ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF PUBLIC ADMINISTRATION AND DEVELOPMENT MANAGEMENT

BARRIERS TO ELECTRONIC PUBLIC SERVICE DELIVERY: THE CASE OF ETHIOPIAN REVENUES AND CUSTOMS AUTHORITY

BY

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A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF ARTS IN PUBLIC MANAGEMENT AND POLICY (MPMP)

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DECLARATION

I declare that this thesis prepared in partial fulfillment of the requirement for degree of Masters of Arts in Public Management and Policy (MPMP) entitled ***'Barriers to electronic public service delivery: the case of Ethiopian revenues and customs authority'*** is my original work made independently with close guidance of my advisor.

Declared by: Abrham Endalew _____

Name **signature**

Confirmed by Advisor: Tilahun Teklu (PhD) _____

Name **signature**

June 2017

Addis Ababa

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Abbreviations and Acronyms

ASYCUDA	Automated Systems for Customs Data
CSC	Common Service Center
E-government	Electronic Government
E-readiness	Electronic Readiness
E-service	Electronic Service
E-tax	Electronic Tax
ERCA	Ethiopian Revenues and Customs Authority
FDRE	Federal Democratic Republic of Ethiopia
GPS	Global Positioning System
G2B	Government to Business
G2C	Government to Citizen
G2E	Government to Employee
GoE	Government of Ethiopia
G2G	Government to Government
ICT	Information and Communication Technology
IT	Information Technology
ICT4D	Information Communication Technology for Development
IDI	Information Development Index
ITU	International Telecommunication Union
MCB	Ministry of Capacity Building
MDG	Millennium Development Goal
MoCIT	Ministry of Communication and Information Technology

NGO's	Non-Governmental organizations
NRI	Network Readiness Index
OECD	Organizations for Economic Cooperation and Development
PA	Public Authorities
PC	Personal Computer
SIGTAS	Standard Integrated Government Tax Administration System
SPSS	Statistical Package for Social Science
UN	United Nations
UNESCO	The United Nations Educational, Scientific and Cultural Organization
VAT	Value Add Tax

Abstract

The purpose of this study was to investigate barriers to electronic public service delivery in Ethiopia. Based on predetermined criteria of selection, Ethiopian revenue and customs authority was selected as a case institution. To conduct this study, descriptive research approach was used. Both primary and secondary source of data has been utilized. Primary data was gathered using a questionnaire, interview and observation. Respondents who are directly providing public service to the customer have participated in questionnaire survey. Subsequently, the data was organized using SPSS version 20 statistical software. Tables, charts and figures have been used for data presentation. Descriptive data analysis, frequency and percentage have been employed to present, interpret and analyze the data. Qualitative data obtained from the interview made with officials, experts and beneficiaries was presented and analyzed in an integrated way in support of other primary data. The findings of the study revealed that there are barriers that hinder e-electronic public service delivery in ERCA. Generally, barriers can be classified in different categories (legislative barriers, administrative/organizational barriers, technological/technical barriers, social and financial barriers). Hence, the result implies that there is a need to fulfill the requirement for effective electronic public service delivery in the side of the government. Further, the organization should give due attention to strengthen the institutional capacity to implement e-service. Both employees and customers should also play their part in the process of electronic public service delivery.

Key words: ***E-service***, ***Public service delivery***, ***E-readiness***, ***Government to citizen (G2C)***, ***Government to Business (G2B), e-service barriers***

CHAPTER ONE

Introduction

1.1. Background of the study

The growth of Information and Communication Technology (ICT) has had a substantial impact on the way local, state and national governments function (Gupta, 2008). Because of the development and growth of ICT, public service delivery is becoming more efficient and effective in most parts of the world (Al-Jaghoub et al. 2010). It is because ICT can deliver services with the minimum cost and in a better quality.

Information and Communication Technology (ICT) refers to technologies such as the Internet and other such technologies that cover the spectrum from basic infrastructure implementation to technologies that improve services and operations in an organization (Gupta, 2008). Al-Jaghoub et al. (2010), said ICTs are useful instruments, capable of increasing government agencies' effectiveness, efficiency and transforming their services.

The delivery of different services by using ICT and other technologies as a means of delivery is called electronic service (e-service). E-service is deeds, efforts or performances whose delivery is mediated by information technology (including the Web, information kiosks and mobile devices) (Rowley,2006).

When it is compared with developed countries, the growth and development of ICT in developing countries is still in its infant stage. Now a day, while there is increasing adoption of e-services by governments, the level of implementation differs from country-to-country (Hassan, 2011).

