficiency, better accessibility of public services and better processes for democratic government.

The G2C model represents all activities that the government may send or direct to citizens. In this model, citizens are just receivers and the government remains as the sender. Government websites and portals are good example of the G2C model as in many cases provide information directly to the public or information with public interest.

The G2G model represents activities done within the government as an institution in connection with its agencies. These activities may be internal memo, e-mails, security information and other internal orders and activities.

The G2B model represents business activities that the government and its agencies may be conducting. A good example is governmental procurements, tenders, projects, taxes, banking and payable services. This model comprises business activities in government and it helps citizens and private companies who are interested in offering their services directly to the government and its agencies. The study uses this model to assess the role of e-government in delivery of public services to citizens, private companies, government and consider TANESCO as provider of electricity services to the entire Tanzanian nation.

2.2.3 Bureaucracy Theory

The theory of Bureaucracy was formulated by a German Philosopher Max Weber (1864-1920). According to McLean (1996), this theory addresses the role of

bureaucrats as permanent workers in public offices and elected officials in connection with rules that govern the hierarchical office in which appointment and promotion are based on merit. This theory assumes decisions are rational and are not based on patronage.

Marshall (1998) argues that bureaucracy includes a body of administrative officials, the procedures and tasks involved in a particular system of administration. Often, bureaucracy is the key in administering the public and private sectors. It stipulates the duties and roles of each official in the system of administration and it describes their responsibilities. Bureaucracy also provides the relationship between bureaucrats and citizens by showing steps to be followed in performing duties.

According to Andreski (1984), there are four distinct meanings which can be attached to the term bureaucracy. These refer to the set of people who perform the administrative functions in the manner described by Weber; the network of relationships in which they are enmeshed; the amount of power they exercised as a body and the various kinds of malfunctioning of the administrative machine. This relationship and power dissemination in the government machine functions effectively when citizens' problems are solved. Bureaucrats always find best alternatives that simplify their duties and maintaining quality in their performance. It is in this regard where e-government provides another alternative route towards increasing efficiency in public sector.

Weber (1947) cited from his book, argues that the goal of bureaucracies and subsequently of bureaucratic organization was to maximize efficiency. Then, bureaucracies are instruments of administration that are technically efficient because institutionalized rules and regulations enable all employees to perform their duties

optimally. In the world of today, bureaucrats use ICT tools to increase efficiency and be more effective in performing their day to day activities.

Peters, (2001) argues that democratic states have created bureaucratic institutions because their articulated values are extremely powerful for enforcing impartiality and equality of citizens in front of the state and its apparatus. This has made the organizational principles uncovered by Weber as instruments to maximize organizational efficiency, also valuable as fundamental principles to mediate the relationships between citizens and the state in democratic regimes. Even during this time where democratic states are struggling to take advantage of the benefits offered by potentials of e-government in service delivery, still the role of bureaucracy cannot be neglected in the formulation of policies that aim at reforming institutions the mediated by public administrators. The relationship between citizens and public administrators is mediated by the offices of the public administrators and therefore by the civil servants who provide the services. The administrative rationality and impartiality of the administrative actions are only enforced if they become internalized in and inform the actions of public servants as they provide the services to citizens (Merton, 1968).

Nohria and Berkley (1994) argue that the implementation of ICTs to automate existing administrative procedures can improve the administrative system's efficiency and effectiveness without changing its underpinning logic. This means e-government contributes towards achieving principles of Weberian theory in maximum efficiency. The old system of bureaucracy based on paper work is now simplified by using softcopies and other computer technologies to reduce the time and cost undertaken when serving citizens.

Modern societies require multiple services and it is in this sense that e-government can play a pivotal role. This means that the effectiveness of e-governance depends heavily on changes to the bureaucracy and the bureaucrats (people working in that system). If the system may set its values or policies but without changes in bureaucrats attitude and understanding, there will be no achievement. A point to note here is that the bureaucratic organization is a fundamental guarantor of equal and impartial action by public administration and hence enforces democratic values (Frederickson, 2000; Aberbach and Christensen, 2005). Hence the introductions of e-government initiative appear in fasten, easer and efficiency in handling government operations.

Roughly all the governments around the developed world have envisioned ICTs as powerful instruments to improve the quality of the services provided to citizens and businesses and to rationalize the internal organization of the administrative apparatus. These new administrative apparatus embed ideas that contrast with the traditional administrative practices that have historically been driven by assumptions of bureaucratic efficiency: the delivery of public services according to principles of impersonality, equality and fairness du Gay, (1994).

This radical change in New Public Management (NPM) has several manifestations, but most typically it is a management theory about how to reform government by replacing rigid hierarchical organizational structures with more dynamic networks of small organizational units; replacing authoritarian, top-down decision and policy-making practices with a more consensual, bottom up approach which facilitates the participation of as many stakeholders as possible, especially ordinary citizens; adopting a more 'customer'-oriented attitude to public services, and applying market

principles to enhance efficiency and productivity Pollit and Bouchaert, (2004). The enforcement of these prescriptive values is done by Weberian bureaucratic thought Weber, (1947) and strengthened by three key features of bureaucratic organizations Kallinikos, (2006).

The bureaucracies are governed by a set of formal, explicit, comprehensive and stable set of rules that are impersonally enforced in decision-making. Moreover, a fundamental stance of bureaucratic systems is the separation of the functions in the organization from the person entitled to exercise that organizational function.

Bureaucracy theory therefore, is important in this study as it shows the need for bureaucrats to acknowledge and apply changes that make them effective when serving citizens. The theory is useful as it provides staff with an option of using ICT facilities in requesting, asking, or applying for government services.

It is also a potential for a case study of TANESCO, the theory suggests the need for this government institution to expand its productivity, maximize efficiency and effectiveness when serving its customers. It also advocates minimizing unnecessary costs of production and delivery of services to its customers that may be incurred based on the bureaucracy that is not aware of the negative outcome of the red-tape.

The study considers three models and one theory based on relationship between roles of e-government in delivery public service to citizens in this regard may be explained through various theories and models. The three models and one theory that are information systems success model, e-government models of delivery, technology adoption life cycle models and bureaucracy theory.

The bureaucracy theory which describes the role and relations between citizens and bureaucrats, the theory tries to show the need for governments to delivery public

services to its citizens and they describe the role of the government in solving their problems. Troxel (1995) suggests that governments must act in a more customer-oriented manner by recognizing that citizens can never be content with being mere customers; they are owners as well. Similar to this analysis there is also the perception that the public should be viewed by the government as customers, clients and citizens (Kamarck, 2000).

2.3: Empirical Framework of E-Government

This section presents the empirical framework that view statistical evidences done by scholars on their studies in the issues of e-government or related to, with a link to the ICT infrastructures, Human capital in the role of e-government in delivery public services to citizens on the connection to the study objectives.

2.3.1: The Potential Benefits of E-government

Several studies have been conducted on e-government that is mostly an application of information technology and communication to improve the efficiency, effectiveness, transparency and responsibility of public governments, for instance, Kraemer & King, (2005), in delivery services through private or government structures in various sectors. This basically focuses on or related to the role of e-government in delivery public services, furthermore identified barriers and success factors for e-government adoption and implementation studies.

The potential benefits of e-government as a means of improving provision of government services and information to citizens in developing countries have been widely acknowledged (Colesca & Dobrica 2008b; Mofleh, Wanaous & Strachan 2008; Moon 2002; Wang & Liao 2008). Governments have been and still remain the single largest collectors, users, holders and producers of information. Information

remains the basic ingredient in developing countries in pursuing the social, political, economic, social and managerial activities. The e-government offers public information services in order to increase citizen participation in political processes (Colesca & Dobrica 2008b; Moon 2002). Economically, e-government lowers the costs of channels of communication, since citizens can access any information they need on the web and enhance provision of services.

Scholars had show number of benefits of e-government to governments, businesses, and citizens alike (Araujo & Grande 2003; Colesca & Dobrica 2008b: 205; Mofleh, Wanaous & Strachan 2008; Moon 2002). Yet, how these benefits will be achieved is still a debate. Despite the feasibility and availability of technology, 79 government agencies have confronted many challenges and problems in successfully developing and implementing e-government systems.

It is argued that, the use of ICT for delivery public service cannot be abandoned said by Banks, et al., 2002. E-government is no-doubt a mechanism for the management of civil service at the global level. ITU, 2006 it improve the quality of service in the civil service to attain transparency, accountability, efficiency and timeliness. It has been adopted as a new "paradigm shift" for better service delivery by both the developing and developed countries.

A number of researchers have argued that e-government is mainly driven by the desire to improve accessibility to public information and services, lower costs, and improve efficiency (Adeboye, 1995; Herman, 1996; Heeks, 2002; Kenny, 2001. Kashorda (2009) observed that the Kenyan government has increased access to computers in all ministries. Further, Thompson agreed with the World Bank (2001)

that the cost of implementing e-government is high and only high demand would drop the cost.

According to UN, (2003), the development of e-government relates to the benefits that e-government can give, the e-government are "overcoming the complexity of bureaucracy and simplify the process of dealing with public bureaucracy, providing seamless electronic public services, increasing efficiency, transparency and accountability of public resources. It integrates internal organization with its external organization that will provide a multiple citizen needs.

Dodd, (2000) in his study argued that e-commerce's evolution in the private sector, electronic government (e-government) seems to be the next generation of the development in the public sector. More and more governments around the world are introducing e-government as a means of reducing costs, improving services for citizens and increasing effectiveness and efficiency at national, regional and local levels of the public sector, UN, 2008 reported 179 out of 192 members developed strategies to implement e-government systems, e-government identified as one of the top priorities for governments across the world (UN, 2008).

2.3.2: E-government and Service Delivery

West (2004) clarifies that for e-government service delivery to the effective, we look at the number and type of online services offered. E-government may be categorized into four based on the users of the services (Yildiz, 2007). The categories are Government to Government (G2G), Government to Citizens (G2C) and Government to Business (G2B) (Siau & Long, 2006; Yildiz, 2007). Further, the categories can also include Government to Civil Society Organizations (G2CS) and Citizens to Citizens (C2C) (Yildiz, 2007).

The impact of e-government in service delivery by Brynard (2002) in this work, Brynard argues that "for the government institution itself: an e-government framework creates a huge potential for improving the quality of service, stimulating trade and industry and cutting costs internally. The work of employees of the institution is made more interesting because employees' electronic work stations draw together the different information that they need. The people and organizations with which the government institution deals will benefit directly from improved knowledge, product and service offerings."

There are various services that different governments are using to reach their citizens electronically depending on the level or stage of e-Government development and the citizens needs. However, the basic service is dissemination of information about structures and functions of particular government agencies. Mutula (2012) elaborates this to include local political information, unit lists, official reports and speeches, tenders, draft bills, education results, payment of taxes, renewing licenses and applying for certain benefits, less time consuming and easy to carry out.

Ndou (2004) in his study, suggests that the majority of government services come under the government-to-citizen, towards providing citizens and others with comprehensive electronic resources to respond to individuals' routine concerns and government transactions. Gregory, (2007), G2G is front, the use of information technologies by different governmental agencies to share or centralize information, or to automate and streamline intergovernmental business processes such as regulatory compliance, has produced numerous instances of time and cost savings and service enhancements, it also enhance and improve inter-government organizational processes by streamlining cooperation and coordination (Gregory,

2007). Some researchers consider it as an internal part of G2G sector and others deal with it as a separate sector of e-government (Riley, 2001)

Mutula, (2012); argues that in many respects, the government to government (G to G) sector represents the backbone of e-government. It is felt that governments at the union, state and local level must enhance and update their own internal systems and procedures before electronic transactions with citizens and business are introduced. Government to government e-government involves sharing data and conducting electronic exchanges between various governmental agencies (Monga, 2008).

2.3.3: The Essence of ICT in E-government

The OECD report, (2003); e-government is not about business as usual, but should instead focus on using ICT to transform the structures, operations and, most importantly, the culture of government. The OECD report further highlights that e-government is an important component in terms of overall reform agendas because it serves as a tool for reform; renews interest in public management reform; highlights internal consistencies; and underscores commitment to good governance objectives (OECD, 2003). World Bank, (2001) e-government as the government owned or operated systems of information and communication technologies that transform relations with citizens, the private sector and/or other government agencies so as to promote citizens' empowerment, improve service delivery, strengthen accountability, increase transparency, or improve government efficiency (Ndou, 2004).

Kraemer and King (2005) argue that IT technology has changed the field of public administration in the United States markedly. By 2002, 67% of adults using the internet had visited a government website: 57% a federal site; 54% a state site; and

42% a local site (Dean, 2002). Nearly all federal agencies and most state governments provide some information or services on the web (Fountain, 2001). The vast majority of city and county governments (95%) had websites in 2004 (Norris, 2006); many offering non financial services and less than 10% offering financial services such as paying taxes, utility bills, parking tickets and licenses/permits (Norris and Moon, 2005; Norris, 2006).

Baoling, L. (2005) in his study stated that e-government aims at utilizing ICT to provide better quality services to the citizens through electronic means. The cost of technology is decreasing day by day through this developing countries can effectively utilized the benefits of technology Allen., et al., (2001). The e-government may improve the quality of life of citizens through better service delivery at low cost. It may eventually transform the processes and structure of the government, empower civil servant to serve citizen better Satuanarayan, J. (2004).

Mofleh, Wanaous & Stratchan (2008) reviewed Jordan ICT initiatives to identify critical factors that might cause Jordan to lag behind in ICT transformation. It was moment the strategy should accommodate the country's ICT initiatives and reflect acceptable levels of change attuned to the country's resources.

Mutagaywa, Kinyeki and Ulanga (2007) reported that the inadequacy of telecommunications infrastructure impacted on the current progress of e-government in Tanzania, this has caused a delay and difficulty in deploying more e-government initiatives. Consequently, the country had low performance and visibility in the international league. Likewise, according to OECD (2003), benefits of implementing e-government are improving efficiency and services, helping achieve specific policy outcomes, helping build trust between governments and citizens, by preventing

corruption, and helping citizens' voice to be heard in the mass debate. The nature of ICT in e-government implementation makes those benefits possible. Democratization will be enhanced, as individual voice can be conveyed electronically to all government departments and agencies without boundaries.

2.3.4: ICT Infrastructures Enabled E-government

E-government has become an umbrella term covering all use of information technology in government (Torres *et al*., 2006) and includes IT-based sharing of information and conducting transactions within the government (G2G), between government and businesses (G2B), and between government and citizen (G2C). As noted by Singh *et al.*, (2010), e-government *"...entails streamlining operational processes, transcribing information held by government agencies into electronic form, linking disparate databases, and improving ease of access to services for members of the public"*. E-government has also been promoted as a strategy of public sector reform, with a focus on how it can improve the managerial process (Kudo, 2010).

Internetworking is required to enable appropriate sharing of information and open up new channels for communication and delivery of new services (Ndou, 2004). For a transition to electronic government, an architecture providing a uniform guiding set of principles, models and standards, is needed. Sharma & Gupta (2003) point out that implementation of the whole e-government framework requires a strong technology infrastructure.

E-government plays a vital role, not only in facilitating market-led initiatives but also in initiating the process of capability building and in coordinating the actions of a large number of interested stakeholders (Mansell and Wehn, 1998). In fact, one of the main benefits of an e-government initiative consists of the promotion of ICT use

in other sectors. In order for e-government staff to interact, transact and communicate electronically with businesses, citizens and other stakeholders, it is necessary to mandate the use of ICT tools and applications. The benefits assured by this intranet system have increased the awareness of ICT importance and have spin off other IT initiatives and programs, computer applications Bhatnagar and Vyas, (2001).

Others studies include spillover effects to various sectors of the economy, for instance through the reduction of opportunities for petty corruption at the service points and improved decision making, and promote the utilization of ICT in other sectors of society (Carter & Belanger, 2005; Kaaya, 2004; Ndou, 2004; Schware & Deane, 2003).

The interaction between governments and its agents and different sectors of society using ICT promises effectiveness and efficiency of government activities, promoting citizen participation and improved communication between government and business organisations (Allen, Juillet, Pacquet & Roy, 2001; Parajuli, 2007). Governments in developing countries, like their counterparts in developed economies, are also implementing e-government to reap the benefits of using ICT in delivering public services (Kaaya, 2004).

2.3.5: Human Capacity with IT Knowledge

Kifle & Cheng (2009) in their studies pointed out that; Poor IT capabilities and experiences exits in public sector organizations due to which E-Government projects suffered just lack of IT knowledge and resources. The presence of ICT skills pool is inevitable for the successful e-government implementation and E-Government requires a combined workforce i.e. ICT based professional management, the

continuous growth of ICT staff now organization has all categories of specialization which include hardware, software, database and communication.

O'Brien & Marakas, 2006 mentioned the four technology areas in his book which are essential for the development of e-services, the organization has tremendous growth in professional workforce, and this leads towards the successful implementation of e-government.

Kamal and Themistocleous (2006) have identified a set of factors from literature that influence the uptake of e-Government. These are: knowledge of technology risks, IT capabilities, market knowledge on new technologies, managerial capabilities, project championships, external pressures, citizen's data privacy and security, and Return on Investments (ROI).

2.3.6: Cost Reduction and Efficiency Gains

Studies (Tapscott, 1996; Amit and Zott, 2001; Malhotra, 2001) agree that ICT has considerable potential to contribute to efficiency gains and cost reductions for private organizations. Furthermore, these benefits constitute a major aspect of e-Government initiatives. Putting services on-line substantially decreases the processing costs of many activities compared with the manual way of handling operations, example, it costs the US Inland Revenue Service $1.60 to process a paper tax form, but only $0.40 to process an electronic form (Al-Kibsi et al., 2001).

The appropriate application of ICT may possibly reduce the number of inefficiencies in processes by allowing file and data sharing across government departments, thereby contributing to the elimination of mistakes from manual procedures, reducing the required time for transactions. Efficiency is also attained by streamlining internal processes, by enabling faster and more informed decision

making, and by speeding up transaction processing. In Beijing's Business e-Park, there is a new system (www.zhongguancun.com.cn) that applies the latest computer and Internet technologies to improve the efficiency and responsiveness of government. If businesses choose to use this system, they can reduce the time required for gaining approval for specific applications from 2-3 months to few days. Moreover, data can now be submitted on line, greatly increasing the quality of service for customers (Lin et al., 2001).

2.3.7: Quality of Service Delivery to Citizens

In the traditional model of public service delivery, the procedures are long, time consuming and lack transparency. An e-government public service delivery reduces the bureaucracy, offers roudn the clock accessibility, fast and convenient transactions, and obviously enhances the quality of services, in terms of time, content and accessibility. Customer satisfaction studies revealed that over 89% of citizens evaluated the service centres as excellent (Rinne et al., 2001). Thus, the quality of services is ensured by the reduced time that users spend on getting official documents, waiting and queuing to get documents, travelling as well as more customized products and services, error free documents, and twenty four hours, seven days in week, three hundred sixty five days in year (24*7*365) accessibility.

ICT creates both pressures and opportunities for network creation and team building. As argued before, an e-government initiative requires a complex web of interrelationships among government, customers, businesses, employees and other governmental agencies. The nature and function of e-government require a network approach to put together skills, technologies, information and knowledge that span the boundaries of different governmental agencies. The provision of integrated

services at one contact point requires the cooperation and collaboration of different departments and agencies, horizontal and vertical integration, and therefore the creation of a large and diversified network of relationships Mansell and Wehn, (1998), on the other hand, an e-Government initiative enables team work creation, giving staff and employee the possibility to participate in forums, and in decision making processes, contributing actively service provision Porrua et al., (2001).

2.3.8: ICT and Increase of the Capacity of Government

The use of ICT for the reorganization of internal administration transactions, communications and interrelationships for easy information flow and transfer offers considerable opportunity to increase government capacity. Intranets allow different departments to share databases of common customers and to pool skills and capacities of their members for problem solving Rinne et al., (2001). These facilities in turn will pledge faster information flow and transfer, quicker and cheaper provision of goods and services, faster and better decision making processes, and unplugged paper bottlenecks. Knowledge based or expert systems help to create a more responsive. A customer satisfaction survey conducted in 2000 for five centers reveals that 94% of respondents evaluate services as "excellent" or "good". This case demonstrates the remarkable improvements that can be realized in service delivery (Rinne et al., 2001).

Bhatnagar, (2001), argues that the public servants are highly encouraged (mainly by rewards) to provide information about services delivered to the citizens undertake the necessary actions to improve and increase the transparency of rules, procedures in service delivery. The e-government helps to increase the transparency of decision-making processes. In many cases e-government offers opportunities for servants to

directly participate in decision-making, by allowing them to provide their own ideas and suggestions in forums and on- line.

2.4: E-Government in Tanzania Context

The government of Tanzania is committed to implementing e-Government. As observed in the National ICT policy 2003 (URT, 2003) that is highly insist on the use of ICT in all public offices for transformation of the provision of the public sector services through ICT.

An evaluation of websites in Tanzania using the World Bank's e-government maturity model is instructive. Yonazi (2010) found out that the website evolution stage is between publish and interactive stages.

During 2004, the President's Office -Public Service Management (PO-PSM) was given a mandate to formulate e-government policy and its implementations (Shame 2009). Another significant development is on local content and knowledge sharing. There has been an increase in the number of local websites and portals. Tanzania in his development agenda, the e-government is now one of the ten priority areas of the National ICT Policy of 2003 (URT 2003).

2.4.1: E-government in ICT Policy

E-government in Tanzania is discussed in the ICT policy that was passed in March 2003. This policy articulates ten main points, which all focus on harnessing ICT in Tanzania. These include strategic ICT leadership; ICT infrastructure; ICT Industry; Human Capital; Legal and Regulatory Framework; Productive Sectors; Service Sectors; Public Service; Local Content and Universal Access.

Another significant progress in e-government in Tanzania is the establishment of the e Government Agency (eGA) under the Executive Agencies Act, Chapter 245. eGA is a semi autonomous institution, responsible for coordination, oversight,

enforcement of e-Government standards, and initiation of e-Government initiatives in the country the establishment of eGA is reflects that implementation of the National ICT Policy (2003).

According to eGA (2012), the agency is to set to implement e-Government initiative through ensuring that: MDAs and LGAs Capacity to implement e-Government Initiatives improved; Public access to e-services improved; ICT shared resources within public service improved; coordination, management and compliance for e-Government initiatives in the public service enhanced; e-Government advisory, technical support and consultancy services improved; and agency's capacity to implement e-Government Initiatives improved.

2.4.2: E-Government Achieved in Tanzania

The UN (2012) reports an increased presence of government institutions with websites available online. Further, various e-Government related initiatives have been implemented. They range from implementation of government networks, capacity building, awareness raising, service transformation and many more. In recent days, various government Institutions have embarked in to transforming the provision of their services into digital form.

A significant stage has been reached regarding online presence. For instance, The Tanzania National Electricity Corporation (TANESCO) has started allowing its customers to buy electricity credits using their mobile phones (TANESCO, 2012). The Tanzania Commission for Universities (TCU) allows online application and response to higher learning education through its website (http://www.tcu.go.tz/).