According to Hassan (2011), the pace with which e-services are made available and adopted is lower than planned in the least developing countries. Governments tend to be slow in releasing new services and citizens often prefer to conduct transactions with the government through paper forms and physical presence rather than using online methods. This is may be because of different constraints in the area.

In developed countries different types of public services are delivered to the citizen through ICT. Their day to day life becomes highly dependent on ICT and other technological innovations. But in developing country like Ethiopia, even though some improvements have been observed

recently, providing public services by using ICT (e-service) is at minimum stage. As Adam (2010), Ethiopia's ICT sector remains far behind with the rest of the world. It sits at the bottom of the Information Development Index (IDI) of the International Telecommunications Union, scoring 0.97 and placing154th out of 159 countries in 2010. This information is true even today, when Ethiopia has weak national technological capacity. But this does not mean that nothing is there in the area.

Ethiopia has been designing different policies and strategies to facilitate the growth and development of ICT sector. The policy and strategy designed in August 2009 by the FDRE Ministry of Information Communication and Technology is a good indicator of the ongoing efforts made by the government. The policy aims to overcome the identified problems with the sector and utilize ICT in different public sectors like education, health, agriculture and other related basic services of the country.

According to the ICT policy and strategy of Ethiopia (2009), The Ethiopian Government has made the development of Information and communications technology one of its strategic plan priorities. ICT in Ethiopia at present is at the early stage of development. The major indicators pointing to the low level of ICT Development are:

a) The absence of appropriate legal and regulatory frameworks.

b) Limitations in telecommunications infrastructure and low level of internet services penetration.

c) Lack of organized data and information resources, and poor accessibility to those that exist.

d) Lack of skilled human resources coupled with low ICT literacy.

e) Under developed private sector.

By taking the above challenges as a starting point, the objectives of the policy are;

a) Build ICT Infrastructure throughout the country and make it accessible.

b) Create the necessary skilled human resources required for the proper development and application of ICT and expand the society's basic knowledge and usage of it.

c) Develop the necessary legal framework for the application of ICT and design and implement appropriate security systems for the prevention of unlawful practices.

d) Promote the use of ICT for modernizing the civil and public services to enhance its efficiency and effectiveness for service delivery; so as to promote good governance and reduce wastage of resources.

e) Expand and strengthen the role of the private sector to ensure the rapid development of ICT.

In addition, a multi-lingual national portal (www.ethiopia.gov.et) is also one of the achievements in the recent years. Government ministries and agencies have now their own portals that are connected to the national government portal. These ministries and agencies use their portals to deliver informational and transactional services to citizens/customers. The portals provide a platform to interact with citizens through various e-participation features. Even though efforts have been made by the government, there is still a gap in what is there and what is demanded. This is may be because of different barriers in the area.

So far, studies in the area of e-service have been conducted by different scholars with different time frames. Here are the most relevant articles related to barriers to electronic public service delivery are presented.

Vassilakis et al. (2005), have conducted a study on barriers to electronic service delivery and organized the identified barriers into five major categories (legislative barriers, administrative barriers, technological barriers, user-culture barriers and social barriers). Alshehri, and Drew (2010), have also identified list of barriers which hinder the implementation of e-government. As e-service is one dimension of e-government, the identified barriers are expected to affect e-service implementation. Moreover, Antony (2003), have tried to investigate determinants of e-service operations and finally 20 determinants of e-service operation has identified.

Al-Jaghoub, Al-Yaseen, and Al-Hourani, (2010), were conducted a study on evaluation of awareness and acceptability of using e-government services in developing countries by taking Jordan as a case country. The study concluded that awareness of e-government did not reach the required level.

In the above part, studies in the area of barriers to electronic public service delivery have been assessed. Actually, some studies have been made with the context of developing countries like

Jordan. But the attention given for barriers of electronic public service delivery in Ethiopia is insignificant when compared to the existing problem in the area of e-service.

So, this study is conducted to investigate barriers to electronic public service delivery in the Ethiopian public service providing organizations by taking Ethiopia Revenue and Customs Authority (ERCA) as a case institution.

1.2. Statement of the problem

As Hassan (2011), e-service is defined as the provision of service over electronic networks such as the internet and other electronic devises. In e-service; a customer can receive the service through the internet at home or in other places without having physical contact with the service provider.

In developing countries, while there is increasing adoption of e-services by governments, the level of implementation differs from country-to-country. However, the paces with which e-services are made available and adopted is lower than planned in the least developing countries. Governments tend to be slow in releasing new services and citizens often prefer to conduct transactions with the government through paper forms and physical presence rather than using online methods. The differences indicate that e-government in less developing countries face slower progress or even stagnation because they encounter multiple and complex challenges (Hassan et al. 2010).