The National Examinations Council of Tanzania (NECTA) is a government body established in 1973 by the Parliament Act No 21 of 1973 (URT, 1973). The organization is responsible for formulating, conducting and regulating examinations

in Tanzania. NECTA deals with all examinations, from primary and secondary schools to other professional examinations, including teacher college examinations. Since May 2008; NECTA observed to deploy e-government to realise examination results. It gradually is minimizing the traditional channels (newspapers, fax, phone, and post), the website (www.necta.go.tz), and email (es@necta.go.tz).

Tanzania Revenue Authority (TRA) is a central government revenue body established in 1995. The organization is responsible for assessing and collecting specified revenue, and administering and enforcing the tax related to government revenue (URT, 2006). TRA is mandated to conduct its business in the Tanzania mainland. It integrated Tax administration System, Computerised Motor Vehicle Registration system, radio and data communication infrastructure, and the TRA website (www.tra.go.tz) (TRA, 2006). TRA has been modernizing its internal business processes and procedures since 1998, Kitillya, (2006). Most of its processes are prepared using computers. It was noted that lack of computers, poor ICT networks, an unsupportive mindset and a lack of systems integration were identified as factors hamper the progress

The Ministry of Finance and Economic Affairs (MoFEA) is a Tanzania government union ministry responsible for the overall management of government revenue and expenditure. The ministry also provides professional advice to the government on financial and economic affairs. In recent years, the Ministry has benefited from the Public Sector Reform Program (PSRP) in which e-government is a key agenda (PoPSM, 2006). These include installation of telecommunications networks, implementation of various inter and intra ministerial systems, and the creation of a website (www.mof.go.tz).

The UN (2012), Tanzania has made some significant progress in e-government. For instance, in 2010, the world average e-readiness index was 0.4406 while that of Tanzania was 0.2926. In 2012 the country's e-readiness index is 0.3311 at 0.4882 world average.

E-government mechanisms at TANESCO are still at the initial stages. It may be in the fourth stage according the Global E-Government Readiness Report (2005). This stage is referred to as 'Transactional presence' and it allows for a two-way interaction between the citizen and his/her government

2.4.3: Electricity Services in Tanzania

The statistics in 2006 show that, it only 10% of the total population was connected to the national power grid with 1% of these being in the rural areas. Tanzania's national energy policy recognizes the importance and contribution of indigenous energy sources in providing modern energy sources in rural areas. Although the main goal of the national energy policy has been to improve the welfare and living standards of Tanzanians, the consistency between energy policy and plans relating to national economic planning in activities related to agriculture, health, education, water and ICT sectors is still weak (EACS, 2011, Wachira 2010).

TANESCO is the only government company that deals with electricity generation and supply to Tanzanian communities. In this research only focuses on services that are offered by TANESCO to citizens in the form of G2C or G2B and not internal services categorized through a G2G model.

TANESCO deals with citizens and other business communities in terms of: service application, billing sending and payments and customer care services. As a consequence new customers applying for electricity must go to TANESCO offices in

person and get paper forms so that they can start the process of applying for electricity services. The process is time consuming and may take up to six months before electricity is or may be connected to a new customer.

The new customers have to visit TANESCO offices several times to get answers about when their applications are in process. However, sometime applicants who have been applying for electricity for almost a year and their applications have never been attended to.

Service application is an area recognized as a corruption zone for most citizens who apply for service lines from TANESCO. For a long time some company officials and their counterparts mainly known as 'Vishoka', have been engaging heavily in corruption in order to assist customers to get attended to with regard to their electricity applications, bill payments and even some power-cuts.

Introduction of paperless application allows for easy monitoring and also minimizes unnecessary conflicts between customers and TANESCO workers. It will also make the system more open and systematic because the customer can see the stage where his/her application is at, as well as communicate easily with any TANESCO office regarding the next stage of his/her application.

The billing service is also somehow improved via e-government. TANESCO is using the G2B model by allowing its customers to pay their bills through the National Microfinance Bank (NMB) which has a huge network compared to other banks in Tanzania. These accounts, it has easy to access their bills and also make online payments.

TANESCO has more successful for Luku (prepaid) service users. Customers allowed going the next stage of e-government by starting to pay their Luku online through

mobile phones and not as is currently the case whereby customers have to go through Luku kiosks which often have long lines.

2.4.4: Effectiveness of E-government at TANESCO

TANESCO is still at its initial stages in deploying e-government services to its customers. One of the biggest problems that the company faces is poorly skilled ICT labour, which would not help transform the company. This is the case not with TANESCO but with many organizations in Tanzania. The company website has never been updated for almost two years and this study learns that poor funding from the government is used a factor for not expanding online services.

Alphoce Magori, a Computer Analyst Programmer at the Bank of Tanzania (BoT) argues that "there is a negative understanding of the benefits of ICT in Tanzania." Many civil servants, apart from being ICT ignorant, believe that technology has a negative impact on their jobs. He acknowledges that ICT facilities are expensive but this is only in the initial stages.

Gharib Bilal, a former Chief Minister of the Revolutionary Government of Zanzibar once noted that, "Tanzania's civil servants must transform their mindsets and adopt any means that may help to minimize costs of production and increase efficiency". One of these transformations must include the use of ICT facilities in areas where these facilities are available and to make them affordable for everyone to use. According to him, that is the best way to bring e-government technology to communities facing a high illiteracy rate and poverty. The experience of mobile phones in Tanzania illustrates that Tanzanians are ready for change and adopt it when given the opportunity.

2.5: Conceptual Framework

According to Smyth (2004), Conceptual frameworks are structured from a set of broad ideas and theories that help a researcher to properly identify the problem they are looking at, frame their questions and find suitable literature and designed to identify the variables and their interactions. This study was guided by three independent variables; ICT infrastructures, and human capacity in ICTs and uptakes of ICT, dependent variable were improving quality of delivery service. This relationship is explained detailed in conceptual framework in figure 1 below that independent variables concentrated on improve quality of delivery service in the government organizations. The linking government activities with the advanced technology that the world is having today it smooth government operations. That noted, in both developed and developing governments increasingly putting e-government on as model of providing public services to its citizens (Bhatnagar, 2004) to improve quality of delivery services.

Figure 1: **conceptual framework**

<u>**Independent Variables**</u>   <u>**Dependent Variable**</u>
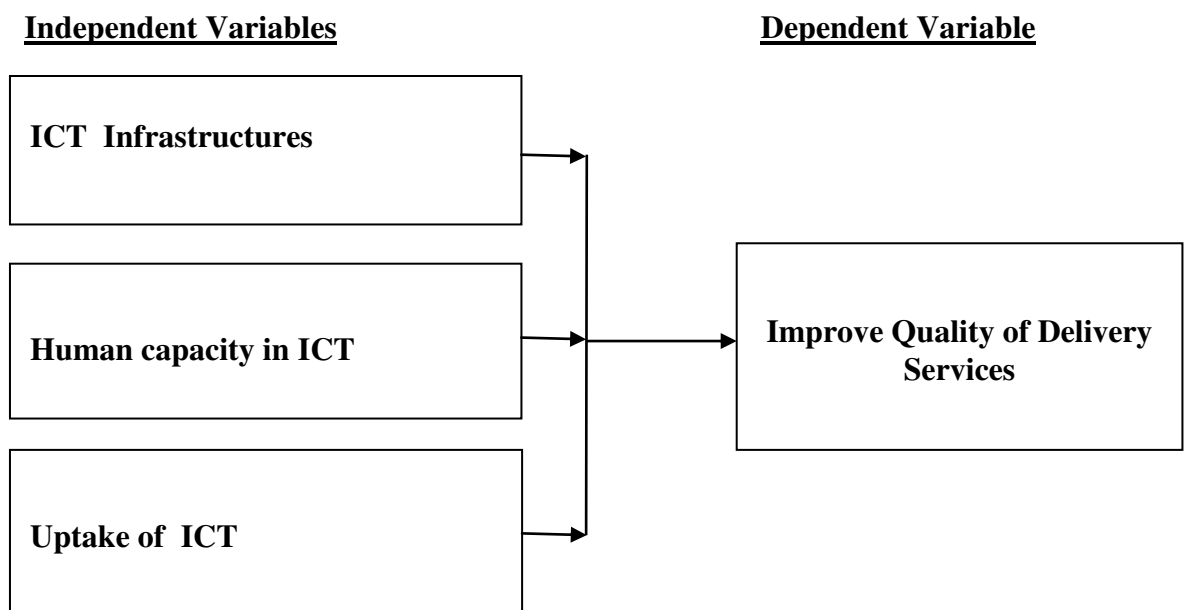
Source: **Author, 2015**

2.6: Review Variables

As pointed out by Kothari, (1990), before describing the different research designs, it suitable to explain the concepts relating to study so that may be better and easily understood, this study were designed based on three independent variables to attributed to dependent variable to assess the role of e-government in delivery of public services. The independent variables are ICT infrastructures, uptake of ICT and human capacity in ICT to the efficient service delivery for views the role of e-government in improve quality of delivery services. The integration of ICT infrastructures, human capacity in ICT and uptake of ICT through e-government it has a potential to improve quality of delivery services and easier the govern government institutions in connected world in improve quality of delivery services as displayed in figure 1.

2.6.1: ICT Infrastructure

In this study ICT infrastructure is marked as a key variable that contribute to improve quality of delivery service throuh e-government in government organizations and agencies. Heeks, (1999) human capacity in ICT is a basic ingredient for government to govern, apply ICT to manage, provide services, and account for its performance through its ICT features that that includes computers with accessories, computers connected with internet, wireless, organization website, computer software, emails, call centres and counters, instant messaging, interactive digital TV, radios, and interactive voice response systems and others channels are mobile devices, personal computers, public internet access points, SMS, telephone are facilities attribute for government to improve quality of delivery service on day to day by employ an integration of inter and intra governmental systems and

procedures to reach the maximum government servants to delivery services. Furthermore in the conceptual framework ICT infrastructures involved in e-government as key features that determine the quality and stages of e-Government implementation (Ho 2001, Holliday 2002) and its role in delivery of public services. ICT infrastructures building connectivity with the number e-government facilities to function vertically and horizontally and enable the public servants to share file and data sharing across government departments, thereby contributing to the elimination of mistakes from manual procedures, reducing the required time for transactions to attain efficient service delivery through streamlining internal processes, faster and more informed decision making, and by speeding up transaction processing eventually improves service delivery.

The ICT infrastructures allow public servants to use a single point of entry to send and receive information and process transactions across multiple departments. In this case, ICT infrastructures it provide the necessary tools that allow communication among public offices through web-based Cordela (2007), in the e-government ICT infrastructures has potential contribution the public servant to it task easy to complete task, save time, easy to consult other information online and share with other staff for decision making in delivery public services.

The ICT infrastructures it automatically influence government to employ e-government to improve quality of delivery services as argued by Nohria and Berkley (1994) that the implementation of ICTs to automate existing administrative procedures can improve the administrative system's efficiency and effectiveness without changing its underpinning logic. This means e-government contributes towards achieving principles of Weberian theory in maximum efficiency.

The full and well installed ICT infrastructures it assure internetworking which is very key for e-government to success by enable appropriate sharing of information and open up new channels for communication in improve quality of delivery services. The e-government putting services on-line through strengthened it substantially decreases the processing costs of many activities compared with the manual way of handling operations of government operations in delivery public services, for that matter in improves delivery services. The Intranets allow different departments to share databases of common customers and to pool skills and capacities of their members for problem solving Rinne et al., (2001) in improve quality of delivery services.