Although some challenges are faced the developed countries as well, the ability of these countries to recover and overcome the challenges are far ahead of the developing countries abilities. The reason is the difference in internet technological infrastructures, practices, usage, the sufficient capital to build up expensive national information infrastructure and sufficient knowledge (Hassan et al. 2010).

Identifying and overcoming these challenges for developing countries is not always easy; given that the most currently published e-service strategies are based on experiences from developed countries, which may not be directly applicable to developing countries.

Ethiopia is trying to facilitate the penetration of ICTs in to the service sector by designing policies and strategies. But facts indicated that (the introduction statement in the 2009 ICT policy of Ethiopia and other international ICT related reports) e-service in Ethiopia is still underdeveloped.

So far, different studies have been conducted in Ethiopia. To mention some relevant studies: Kiflie (2016), conducted a study on the role of e-government in enhancing performance of public service

qualities by taking Document Authentication and Registration Agency as a case institution. The study explored that successful e-government implementation has very positive effect on improving public service quality. Again the findings have tried to investigate the bottlenecks for successful implementations of e-government. According to Kiflie (2016), poor leadership commitment and knowledge gap, poor IT skills and Customers awareness gap, public sectors prefer to stay with traditional service delivery mechanisms, poor website, design, features and contents were taken as challenges. But the study did not critically and specifically investigate barriers to electronic public service delivery in government organizations.

Gossa (2015), has also studied about the efficiency of electronic service delivery by taking one electronic service delivery system i.e. Automated Systems for Customs Data (ASYCUDA).

The objective of the study was to explore the efficiency of electronic service delivery by taking

Automated System for Customs Data (ASYCUDA) as the case study in Ethiopia Revenue and Customs Authority (ERCA).

The finding indicates that even though ASYCUDA is facilitating the import and export process of the authority, it faces implementation problems. The prevalence of those problems creates inefficiency in the maximizations of the benefits expected from implementations of ASYCUDA. According to Gossa (2015), the major technical and institutional problems associated with implementations of ASYCUDA were lack of trained manpower, repeated system failure because of different reasons, frequent electric power interruptions and frequent network failures.

The study has examined the challenges that faced the implementation of only one electronic public service delivery system, ASYCUDA. So that challenges that hinder the effectiveness of other electronic service delivery systems has missed. But this study aimed at investigating possible barriers to electronic public service delivery in general.

Jember (2014), has also conducted a study on challenges of managing development programs in public sector by taking e-government program of Ethiopia as a case.

The purpose of the study was to assess the challenges of managing development programs in the public sector with special focus on e-government program. Descriptive survey method was used. The study was conducted by using 4 public institutions engaged in e-government program.

The results have revealed that e-government program has faced and still facing various challenges like lack of public awareness, limited participation of beneficiaries in design and implementation, limited electronic service development culture in Ethiopia, lack of organizational capability, weak program governance and poor strategic e-readiness.

The study focused on challenges of managing development programs like e-government. So, it has not touched e-service barriers specifically.

Unlike the previous studies, the focus of this study was to investigate barriers to electronic public service delivery in the Ethiopian service providing federal organizations by taking Ethiopian Revenues and Customs Authority (ERCA) as a case institution.

Hence, conducting a study on barriers to electronic public service delivery will fill the gap of theoretical knowledge and reveal operational significance for all government organizations which are engaged in electronic public service delivery.

Alongside, even though studies have been conducted in the area, no research undertaken previously in the issue understudy with the same title and the same case institution.

1.3. Research questions

1.3.1. General question

The general and underlined question of this study was what are barriers to electronic public service delivery in Ethiopia?

1.3.2. Specific questions

I. How are employees' understanding and attitude regarding electronic public service delivery and their readiness to implement it?

II. To what extent are the organization and the employee ready enough to deliver public service electronically?

III. What are factors affecting electronic public service delivery in ERCA?

IV. What measures can be taken by the government, the organization, the employee, and the beneficiaries/customers in order to minimize/overcome barriers to electronic public service delivery?

1.4. Objectives of the study

The study has the following general and specific objectives.

1.4.1. General objective

The overall objective of this study was to investigate barriers to electronic public service delivery in Ethiopia.

1.4.2. Specific objectives

The specific objective of this study was;

I. To assess employees understanding and attitude regarding electronic public service delivery and their readiness to implement it.

II. To assess the readiness of both the organization and the individual service providing employees to deliver electronic public service.