2.6.2: Human Capacity in ICT

The human capacity in ICT is an essential variable for e-government to operate and facilitates public servants to improve quality of delivery service. It all related to human resource ability to use effectively the computer, internet, computer and intranet and other IT knowledge and experiences on their obligation and responsibilities to improve delivery services.

The presence of ICT skills pool is very crucial for the successful e-government implementation that based on professional management, the trained ICT staff in organization on hardware, software, database and communication as pointed out by Kifle & Cheng (2009) in their study. The availability of relevant and sufficient e-Government services to the public entities it prospective with the adequate and competence of government staff with appropriate trained and experience in ICT maximize the role of e-government in improve quality of delivery services.

The presence of ICT specialist to provide to an organization it accelerate the deployment of relevant services and channels, and increase access for adequate information in the government structure in improve quality of delivery services it also build ICT based professional management in decision making for delivery services in government organizations

2.6.3: Uptake of ICT

ICT diffusion is rapidly taking place in most government organizations in this conceptual framework implies the uptake of ICT it play a great in the role of e-government in improve quality of delivery services in the government operations. It penetrates deeper in a government to the human resource skills in all sectors in delivery of public services as argued by Freeman & Aspray, (1999).

The uptake of ICT this explains level for individual, organization, systems the acquisition of the technology and ends with the utilization of the technology in delivery of public services in the sector. It considers the extent does ICT infrastructures in government office employed facilities like computer, internet, website, e-mails in delivery public services to people. It further views implementation of e-government in government organization as instrument to improve standard and quality in delivery public services. This study look computer knowledge and skill increase and widen capacity of public servants in delivery public services

ICT create both pressures and opportunities among public servants to initiatives and using ICT facilities to reach the standard and quality in delivery of services in widen the diversified thinking and practice in e-government to delivery of public services and ultimately easier delivery services to people due uptake of ICT also in long run it less cost when it well used in delivery of public services. Frequencies of use internet

to delivery services explain will enhance efficient in service delivery. When the uptake of ICT among the public servants and entire system accept and prefer to use while delivery of public service on their daily operations it automatically increases efficient in the process. The improve quality of delivery service and government responsiveness to the public, Teicher et al. (2002).

UN, (2003), the development of e-government relates to the benefits that e-government can give, the e-government are "overcoming the complexity of bureaucracy and simplify the process of dealing with public bureaucracy, providing seamless electronic public services, increasing efficiency, transparency and accountability of public resources. It integrates internal organization with its external organization that will provide a multiple to improve quality of delivery services.

The e-government plays a vital role, not only in facilitating delivery of public services initiatives but also in initiating the process of capability building and in coordinating the actions of a large number of interested stakeholders, Mansell and Wehn, (1998). In fact it makes government to initiative and promotion of ICT use in government sectors public staff to improve quality of service delivery.

2.7: Literature Review Summary

This section describes the summary and identifies gaps in the reviewed and empirical framework refers the previous studies done by scholars in the e-government concepts;

The Information systems success model by DeLone and McLean (1992) found to be a useful framework for organizing Information System, this model also has updated its variables of the six major dimensions of the (Petter, DeLone & McLean 2008) include: first system quality, information quality, service quality, system use, user satisfaction and net benefits that all have contribution to individuals, groups,

organizations and nations through improved cost reductions, improved performance and efficiency.

The e-government models of delivery by, Brynard (2002) explains that e-government on connection of all scenarios of government-to-citizen (G2C), government-to-business (G2B), and government to government (G2G) Kitaw, (2006); that direct to improvement in efficiency services delivery by public servant

Technology adoption life cycle model that defined as an organization's decision to acquire a particular technology for various tasks, and the adoption process refers to the individual's decision whether to integrate an innovation into his or her life (Straub 2009). Rogers (1995), an adoption life cycle is the process through which an individual or other decision making unit passes, from first knowledge of innovation to forming an attitude towards the innovation.

The theory of bureaucracy by a German Philosopher Max Weber (1864-1920), McLean (1996), the theory addresses the role of bureaucrats as permanent workers in public offices and elected officials in connection with rules that govern the hierarchical office. Marshall (1998) argues that bureaucracy includes a body of administrative officials. It stipulates the duties and roles of each official in the system of administration and it describes their responsibilities. Andreski, (1984), the set of people perform the administrative functions to increasing efficiency in public sector.

The change in New Public Management (NPM) has several manifestations, but most typically it is a management theory about how to reform government by replacing rigid hierarchical organizational structures with more dynamic networks of small organizational units. The bureaucracies are governed by a set of formal, explicit,

comprehensive and stable set of rules that are impersonally enforced in decision-making. The study considers three models and one theory based on relationship between roles of e-government in delivery public service to citizens

The study uses these three models and one theory to assess the role of e-government in delivery public services to citizens, private companies, government as consider TANESCO provider of electricity services to entire Tanzanian.

The reviewed empirical findings regard e-government mostly concentrates on factors influencing e-government adoption. These include: relative advantage, trust, internet accessibility, internet skill, performance and effort expectancy, social influence and facilitating conditions, citizen's higher perception of usefulness, ease of use, quality and trust of e-government, lack of adequate ICT infrastructure, political will, language and management procedure hinder e-government adoption (Al-Shafi & Weerakkody 2010; Bwalya & Healy 2010; Carter & Weerakkody 2008; Colesca & Dobrica 2008). The studies did not clearly talk about the role of e-government in delivery public services.

The current study will fill in the gap by assess the role of e-government in delivery public service with a select case study of TANESCO that is a sole electricity supply company in the Tanzanian context. Although this study is built on previous studies on e-government, the current study will use three models and one theory that are information systems success model, e-government models of delivery, technology adoption life cycle models and bureaucracy theory.

Furthermore, the current study brings new knowledge by focusing on role of e-government in delivery public service in the Tanzanian context. The study investigates the ICT infrastructures, uptake of ICT and human capacity in ICT to the

role of e-government in delivery of public services and lastly recommendations on how e-government enhance in delivery of public services in Tanzania. The current study seeks to fill the gap by providing the empirical evidence on the role of e-government in delivery public services using mixed research methodology.

2.8: Research Gaps

The preceding discussion highlights an important deficiency in theory as well as practice. Empirical studies on e-Government and role of e-government in delivery of public services in Tanzania are still rare. As a result in literature does not provide sufficient information concerning role of e-government in delivery public services relevant to Tanzania thus showing a theoretical gap. Specifically, there is no guidance is available on how the Government of Tanzania can measure the role e-government in delivery public services. Consequently, there is a risk that the e-Government practitioners will be stymied. They are uninformed about the issues influencing general ICT deployment, and those influencing realization of role of e-government. This study sought to means add to initiatives that current e-government issues are implemented with an inadequate understanding the role of e-government in delivery public services. If these issues remain unaddressed, the resulting cost will add a heavy burden to Tanzania's taxpayers and other development partners as noted massive e-government are invested and re-investing in public sectors.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1: Introduction

This chapter describes the research methodology used in this study. Specifically, the sections of this chapter cover and reflect on issues regarding research design, population and target population, sampling frame, sample and sampling techniques, data collection procedures and instruments, data processing and methods employed for data analysis.

Kothari, (1990) research methodology consists of methods to which data are collected and analyzed in the context of the study. Walter (2006) argues that methodology is the frame of reference for the research, which is influenced by the standard in which our theoretical perspective is placed or developed. This chapter will thus essentially focus on the research process and the kind of tools and procedures that were used in this study.

3.2: Research Design

Research designs are procedures for collecting, analyzing, interpreting and reporting data in research studies (Creswell & Plano Clark 2007). A case study research design was used as the study was descriptive in nature. Both quantitative and qualitative methods as Pickard (2007) suggests for in descriptive research were applied. The study adopted a mixed-methods research procedure in order to enjoy the benefits of both quantitative and qualitative approaches that contain elements of both qualitative and quantitative approaches as recommended by Brewer & Hunter 1989; Howe 1988; Miles & Huberman 1984.

3.3: Population

According to Kothari, (1990) 'population' refers to the total of items about which information is desired. This study were involved a population of 169 employed staff of Tanzania Electric Supply Company Limited (TANESCO) workers at Ruvuma region whereby the sample frame, sample and sampling techniques to draw it respondents. TANESCO was chosen in this study because it is a government entity that provides public service as the study intends to assess the role of e-government in delivery of public services.

3.4: Sample Frame

Johnson and Christensen (2008) define a sampling frame as a list of all elements in a population. This study consist of some existing list of the population which it representative of the inquiry population 31 respondents that is equal to 18% were selected from the entire population of 169 employees in TANESCO Ruvuma Region Tanzania

3.5: Sample and Sampling Techniques

In research a sample is defined as a set of elements taken from a larger population according to certain rules and the number of people or elements in a sample is regarded as sample size (Johnnson & Chrisensen, 2008). This study used both random and purposive sampling techniques. The purposive sampling was applied specifically to select heads of department and stratified random sampling was used to select respondents from various departments in the company.

A total of 31 respondents were selected to provide viable and representative view of each departments and sections in TANESCO regional office. It had at least one staff selected in section and a maximum of nine staff from department that include; power generation department with three section (mechanics, electrical and control), power

distribution with five sections (planning engineer, construction, maintenance, revenue protection and emergency), finance with three sections (billing, accountant and procurement and store), human resource department, ICT department and customer relations department. As discussed above, departments and sections refers to the specialization in the organization to assure mission of that organization, link and interact within the organization as displayed in table1.

Table 1: Sampling Frame

Department	Section	Total public servants	Sample size
Administration	-	4	2
Finance	Billing	19	3
	Accountant	4	2
	Procurement and Store	5	2
Power Generation	Mechanics	22	2
	Electrical	6	2
	Control	25	3
Power Distribution	Planning Engineer	11	2
	Construction	14	3
	Maintenance	24	3
	Revenue Protection	8	1
	Emergency	12	2
Human Resource	-	4	2
ICT	-	4	1
Customer Relations	-	7	1
Total		**169**	**31**

Source: Ruvuma Regional TANESCO Office, Dec. 2014

3.6: Data Collection Instruments

The data for this study were collected through questionnaires as mainly an instrument to gather information from respondents on the role of e-government in delivery public services with the focus on ICT infrastructures, human capacity in ICT and uptake of ICT as detailed structured questionnaires (appendix I) that have a lined with research questions and specific objectives assemble primary data. Questionnaires comprised a number of sections all incorporating both open-ended

and closed questions. These different sections sought responses on role of electronic government in delivery public services. The questionnaire was divided into different sections for easy reading and completion. A short, simple informative cover letter was written to inform respondents the aims and importance of the research. Questions' containing clarity and consistence in meaning to all respondents was regarded to reducing bias; and well-constructed research instruments to contribute to reduce non-response.

Some of the data for this study were obtained directly through observation. The researcher was intended in recording the internet network connections availability and accessibility in a TANESCO regional operation. The researcher made an effort to minimize systematic errors by subjecting the research instruments to a rigorous process of editing as argued by Neuman (2000).

3.7: Data Collection Procedures

The data for this study was obtained from both primary and secondary sources. Primary data were collected through the structured questionnaires, the physical visit and electronically. The physical visit the research visit respondent office and data was collected in an environment where the respondents fill the manually questionnaires sent through e-mails and respond electronically the data collection procedures were in two approaches that depends on the convenient of the respondents, data was validation and verifiability.

The secondary source yielded data from books, official documentations, and other publication and existing literature, TANESCO Ruvuma region records were consulted such as; ICT inventory, ICT materials, reports and various activities done by public servants for the purpose of this study

3.8: Validity and Reliability

Validity and reliability describes how collection of the data or how the conduction of the analysis brings reliable findings (Saunders et al. 2009). In this study ensured validity by reducing subject or participant error, subject or participant bias, observer error and observer bias. Essentially, the sampling technique used ensured fairness in representation.