III. To investigate barriers that affect electronic public service delivery in ERCA.

IV. To indicate measures that can be taken by the concerned body and suggest possible solutions so as to solve barriers to electronic public service delivery in Ethiopia.

1.5. Scope of the study

There are many federally owned organizations in Ethiopia which are engaged in electronic public service provision. But, as federal organizations are huge and complex, incorporating all federal organizations as a case will make the study unmanageable. So, the researcher selected only one organization (Ethiopian Revenue and Customs Authority (ERCA)) which engaged in electronic public service provision. The organization can serve as a representative of other electronic public service providing federal organizations as all they are under the umbrella of FDRE government and functioning with the same national environment.

Reasons to select ERCA as a case institution are; The nature of public service the organization is providing is highly ICT demanding and e-service can be the right mode of service delivery, if it implemented successfully. In addition, ERCA is a key organization in terms of economic contribution as it is the major source for national budget. Moreover, the organization works with complex systems and it manages sensitive issues which are difficult to operate manually.

1.6. Significance of the study

This study is primary useful in that it will fill the existing knowledge gap about barriers to electronic public service delivery in Ethiopia.

Moreover, it will help officials of ERCA to see barriers to electronic public service delivery which existed in ERCA and they can work with those barriers and improve electronic public service

delivery in their organization. The outcome of this study will also provide valuable information to other government organizations and to all service giving institutions about actions to be taken and strategy to be followed for successfully implementation of e-service. It may also serve as a spring board for further study in the area.

1.7. Operational definition of concepts

- **Barriers to electronic public service delivery:** it can be anything from anywhere which hinders the implementation of electronic public service delivery in government organizations.
- **E-readiness:** (electronic readiness) means the degree to which the organization, the employee or customers are willing or prepared to obtain benefits which arise from information and communication technologies (ICTs).
- **E-service or electronic service:** it is a new concept emerged as a result of the innovation and development of ICT. In this study, e-service is a service provided by using ICT and other electronic media as a means of delivery.
- **Public service delivery:** it is the process of provision of public services from government organizations to the citizen or business.
- **Government to citizen (G2C):** a relationship born out service delivery and it indicates a flow of services from the government to the citizen.
- **Government to Business (G2B):** a relationship born out service delivery and it indicates a flow of services from the government to the business organizations.

1.8. Limitations of the study

Because of different constraints with the researcher, the study was limited to Ethiopian Revenues and Customs Authority (ERCA). So, it may have some limitations for perfect generalization. In order to generalize the barriers of electronic public service delivery, all public service giving organizations engaged in electronic public service delivery, from the minister offices to Woreda and Kebele level must be considered. Any researcher who is interested in the area can conduct the same study by widening the scope of the study to reach in a more generalized result.

1.9. Organization of the thesis report

This research report is organized in to five chapters. The first chapter contains an introduction, problem statement, research question and objective, scope, significance and limitation of the study. The second chapter contains review of related literatures that serves as a point of reference for every proceeding. The third chapter contains the research methodology which gives a general briefing and the technicalities on how the study was conducted. Data presentation, interpretation, discussion and analysis are presented in the fourth chapter. Finally, major findings, conclusions and recommendations are presented in the fifth chapter.

CHAPTER TWO

Review of Related Literatures

2. Introduction

A review of prior, relevant literature is an essential feature of any academic research. So in this section, in order to create a conceptual clarification and a base to the study, definitions, basic concepts and related issues of electronic public service delivery are presented.

2.1. Empirical literatures

This section contains the empirical studies which focuses on prior academic researchers concerning barriers to electronic service delivery. Accordingly, the following studies were selected from other countries and from Ethiopia.

2.1.1. Similar Study outside Ethiopia

Vassilakis et al. (2005), have conducted a study entitled "Barriers to Electronic Service Development". The study has identified different stakeholders of e-service and then questionnaires were distributed to the stakeholders and structured interview was made with selected key informants. Finally, the study surveyed and documented the most important barriers that hinder electronic service development, deployment, acceptance and use. Vassilakis et al. (2005), organized barriers into five major categories (legislative barriers, administrative barriers, technological barriers, user-culture barriers and social barriers).

Another article in the area of 'barriers to electronic service delivery' has been written by M. Alshehri, and S. Drew (2010), in the title "Implementation of e-Government: Advantages and Challenges". The objective of the paper was to review the updated and available literature about e-government implementation stages, its challenges and benefits.

In their work, M. Alshehri, and S. Drew (2010), have identified list of barriers which hinder the implementation of e-government. As e-service is one dimension of e-government, the identified barriers are expected to affect e-service implementation. The identified groups of barriers are presented as follows.