3.9: Data Analysis and Presentation

The collected data was then analyzed and presented by using descriptive analysis and presented in frequencies, tables, figures. The analysis was mainly employ the statistical packages for social scientists (SPSS version17.0) were used to analyze both qualitative and quantitative data collected analysis of the data and interpretation made.

The qualitative information was categorized and code within the specific theme of interest in relation to the study objectives. The interested statistical data were the response of respondents on internet connectivity availability and accessibility all the time and number of all attempt (appendix 1).

The questionnaires were used to draw information on the role of e-government delivery public services in TANESCO regional office under the study through selected respondents based on indipendent variables ICT infrastructures, human capacity in ICT and uptake of ICT in contribute to realise the dependent variable in delivery of public service by examined defined variables and relationships using basic statistical techniques, results were used to refine and supplement this information, elaborate on the role of e-government in delivery of public services to an efficient service delivery and summarize the relations among the variables data

presented in the form of frequency tables, figures to describe and explain study findings. The general purpose of this analysis was to uncover meaningful relations among the measured variables and to represent important aspects of the role of electronic government in delivery of public services, where both quantitative and qualitative data allowed a better interpretation, conclusion and recommendation.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1: Introduction

This chapter presents research findings and discussion of the study. These findings are mainly product of questionnaires and documentary reviews. The findings presented according to research objective indicated in chapter one namely assess the role of e-government in delivery of public services in Tanzania Electric Supply Company Ltd Ruvuma region office. The first section points out demographic characteristics of the respondents, second section talks about the Information and Communication Technology Infrastructure, third section explains human capacity, fourth section talks about uptake of ICT and last but not least recommendations made according to the study results in role of electronic government in delivery of public services.

4.2: Demographic of the Respondents

The study involved respondents with different backgrounds in terms of sex, education level and position, number years in the organization to describe their profile. The responses from respondents are mainly captured by number of questions through questionnaires from both heads of department, technical and ordinary staff concern with role of e-government in delivery of public services. It also during visit TANESCO office observations were made in general office and departments on the ICT infrastructure like computer with internet connection, organization website and practically staff delivery of public services through e-government.

4.2.1: Sex of Respondents

A total of 31 respondents reached during the study at Tanzania Electric Supply Company Limited (TANESCO) regional office were 71% men and 29% women

respectively as displayed in table 2, this just view how gender is considered in delivery of public services.

Table 2: **Sex of respondents**

	Frequency	Percent	Cumulative Percent
Male	22	71.0	71.0
Female	9	29.0	100.0
Total	**31**	**100.0**	

Source: Research Findings, 2015

4.2.2: Level of Education of Respondents

The educational qualification of respondents was classified in four categories; first category 3.2% primary school, 16.1% are vocational level, 48.4% diploma holder while 32.3% are degree holder as displayed in the table 3. As also shows in the figure 2 that 66.8% of degree holder, 22.2% diploma holder and 11.1% are female while 18.2% degree holder, 59.1% diploma holder, 18.2% vocational and 4.5% primary level were men. In this statistics the majority of staff was graduates in which there have great contributions to the employ e-government in delivery of public services as considered that education has a positive relation between application information communication and technology usage in this connectivity world.

Table 3: **Level of education of respondents**

	Frequency	Percent	Cumulative Percent
Secondary	1	3.2	3.2
Vocational	5	16.1	19.4
Diploma	15	48.4	67.7
Degree	10	32.3	100.0
Total	**31**	**100.0**	

Source: Research Findings, 2015

Figure 2: Level of education and sex of respondents
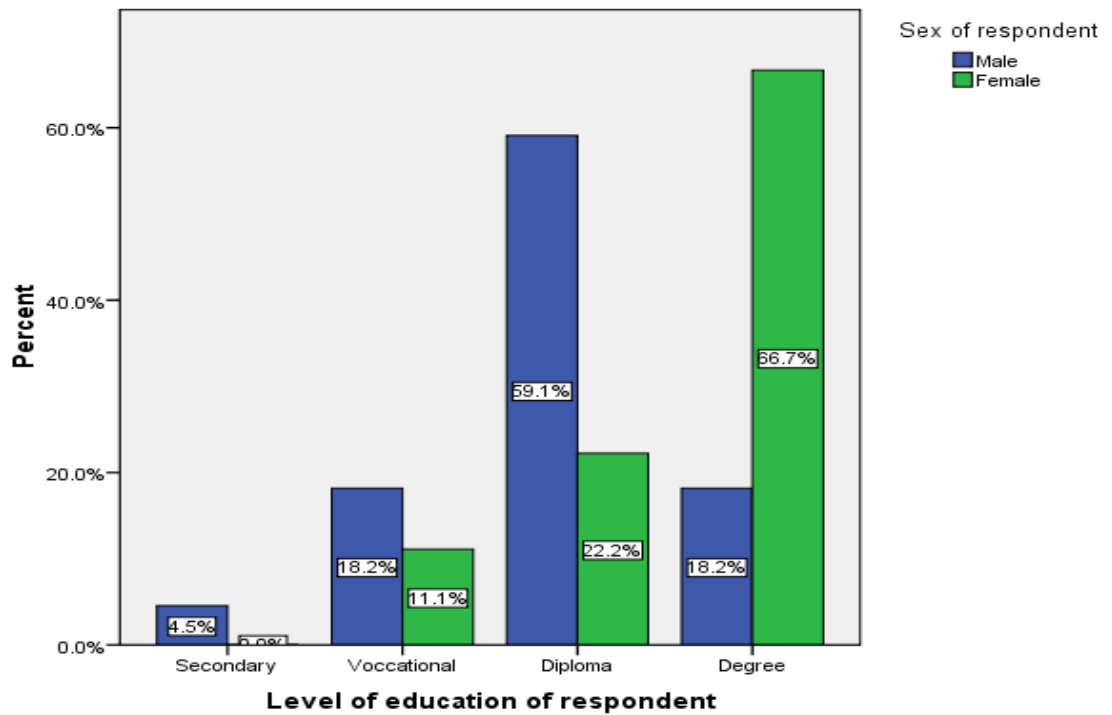
About 41.9% of staff had being in organization for more than six years, 38.7% for 3-6 years,12.9% are in organization for 1-3 years and only 6.5% are less than a year as shown in table 4. It's true that employee and time of working with an organization has relation to improve quality of delivery services. It further revealed that the more experiences in an organization have contributed to improve the role of e-government in delivery of public services within the government organization.

Table 4: **Time have been in organization**

	Frequency	Percent	Cumulative Percent
Less than year	2	6.5	6.5
1 - 3 years	4	12.9	19.4
3 - 6 years	12	38.7	58.1
Above 6 years	13	41.9	100.0
Total	**31**	**100.0**	

4.2.3: The Department Respondents Working

The respondents interviewed are working in seven departments that include; power generation department with three sections (mechanics, electrical and control), power distribution with five sections (planning engineer, construction, maintenance, revenue protection and emergency), finance with three sections (billing, accountant and procurement and store), human resource department, ICT department and customer relations department as displayed in table 5 and figure 3.

Table 5: Department were respondent working

	Frequency	Percent	Cumulative Percent
Administration	2	6.5	6.5
Finance	7	22.6	29.0
Power generation	7	22.6	51.6
Power distribution	11	35.5	87.1
Human resource	2	6.5	93.5
ICT	1	3.2	96.8
Customer relations	1	3.2	100.0
Total	**31**	**100.0**	

Source: Research Findings, 2015

Figure 3: Department and time the respondents working in the organization
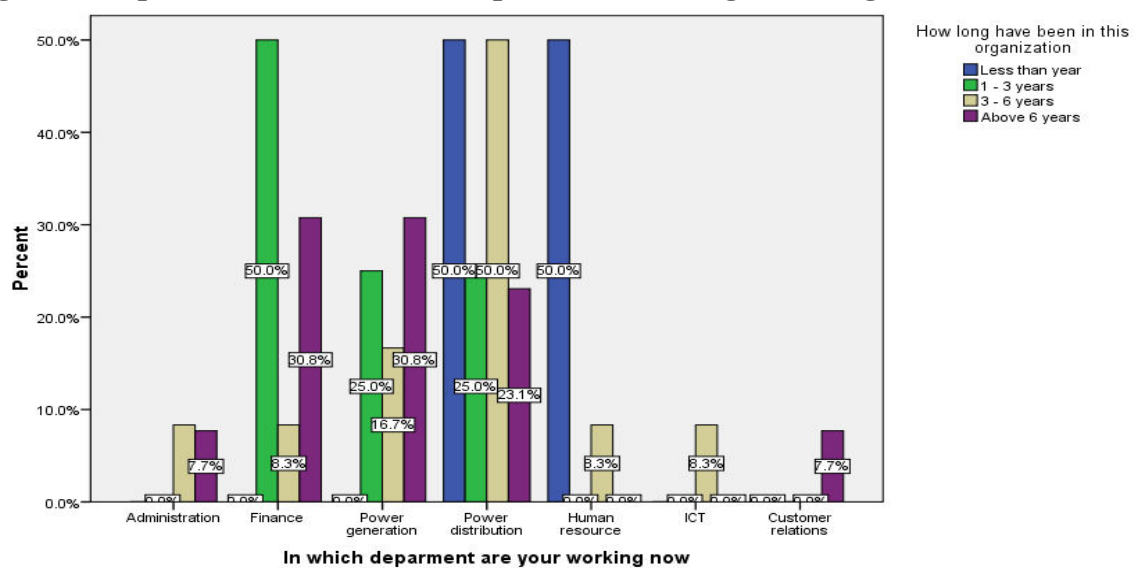
Source: Research Findings, 2015

4.3: Contribution of ICT Infrastructure in Delivery of Public Services

Organization website and internet connectivity; Regards with the response from all respondents in seven departments of TANESCO regional office 100% agree that organization has website as shown in the figure 4 and table 6, it also observed and stated by respondents computer are connected to internet as shown in table about 77.4 of the respondents of the public servants are using internet to receive and send information on vertical and horizontal interactions while delivery public services. As statistics revealed the organization has improved the availability of computer connected to internet for assure its delivery of services through e-government. It further noted that whole TANESCO regional office has one ICT specialist for technical support to an entire region, which this support Tanzania ICT policy (2003) that government insisted invest and install ICT facilities and ICT specialist for technical assist the government sectors employ e-government in delivery of public services, from the statistics TANESCO has acknowledges that e-government has the potential to enhance quality and effectiveness delivery public services. A shortfall noted the TANESCO regional office has only one ICT specialist which it difficult to save entire regional.