Table 2.1. A Summary of barriers by Alsheri and Drew

Category	**Barriers**
Technical	ICT Infrastructure
	Privacy
	Security
Organizational	Top management support
	Resistance to change to electronic ways
	Collaboration
	Lack of Qualified Personnel and Training
Social	Digital Divide
	Culture
Financial	High Cost

The article written by Antony (2003), entitled "Determining and assessing the determinants of e-service operations" have also tried to investigate determinants of e-service operations. The paper addressed specific issues by isolating the essential determinants from the available literature, and assessed them individually to obtain better insight and understanding. The identified determinants could help service providing organizations to design and develop concrete foundations for successful e-service operations. Antony (2003), identified 20 determinants of e-service operation.

Al-Jaghoub, Al-Yaseen, and Al-Hourani, (2010), were conducted a study on evaluation of awareness and acceptability of using e-government services in developing countries by taking Jordan as a case country.

The paper presented the results of a pilot study that aims to assess factors which could influence the awareness and use of e-government services in Jordan. It investigated issues such as: accessibility of e-government, citizen's attitude toward various privacy and security issues, the required services and costs. The data was collected using quantitative and qualitative methods

including a survey and interviews with e-government officials. The study concluded that awareness of e-government did not reach the required level.

2.1.2. Similar Studies in Ethiopia

So far, different studies have been conducted in Ethiopia. To mention some relevant studies: Kiflie (2016), conducted a study on the role of e-government in enhancing performance of public service qualities by taking Document Authentication and Registration Agency as a case institution. The study explored that successful e-government implementation has very positive effect on improving public service quality. Again the findings have tried to investigate the bottlenecks for successful implementations of e-government. According to Kiflie (2016), poor leadership commitment and knowledge gap, poor IT skills and Customers awareness gap, public sectors prefer to stay with traditional service delivery mechanisms, poor website, design, features and contents were taken as challenges.

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The results have revealed that e-government program has faced and still facing various challenges like lack of public awareness, limited participation of beneficiaries in design and implementation, limited electronic service development culture in Ethiopia, lack of organizational capability, weak program governance and poor strategic e-readiness.

2.2. Conceptual and theoretical literatures

2.2.1. Public service delivery

As MCB (2001:1) cited by Gossa (2015), public service refers to those activities of government institutions aimed at fulfilling the needs and ensuring the well-being of the society as well as enforcing laws, regulations and directives of government. Public serviced delivery is the process of delivering service from the government to citizens.

A government through its institution may deliver different types of service. According to MoCIT (2011), there are two types of public services as indicated below:

Informational Services: includes those services that solely provide information to customers and do not involve processing of any transactions or documents. For example, providing procedural information for requesting a service/facility and status update of applications for availing services. Informational services have relatively simple back-office operations and can be easily electronically enabled.

Transactional Services: includes those services where customers require specific actions to be taken by the department. For example, issue of a driving license is a transactional service. Transactional services mandate a higher degree of customer interaction and more complex delivery operations than informational services.

Both informational and transactional public services could be delivered electronically to those who requests service from the organization.

2.2.2. Transformation of public service delivery

It is obvious that, we are living in a very dynamic world. As a result, what is better for today may not be better for tomorrow. This is because the demand for new thing and innovation to satisfy those demands is rising day to day. The same thing happened in the service sector.

In recent years, the growth of the Information and Communication Technology (ICT) has had a substantial impact on the way local, state and national governments function (Gupta et al. 2008).

According to Terezia Kvasnicovaa, Iveta Kremenovaa, and Juraj Fabusa (2016), Information communication development changed social human behavior, the nature of work activities and speed up the process and the life of society.

As Borras (2004), and Gupta et al. (2008), cited by Al-Jaghoub et al. (2010),

Many governments in developed and developing countries are now developing, implementing and improving their strategies to transform government services by using information and communication technologies (ICTs). This transformation of services is referred to as e-government, digital government, online government, or transformational government.

Recent advances in technology have created a surge in "technology-based self-service". Such developments are changing the way that service firms and consumers interact (Rowley, 2006). E-government and Internet has made an essential change in the whole society structure, values, culture and the ways of conducting business by utilizing the potential of ICT as a tool in the daily work (Alshehri and Drew, 2010).

According to Dale and Khuong (2016), Information and Communications Technology (ICT) have brought about revolutionary changes in the way people work, communicate, learn, spend time, and interact. ICT has also profoundly transformed business and government practices.

In general, it can be understood that because of the introduction of ICT and other new technological innovations, the system or methods of public service delivery has changed from time to time. The change is from the old traditional, manual and backward to the new, modern and electronic mediated public service delivery.

2.2.3. E-government versus e-service

Technological terms are so interrelated and difficult to isolate. As a result, many of the articles and journals use the term e-government and e-service interchangeably. For example, Darrell (2004), stats that e-government refers to the delivery of government information and services online through the Internet or other digital means. This definition is similar with the definition of e-service in other literatures.

But there are literatures which indicated both concepts are different in scope. According to UNESCO (2005), e-government is the use of Information and Communication Technologies to promote more efficient and effective government, and make it more accessible and accountable to

the citizens. In the same document, it is noted that the characteristics of e-government include; electronic service delivery, electronic workflow, electronic voting and electronic productivity. Here we can understand that e-service is seen as one characteristics or dimension of e-government. Here, it can be understood that e-government is relatively broad in scope and it incorporated e-service as a subset.

In this study there are issues and concepts that can be applicable for both e-government and e-service. So, don't be confused if terms are used interchangeably. It is because even though they are different in scope, they share many attributes as both concepts are highly dependent on ICT.

2.2.4. Electronic service (e-service)

There is still no standard definition about what exactly e-service is. Scholars in the field of e-service tend to use the term without explaining exactly what they mean by it. This lack of clarity creates confusion and comparability issues, and makes it difficult for researchers to build on each other's work (Hassan et al. 2011). In the next part, some of the definitions of e-service given by different writers are presented.

As Saanen et al. (1999), cited by Buckley (2003), at its simplest, e-service can be defined as the electronic provision of a service to customers. Moreover, Zaidi and Qteishat (2012), also defined electronic services as those services that are provided via the Internet. Electronic service, short as e-service, is a general term that refers to services over the information communication technologies (ICT). Another scholar defined e-service as a service provided by means of information and communication devices (Terezia K., 2016).

Gossa (2015), also defined e-service as the delivery of information, products, service, or payments with the help of telephone, computer or other automated media. It includes many kinds of business activities, and all commercial transactions conducted by the internet, telephone and fax and all forms of trade in digitized goods and services.

Generally, as we can understand from the above interrelated definitions given by different writers, e-service is the provision of different services by using ICT and other electronic media as a means of delivery.

So, in this study electronic public service delivery means the provision of any kinds of service by the organization to the customer by using ICT and other electronic media as a means of delivery.

2.2.5. Advantages of electronic public service delivery

Implementing e-service to deliver different public services could have a comparative advantage on other non-electronic service delivery mechanisms.

As De Ruyter et al. (2001), and Boyer et al. (2002), cited by Alessandro (2005),

The potential benefits of e-service include ease of access to information, direct access and contact with specific representatives, greater accessibility to services, and cost savings and efficiencies in services provision.

In the earlier section, it is stated that e-service shares some attributes with e-government. So, here are benefits or advantages of e-government are presented and they probably work for e-service.

The adoption and use of the e-government strategy can provide significant benefits for government in the delivery of more effective and efficient information and services to all e-government sectors (Alsheri and Drew, 2010). OECD (2006), thoroughly examined e-government initiatives in its members' countries and listed the advantages of e-government as: improving efficiency in processing large quantities of data; improving services through better understanding of users' requirements, thus aiming for seamless online services; helping achieve specific policy outcomes by enabling stakeholders to share information and ideas; assisting government economic policy objectives by promoting productivity gains inherent in ICT and e-commerce; contributing to governments' reform by improving transparency, facilitating information sharing and highlighting internal inconsistencies; and helping build trust between governments and their citizens, an essential factor in good governance by using internet-based strategies to involve citizens in the policy process, illustrating government transparency and accountability.

E-government has potential for stronger institutional capacity building, for better service delivery to citizens and business, for reducing corruption by increasing transparency and social control (United Nations Division for Public Economics and Public Administration, 2001).

Deloitte Research study (2003), states that the strategic application of IT mainly e-government has the potential to radically reduce the amount of time, money and effort that businesses and citizens must spend to comply with rules and regulations. It might do so in many ways: providing information in one easy-to-access location; simplifying delivery of services to citizens; improved interactions among government units and with business, industry and citizens; improved

productivity (and efficiency) of government agencies; simplifying and streamlining reporting requirements; reducing the number of forms; making it possible for citizens, businesses, other levels of government and government employees to easily find information and get service from the government and government agencies; making transactions (paying fees, obtaining permits) easier; and more effective, cheaper and more convenient delivery of information, knowledge and services. Seifert & Bonham (2003), point out that implementation of e-government not only saves resources, but it can also significantly increase service levels by reducing time spent in bureaucracy. The desire to provide new and improved services has a tendency to concentrate more on improving the citizen's experience interacting with the government when seeking out information or trying to obtain various services. The evolution of e-government and technology creates the potential for new services to emerge, which contributes to improved service quality (Alsheri and Drew, 2010).