Table 6: Computer connected to internet

	Frequency	Percent	Cumulative Percent
Yes	31	100.0	100.0
Total	**31**	**100.0**	**100.0**

Source: Research Findings, 2015

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Figure 4: Responds an organization have a website
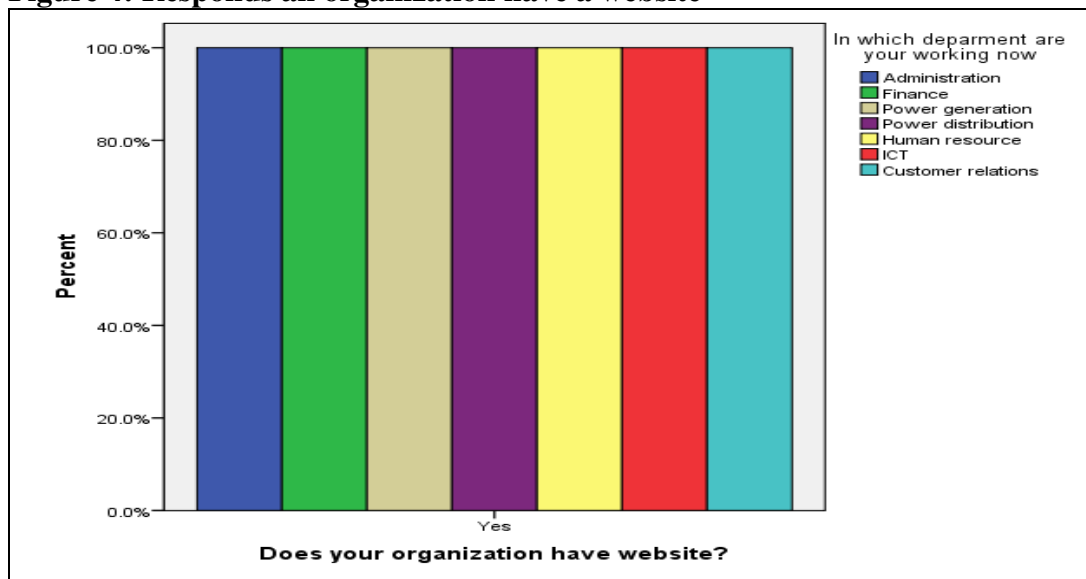
The thirty one respondents that interviewed during the study about 19.4% strongly agree, 67.7% agree, 12.9% disagree on the role of ICT infrastructure at the work improve quality in delivery of services as displayed in the table 7, the same response were agreeable that the role of ICT infrastructure has great contribution to transparency and accountability in delivery of services at work. This statistics cement that ICT infrastructure has an impact in improve quality of delivery public services by employ an electronic government are improving efficiency, effectiveness, transparency and responsibility of public governments in delivery of public services in government structures.

Table 7: Role of ICT infrastructure in delivery of public services

	Frequency	Percent	Cumulative Percent
Strongly agree	6	19.4	19.4
Agree	21	67.7	87.1
Disagree	4	12.9	100.0
Total	**31**	**100.0**	

The functional ICT has great role to efficiency in delivery of services as results from thirty one respondents about 71.0% strongly agree, 29.0% agree while none has stated disagree and strongly disagree as demonstrated in the table 8. The results on ICT infrastructure is strongly agreed that has a great contribution to paramount the role of the e-government in delivery of public services but rate of utilization of ICT facilities in the organization was rated 12.9% low, 71.0% medium and 16.1% high as from the reflected results it is revealed that ICT facilities utilization is medium

The study show a very potential to attain an efficiency by streamlining internal processes, by enabling faster and more informed decision making, and by speeding up transaction processing and employ the latest computer and internet technologies to improve the efficiency and responsiveness of government.

Table 8: Function ICT in contribution to efficiency in delivery of services

	Frequency	Percent	Cumulative Percent
Strongly agree	22	71.0	71.0
Agree	9	29.0	100.0
Total	**31**	**100.0**	

Source: Research Findings, 2015

The cost reduction and time saving in delivery of public services, 35.5% strongly agreed, 58.0% agreed and only 6.5% disagree that delivery of public services through e-government it has contribution to less cost in delivery of public services as shown in table 9. Based on statistics delivery of public services through e-government it potential to contribute to efficiency gains and cost reductions. Furthermore, this study view role of e-government when the public servants delivery of services on-line substantially decreases the processing costs of many activities compared with the manual way of handling operations. It further study show that

appropriate application of ICT may possibly reduce the number of inefficiencies in processes by allowing file and data sharing across government departments, thereby contributing to the elimination of mistakes from manual procedures, reducing the required time for transactions as table 9 show cost reduction to work with clients through electronically.

Table 10: Cost reduction to work with clients through electronically

	Frequency	Percent	Cumulative Percent
Strongly agree	11	35.5	35.5
Agree	18	58.0	93.5
Disagree	2	6.5	100.0
Total	31	100.0	

Source: Research Findings, 2015

The response from respondents staff during the study about 16.1% rate a low, 77.4% rate at medium and 6.5% rate at high disagree on role of ICT infrastructure in enhance creativity and innovation in delivery of service at your work as displayed in table 11.

Table 11: Role of ICT infrastructure in creativity and innovation in delivery of service

	Frequency	Percent	Cumulative Percent
Low	5	16.1	16.1
Medium	24	77.4	93.5
High	2	6.5	100.0
Total	**31**	**100.0**	

Source: Research Findings, 2015

Further results show that 25.8% strongly agreed, 67.7% agreed and only 6.5% disagreed that computer knowledge and skill increase and widening capacity of public servants in delivery public services. Basically consider this statistics the role ICT infrastructure it averaged at medium rate in enhance creativity and innovative in delivery of public services on electronic government. Also statistics on computer

knowledge and skill increase and widening capacity of public servants in delivery public services as it pressures and opportunities for network creation and team building as argued before, an e-government requires a complex web of interrelationships among government, employees and other governmental agencies horizontal and vertical integration, and therefore create a large and diversified network of relationships and enables team work creation, giving employee the possibility to participate in forums, and in decision making processes, contributing actively in delivery of public services.

The ICT infrastructure in the role of speed delivery of services in an organization respondents rates 16.1% it low, 83.9% medium and none rated high as displayed in table 12. Base on the results the speed of internet as one of ICT infrastructure has a significant contribution to role e-government in delivery of public services.

Table 12: Role of ICT infrastructure in speed delivery of service

	Frequency	**Percent**	**Cumulative Percent**
Low	5	16.1	16.1
Medium	26	83.9	100.0
Total	**31**	**100.0**	

Source: Research Findings, 2015

The thirty one respondents in receive and provide information through internet, the respondent shows that 77.4% receive and provide information every day, 19.4% once per week while 3.2% twice per week as demonstrated in the table 13 and figure 5. This result revealed that a larger percent of the staff are providing services and information through internet externally and internally that meaning the uptake of ICT is more than seventy percent

Table 13: Receive and provide information through internet

	Frequency	Percent	Cumulative Percent
Every day	24	77.4	77.4
Once per week	6	19.4	96.8
Twice per week	1	3.2	100.0
Total	**31**	**100.0**	

Source: Research Findings, 2015

Figure 5: Receive and provide information through internet
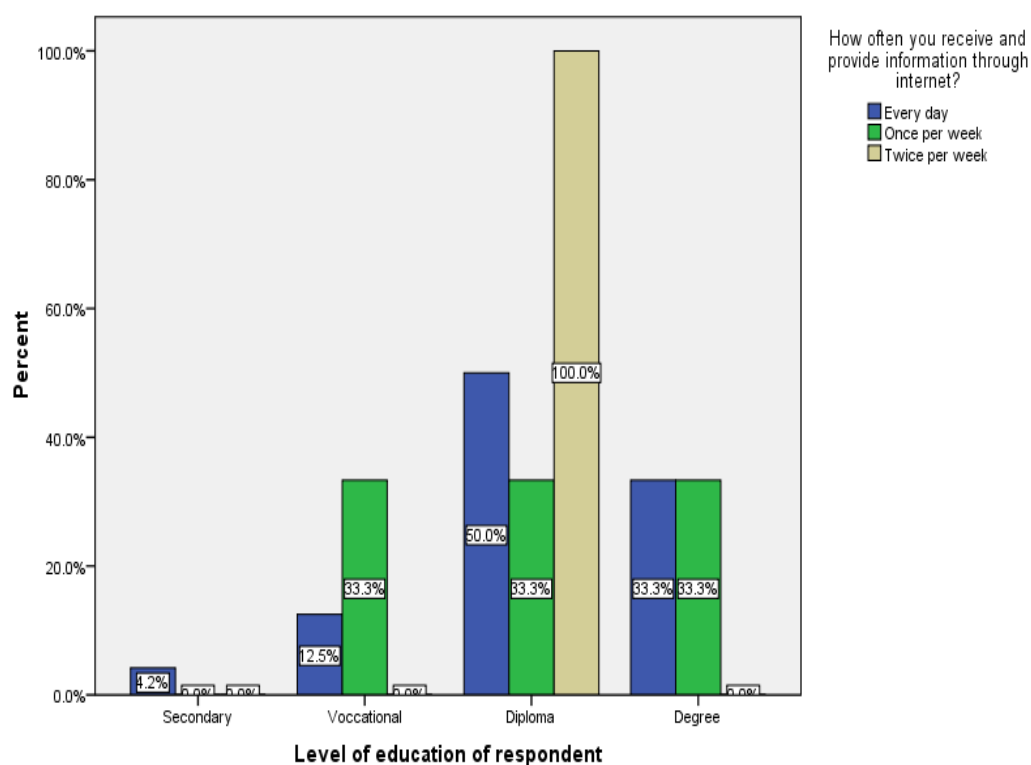
Source: Research Findings, 2015

4.4: Human Capacity on ICT in Delivery of Public Services

The organization has ICT specialist that support application of ICT to enhance the role of e-government in delivery of public services as demonstrated by all interviewed staff in the organization. The response on staff attended a computer short course; about 87.1% of the respondent's attended a short course computer to enhance ICT knowledge while 12.9% not attended at all as displayed in the table 14. It further noted that organization had managed to training majority of staff on

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computer short course that has great influence to enhance the role of e-government in delivery of public services, also the study shows that the thirty one respondents 61.3% use internet often, 35.5% regularly while 3.2% not using at all to delivery of public services.

Table 14: Staff attended a computer course to enhance ICT knowledge

	Frequency	Percent	Cumulative Percent
Yes	27	87.1	87.1
No	4	12.9	100.0
Total	**31**	**100.0**	

Source: Research Findings, 2015

The thirty one respondents shows that 29.0% are strongly agree and 71.0% agree that computer knowledge, skill and experiences easer delivery of services through e-government as show in the table 15 and figure 6. This statistics it truly support that the staff with computer knowledge, skill and experiences has great contribution in delivery of services through e-government.

Table 15: Computer knowledge, skill and experience in e-government

	Frequency	Percent	Cumulative Percent
Strongly agree	9	29.0	29.0
Agree	22	71.0	100.0
Total	31	100.0	

Source: Research Findings, 2015

Figure 6: Show knowledge and skill of using computer to delivery of services
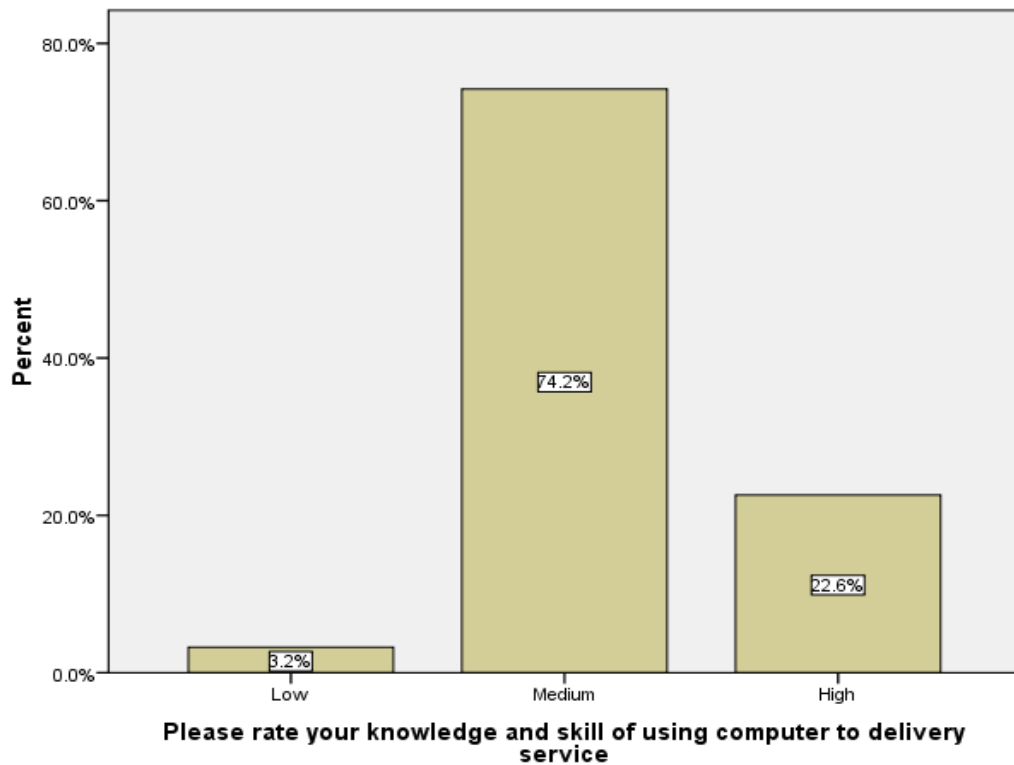
In the thirty one respondents, about 93.5% are prefer to working through both face to face and electronically, 6.5% prefer in person that face to face only while none of them prefer electronically alone as shown in table 16. This statistics revealed that delivery of public services is it is very material in this connectivity world but still face to face still needed to enhance the role of electronic government in delivery of public services.

Table 16: Respondent in daily work prefer way of delivery services

	Frequency	Percent	Cumulative Percent
In person (face to face)	2	6.5	6.5
Both ways	29	93.5	100.0
Total	**31**	**100.0**	

Working through e-government enhance capacity of staff and save time in delivery services as thirty one response from public servants show that 45.2% strongly agree,

54.8 agree and none of them disagree and strongly disagree on working through e-government enhance capacity of staff and save time in delivery services table 17.

Table 17: Working through e-government and save time in delivery services

	Frequency	Percent	Cumulative Percent
Strongly agree	14	45.2	45.2
Agree	17	54.8	100.0
Total	31	100.0	

Source: Research Findings, 2015

The statistics revealed that working through e-government it internally administration transactions, communications and interrelationships for easy information flow and transfer offers considerable opportunity to increase government capacity. Intranets allow different departments to share databases of common customers and to pool skills and capacities of staff to faster and transfer of services and information quicker and cheaper, Knowledge based or expert on systems help to create a more responsive in delivery of public services.

The ICT infrastructure and computer skill enhanced in delivery of public services to people as revealed from thirty one respondent's results 32.2% strongly agree, 58.0% agree and 9.7% disagree that the ICT infrastructure and computer skill enhance delivery public services to people table 18. The respondent further results show that 71.0% strongly agree, 25.8% agree and only 3.2% disagree that a well application of ICT increase the capacity of government in delivery services displayed in table 17. Based on the statistics revealed that e-government implementation it has potential in interact, transact and communicate electronically, with citizens and other stakeholders that make easier delivery of public services whereby E-government has shown an umbrella term covering all use of information technology in government and includes IT-based sharing of information and conducting transactions within the

government (G2G), between government and businesses (G2B), and between government and citizen (G2C).

Table 18: ICT infrastructure and computer skill enhance delivery public services

	Frequency	Percent	Cumulative Percent
Strongly agree	10	32.3	32.3
Agree	18	58.1	90.3
Disagree	3	9.7	100.0
Total	**31**	**100.0**	

Source: Research Findings, 2015

The e-government in government organization improve standard and quality in delivery of public services as results shows that 35.5% are strongly agree, 61.3% agree and 3.2% disagree on the implementation of e-government in government organization improves standard and quality in delivery public services as displayed in table 19. The statistics revealed that the e-government in delivery of public service reduces the bureaucracy, fast and convenient transactions, and obviously enhances the quality of services, in terms of time, content and accessibility.

Table 19: The e-government improves standard and quality in delivery public services

	Frequency	Percent	Cumulative Percent
Strongly agree	11	35.5	35.5
Agree	19	61.3	96.8
Disagree	1	3.2	100.0
Total	**31**	**100.0**	

Source: Research Findings, 2015

The respond on how often staff receive and provide information through internet and speed while delivery of services 60% with low speed, 80.8% with medium speed staff receive and provide information through internet. It noted that 20% with low speed 19.2% medium speed receive and provide information through internet once per week, 20% with low speed staff receive and provide information through internet

as shown in figure 7. Further responds from interviewed 42.9% by 57.9% strongly agree and 17.6% by 82.4% that computer knowledge, skill with experience and working through e-government enhance capacity and save time of servants respectively in delivery of public services . Based on the respond it is reveal that the internet with reasonable speed has greater contribution to delivery of public services it also revealed that no staff receive and provide information through internet with high speed internet.

Figure 7: Computer knowledge, skill and experience in delivery of public services
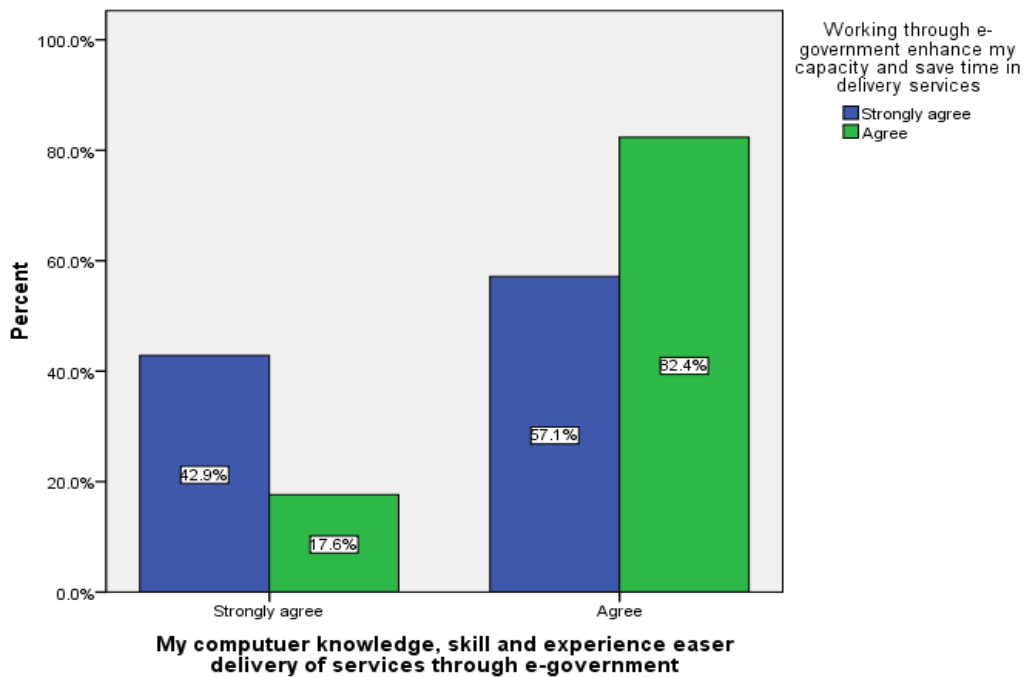
Source: Research Findings, 2015

4.5: Uptake of ICT in Delivery of Public Services

In regards of uptake of ICT in improve quality of delivery services in government operations the response based on thirty one respondents about 32.3% were strongly agree, 58.1% were agree and 9.6% disagree as displayed in the table 20. In this

statistics revealed that the uptake of ICT has great influence in improve quality of delivery services in government organization.

Table 20: The uptake of ICT in improve quality of delivery services

	Frequency	Percent	Cumulative Percent
Strongly agree	10	32.3	32.3
Agree	18	58.1	90.3
Disagree	3	9.7	100.0
Total	31	100.0	

Source: Research Findings, 2015

The implementation of e-government in government organization depends much on acceptance of government systems and procedures in delivery public services in this about 35.5% of response were strongly agree, 61.3% agree and 3.2% disagree on the scenario. In this statistical data it greatly, the success of e-government in government organizations are depends on the acceptance in government systems and procedures as demonstrated in table 21.

Table 21: The e-government acceptance in government systems and procedures

	Frequency	Percent	Cumulative Percent
Strongly agree	11	35.5	35.5
Agree	19	61.3	96.8
Disagree	1	3.2	100.0
Total	31	100.0	

Source: Research Findings, 2015

From the response of thirty one respondents about 25.8% are strongly agree, 67.7% agree and 6.5% disagree that computer knowledge and skill increase accepted and widening capacity of public servants in delivery public services in government organizations as presented in the table 22 and figure 8. This data support and show that acceptance, computer knowledge and skill it widening capacity of public servants in delivery of public services

Figure 8: The uptake of ICT in improve quality of delivery services in department
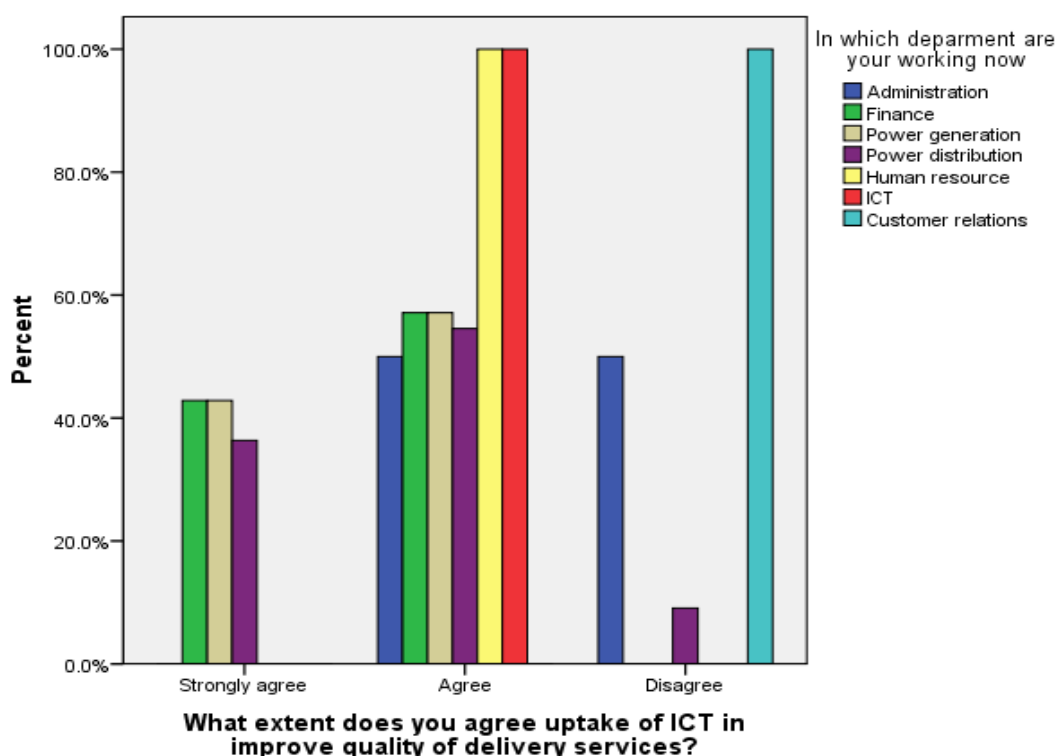
Source: Research Findings, 2015

Table 22: Computer knowledge and skill increase accepted and widening capacity of servants in delivery public services

	Frequency	Percent	Cumulative Percent
Strongly agree	8	25.8	25.8
Agree	21	67.7	93.5
Disagree	2	6.5	100.0
Total	31	100.0	

Source: Research Findings, 2015

The role of e-government in delivery of public service delivery obviously enhances the quality of services and accessibility. The application of e-government to the public servants has demonstrated to increases their performance and adhered to standards in delivery public service.