Based on the discussion above, it can be concluded that organizations will get a lot of benefits if they implement e-service successfully and deliver public services electronically to their customers.

2.2.6. Major e-service interactions

With the help of e-service, different bodies or stakeholders can interact in an easy way. Most of the existing literature refers to four types of e-service interactions in public organizations. These are

- ✓ Government to government (G2G);
- ✓ Government to citizen (G2C);
- ✓ Government to business (G2B); and
- ✓ Government to employee (G2E).

Governmental organizations interact with its citizens and with the business community. These interactions can include information-based interactive exchanges, negotiation, promotion flows, title exchanges, and service flows (Hassan et al. 2011).

This study basically focused on investigating barriers to electronic public service delivery that affect the service interaction between 'government to citizen (G2C) and 'government to business (G2B)'.

2.2.7. Quality of electronic public service delivery

With the advent and massive dissemination of the Internet, the provision of electronic public services is increasing all over the world. Li and Suomi (2009), declare that, faced with the quick growth of the internet and the globalization of markets, companies accepted and adopted new information technologies and new communication channels in order to provide electronic services to their clients.

If the organization provides quality electronic public services it can improve organizational performance and client satisfaction (Alanezi et al. 2012). So, here it can be understood that providing services electronically is not enough to the organization, but the issues of electronic service quality needs high attention.

2.2.7.1. Dimensions of the electronic services quality

When an organization provides electronic service to its customers, the issue of quality electronic service could be assessed based on the following electronic service quality dimensions. It can also serve as a check list to evaluate the electronic service quality of a given organization.

According to Filipe Sa et al. (2015), dimensions of the electronic service quality are;

I. Usability- Refers to the ease and simplicity that a user experiences when using a Website.

II. Innovation- Refers to the creativity and singularity offered by a Website to its users.

III. Performance- Refers to Website access speed. In this dimensions we do not include the processing speed of an application submission.

IV. Website design- Refers to the aesthetic aspect of a Website, such as the use of colors and appealing multimedia features.

V. On-line services Advantages- The advantage of using on-line services instead of other channels. Refers to the effectiveness and timeliness of a service that is capable of saving time and effort to consumers, when they chose the on-line solution.

VI. Service availability-The service must be available on-line, 24 h a day, 7 days a week, running in good technical conditions.

VII. On-line integrity-The evidence that the user can carry out all or most of the tasks, completely on-line.

VIII. Processing speed-The speed/time that a citizen takes to acquire an on-line product or service, including its reception.

IX. Emotional appeal- Refers to the intensity of the interaction between a user and the Website, as well as the pleasure experienced during this use.

X. Customer support- Refers to the ability to help and understand, on an individual and customized level, every client, promptly and being always available (24/7), and to promote an effective and positive communication.

XI. Complaints- Effective resolution and treatment when a problem or complaint arises. The service provider must also provide for a correct and effective return policy, preferably adopting and promoting, the same acquisition service channel, that is, the on-line solution.

XII. Alternative channels-The existence of alternative communication channels and means.

XIII. Privacy-The safety of user data stored by the service provider.

XIV. Safety-Safety aspects involving the transactions and communications between the service provider and the user.

XV. Reliability-The product or service is delivered precisely as offered and described by the service provider.

XVI. Deadline compliance-The product is delivered within the deadline and the time advertised and established in the Website.

XVII. Information quality-The information described in the Website pertaining to a service or product must be accurate, precise, updated and appropriate, so that users can find the information that effectively corresponds to the reality of what they intend to purchase.

XVIII. Task information-The Website must offer a correct and effective level of information concerning every procedure and task, so the citizens can find what they need in a simple way, thus improving their satisfaction level.

So, electronic public service delivery will be successful if the above issues are incorporated and given high emphasis.

2.3. Public service and the internet

Public sector organizations can potentially provide vast quantities of information, and guide consumers towards other sources of information through the medium of the Internet. They could also migrate consumers out of long queues into Web-based interactions, and reduce strain on physical and human resources (Buckley, 2003).