4.6: Summary of Research Findings

The key finds from this study were summarized based on three variables that contribute to the role of e-government in delivery of public services within the government organizations. The data were mainly captured by number of questions through questionnaires from both heads of department, technical and ordinary staff in Tanzania Electric Supply Company Limited (TANESCO) Ruvuma region. A total of 31 respondents reached during the study at Tanzania Electric Supply Company Limited (TANESCO) in Ruvuma region.

The first focus were ICT Infrastructure, from the finding the data collected it revealed that organization has a website and computers are connected to internet, in regards with the response from all respondents in seven departments of TANESCO regional office 100% agreed have website, it also stated by respondents and observed during study about 77.4% of the respondents of the public servants are delivery public services through vertical and horizontal. The statistics revealed that ICT infrastructure at the work improve quality in delivery of services; it also demonstrated transparency and accountability, efficiency, effectiveness, transparency and responsibility of public governments in delivery of public services in government structures. It further discovered that ICT infrastructure plays a big role in speed of internet as one of ICT infrastructure has a significant contribution to role e-government in delivery of public services.

The second focus was the human capacity on ICT to influence the role of e-government in delivery of public services in government organization. The data was shows that organization one ICT specialist supporting staff in application of ICT to enhance the role of e-government in delivery of public services as response from the

respondents, about 87.1% of the respondent's attended and 12.9% not attended a short course computer. It further noted that organization had managed to training majority of staff on computer short course that has great influence to enhance the role of e-government in delivery of public services as displayed 61.3% use internet often, 35.5% regularly while 3.2% not using at all to delivery of public services. The data revealed that 29.0% are strongly agreed and 71.0% agree that computer knowledge, skill and experiences easer delivery of services through e-government this statistics it truly support that, the staff with computer knowledge, skill and experiences has great contribution in delivery of services through e-government it were further supported by 93.5% of public servants are prefer to working through both face to face and electronically, 6.5% prefer in person that face to face only and in other way the e-government enhance capacity of staff and save time in delivery services as shown by the public servants 45.2% strongly agree, 54.8 agree and none of them disagree and strongly disagree to enhance capacity of staff and save time in delivery of public services.

Third, in regards of uptake of ICT in improve quality of delivery services in government operations the response based on thirty one respondents about 32.3% were strongly agree, 58.1% were agree and 9.6% disagree. About 25.8% are strongly agree, 67.7% agree and 6.5% disagree that computer knowledge and skill increase accepted and widening capacity of public servants in delivery public services in government organizations. It explained that implementation of e-government in government organization depends much on acceptance of government systems and procedures in delivery public services in this about 35.5% of response were strongly agree, 61.3% agree and 3.2% disagree on the scenario.

In this statistical data, the success of e-government in government organizations are depends on the acceptance in government systems and procedures, the acceptance, computer knowledge and skill it widening capacity of public servants in delivery of public services. In this statistics revealed that the uptake of ICT has great influence in improve quality of delivery services in government organization.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1: Introduction

This chapter comprises four parts: part one a brief of the chapter about what is entail, part two talks about the summary from the study, part three is draw conclusion from the entire study, part four recommendations made based on the study, it also indicates some areas that still need further research and makes recommendations for policy makers and planners for enhance role of e-government in delivery of public services on the connectivity world.

5.2: Summary

In this statistical data it greatly, the success of e-government in government organizations are depends on the acceptance in government systems and procedures, the acceptance, computer knowledge and skill it widening capacity of public servants in delivery of public services. In this statistics revealed that the uptake of ICT has great influence in improve quality of delivery services in government organization.

5.3: Conclusions

It concluded from the study that e-government has a great role in delivery of public services by begin using new technologies that may stimulate a good relationship, better performance, cost reduction and timely services to public servants to serve citizens.

The study concluded that e-government is a kind of governmental administration which is based on ICT services. Electronic government describes the use of technologies to facilitate the operation of government and disperse of government information and services. This implies that the world has changed from manual

procedures and standards stepped into a new knowledge era which now it is inevitable to change as from developed and developing countries that aiming a tremendous impetus to move forward with higher quality, cost-effective, government services and a better relationship between citizens and government.

It further concluded that e-government is a kind of governmental administration which is based on ICT services, it implies that the world has changed from manual procedures and standards stepped into a new knowledge era which now it is inevitable to change.

In regards to statistical data from the study, it concluded that in the government organization still e-government not maximizing it role in improve quality of delivery services as noted ICT infrastructures are not fully installed, low uptake of ICT and inadequate knowledge and experiences in applying IT to improve quality of delivery services.

5.4: Recommendations

In regards to this study, in order for e-government to be successful in Tanzania in ministry department agencies and other governmental organizations study were draw the following recommendations;

The study recommends on capacity building to public servants on ICT for paramount delivery of public services in government operations.

The study recommends the government to ensure that ICT infrastructures in government organization are strengthened so as to reap the benefits of technology in delivery of public services.

The study also recommends that government should promote and strengthening the environment for more uptake of ICT in government institutions to assure role of e-government in delivery of public services.

5.5: Areas for Further Research

The study recommends for further research on e-government specifically focus the citizens who are receiver of services delivered by government in order to maximize uses of new technologies more effective, also this study insisted further research as it revealed in chapter two in the literature review the e-government phenomenal is still new in governance and leadership this create a highly needed to conduct more as possible on the e-government.

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APPENDICES

Appendix 1: Instruments

This questionnaire is designed to assess the role of electronic government in delivery public service a case study TANESCO Ruvuma Region, Tanzania to pursue Master's of Science in Leadership and Governance. The information obtained will be used for academic purposes only and will therefore be handled with the highest level of confidentiality. Your cooperation will be highly appreciated.

PART A: GENERATION INFORMATION

1.1 Sex of respondent: Male [ ] Female [ ]

1.2 In which department/section are you working now:

......................../........................

1.3 How long have you been in this organization? *(please circle the answer)*

1). Less than year   2) 1- 3 years   3) 3 – 6 years 4) Above 6 years

1.4 Level of education of respondent: 1.Primary.......... 2. Secondary: ....

3. Vocational: ....4. Diploma: .... 4. Degree: ....5. Other............

PART B: INFORMATION AND COMMUNICATION TECHNOLOGY INFRASTRACTURE

2.1 Does your organization have website

Yes   [   ]   2. No   [   ]

2.2 Does your computer connected to internet

Yes   [   ]   2. No   [   ]

2.3 ICT infrastructure in your office is very key to practice e-government

1. Strongly agree [   ] 2. Agree [   ] 3. Disagree [   ] 4. Strong disagree [   ]

2.4 Does ICT infrastructures enabled e-government in your organization to delivery services

1. Strongly agree [   ] 2. Agree [   ] 3. Disagree [   ] 4. Strong disagree [   ]

2.5 How do you rate an overall 1CT infrastructure in delivery public services?

1. Low   [   ]   2. Medium [   ] 3. High   [   ]

2.6 A well function ICT has great contribution to efficiency in delivery services

1. Strongly agree [   ] 2. Agree [   ] 3. Disagree [   ] 4. Strong disagree [   ]

2.7 How do you rate the utilization of ICT facilities in your office?

   1. Low [ ],   2. Medium [ ],   3. High [ ]

2.8 Please rate the role 1CT infrastructure in your office

    i. Quality of services

        1. Low [ ],   2. Medium [ ],   3. High [ ]

   ii. Transiparency and accountability

        1. Low [ ],   2. Medium [ ],   3. High [ ]

  iii. Enhance creativity and innovation in delivery of service

        1. Low [ ],   2. Medium [ ],   3. High [ ]

   iv. Easier speed in delivery of service

        1. Low [ ],   2. Medium [ ],   3. High [ ]

   v. How often you receive and provide information through internet

      1. Every day[ ] 2. One per week [ ] 3. Twice per week [ ] 4. Once per month [ ]

PART C: HUMAN CAPACITY IN ICT

3.1 Does your organization have ICT specialist to support application of ICT

   Yes   [ ]   2. No   [ ]

3.2 Have you attended a compuer course to enhance ICT knowledge?

   Yes   [ ]   2. No   [ ]

If Yes

     1. Short course   2. Long course

3.3 My computer knowledge, skill and experience easer my delivery services through e-government

   1. Strongly agree [ ], 2. Agree [ ], 3.Disagree [ ], 4.Strong disagree [ ]

3.4 Please rate your computer knowledge and skill

    i. Knowledge of using the computer to delivery service

        1. Low [ ],   2. Medium [ ],   3. High [ ]

   ii. Knowledge of using the internet to delivery services

        1. Low [ ],   2. Medium [ ],   3. High [ ]

  iii. Computer and internet education

        1. Low [ ],   2. Medium [ ],   3. High [ ]

3.5 Working through e-government enhance my capacity and save time in delivery

services

1. Strongly agree [   ], 2. Agree [   ], 3.Disagree [   ], 4.Strong disagree [   ]

3.6 Does application of ICT in the job create network and team in my organization in delivery services

1. Strongly agree [   ], 2. Agree [   ], 3.Disagree [   ], 4.Strong disagree [   ]

3.7 Well utilization of ICT increase the capacity of government in delivery services

1. Strongly agree [   ], 2. Agree [   ], 3.Disagree [   ], 4.Strong disagree [   ]

3.8. Does competence and skill in IT increase efficiency and effectiveness in delivery public services?

1. Strongly agree [   ], 2. Agree [   ], 3.Disagree [   ], 4.Strong disagree [   ]

3.9. It is easy to delivery services to people through internet

1. Strongly agree [   ], 2. Agree [   ], 3.Disagree [   ], 4.Strong disagree [   ]

3.10. It is very less cost to work with citizen through electronic

1. Strongly agree [   ], 2. Agree [   ], 3.Disagree [   ], 4.Strong disagree [   ]

3.11. How many times do you use internet to delivery services?

1. Often, 2. Regularly, 3.Not at all

3.12: In your daily work do you prefer delivery service to your clients through (Please circle)

1. In person (Face-to-face), 2. Electronically, 3. Both ways

PART D: UPTAKE OF ICT IN DELIVRY OF SERVICE

4.1. What extent does you agree uptake of ICT in improve quality of delivery services?

1. Strongly agree [   ], 2. Agree [   ], 3.Disagree [   ], 4.Strong disagree [   ]

4.2. The implementation of e-government in government organization depends much on acceptance in government systems and procedures in delivery public services?

1. Strongly agree [   ], 2. Agree [   ], 3.Disagree [   ], 4.Strong disagree [   ]

4.3. Does computer knowledge and skill increase accepted to widening capacity of public servants in delivery public services?

1. Strongly agree [   ], 2. Agree [   ], 3.Disagree [   ], 4.Strong disagree [   ]

Thank you so much for your time and assistance

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MS TCDC

**MS – Training Centre for
 Development Co-operation**

Appendix 2: Introduction Letter

To Whom it may concern,

2nd March2015

**RE: FIELD VISIT FOR MSc IN GOVERNANCE AND LEADERSHIP
STUDENT**

This is to introduce Emmanuel Petro Gunda who is a Masters student currently
undertaking Research to your company/organization for data collection purposes.

Kindly avail him with the necessary information he requires.

Thank you in advance.

Yours Sincerely,

Per Lykke Søndergaard
Academic and Training Quality Coordinator

Appendix 3 : Ruvuma Region Map

RUVUMA: POPULATION DISTRIBUTION BY DISTRICT/COUNCIL - 2012