2.3.1. What is e-service in the public sector?

In governmental agencies, e-service refers to the delivery of information and improved services online through the internet or other digital means to all stakeholders (citizens, businesses, and other members of the society) (Hassan et al. 2010). According to Filipe Sá, Álvaro and Manuel (2016), an e-service in the government context consists in the provision of transactions by the online channel. In the public sector, organizations and agencies are rapidly setting up e-service systems to provide services to citizens (Hassan et al. 2010).

E-public service is the delivery of public services to citizens, business partners and suppliers, and those working in the government sector by electronic media including information, communication, and interaction and contracting, and transaction (Buckley, 2003).

E-service in the public sector or electronic public service delivery refers to the provision of different public service from government organization to its customers.

2.3.2. E-service in developing countries

While there is increasing adoption of e-services by governments, the level of implementation differs from country-to-country. However, the pace with which e-services are made available and adopted is lower than planned in the least developing countries. Governments tend to be slow in releasing new services and citizens often prefer to conduct transactions with the government through paper forms and physical presence rather than using online methods. The differences indicate that e-government in less developing countries face slower progress or even stagnation because they encounter multiple and complex challenges (Hassan et al. 2010).

Although some challenges are faced the developed countries as well, the ability of these countries to recover and overcome the challenges are far ahead of the developing countries abilities. The reason is the difference in internet technological infrastructures, practices, usage, the sufficient capital to build up expensive national information infrastructure and sufficient knowledge (Hassan et al. 2010).

Identifying and overcoming these challenges for developing countries is not always easy; given that the most currently published e-service strategies are based on experiences from developed countries, which may not be directly applicable to developing countries.

2.4. Barriers to electronic public service delivery

Electronic public service delivery may not be effective and work with full potential as intended. It is because there are number of factors that affect the development, acceptance, and use of electronic services. As Costas. et al. (2005), these barriers may stem from different areas, including:

I. *Legislative barriers,* related to the existence of appropriate laws, regulations, and directives that allow or facilitate the deployment of electronic services.

II. *Administrative barriers,* related to lack of appropriate business models, justification of costs, availability and allocation of skilled personnel, and the need for structural reforms.

III. *Technological barriers*, associated with the availability of suitable tools, standards, and infrastructure to develop, deploy, and use electronic services.

IV. *User-culture barriers*, which are set by the user groups' culture or profile. User groups can be viewed from different angles and with different granularities: users internal to Public Authorities (PA), external users, local community users, inter-national users, etc.

V. *Social barriers*, i.e., impediments related to stakeholders' social status, such as fear of job loss or status degradation; established power structures, and contact net-works may also view these developments as a threat.

According to Ebbers and Van Dijk (2007), resistance can be a barrier for e-service. They have defined resistance as the factor that hinders or stops the e-services from inside the government. It is the extent to which new e-government services, from the stage of official plans through the stage of implementation, are obstructed, delayed, or prevented from making progress by empirically verifiable decisions and actions of actors within governments. The employees may resist the shift of power resulting from the introduction of e-service.

Employees possessing a certain amount of tacit domain knowledge are considered to have more power within the organization. Introduction of e-services converts tacit knowledge to explicit, depriving these employees of their source of power. Further, this initiation will generally require structural reforms in the organization, modification of job descriptions, and change in duties. Employees may be opposed to such changes especially those involved in paper-based service delivery channels, as they perceive the introduction of e-services as a threat jeopardizing their jobs. Studies information systems describe how the resistance of users to a new system because of trust or other factors regularly hinders its implementation (Aladwani, 2001).

According to Alsheri and Drew (2010), there are several challenges that can delay progress towards realizing the promise of e-government. The variety and complexity of e-government initiatives implies the existence of a wide range of challenges and barriers to its implementation and management. This section, will briefly introduce the most important and common challenges and barriers as follows.

ICT Infrastructure- The implementation of e-government initiatives faces some technological difficulties such as lack of shared standards and compatible infrastructure among departments and agencies. ICT infrastructure is recognized to be one of the main challenges for e-government (Alsheri and Drew, 2010).

Privacy- Privacy refers to the guarantee of an appropriate level of protection regarding information attributed to an individual.

Security- Security of an information system means protection of information and systems against accidental or intentional disclosure to unauthorized access, or unauthorized modifications or destruction (Layton, 2007). It refers to protection of the information architecture including network, hardware and software assets and the control of access to the information itself (Basu, 2004).

Policy and Regulation Issues- Feng (2003), points out that e-government are not a technical issue, but rather an organizational issue. Implementation of e-government principles and functions requires a range of new rules, policies, laws and governmental changes to address electronic activities including electronic archiving, electronic signatures, and transmission of information, data protection, computer crime, intellectual property rights and copyright issues. Dealing with e-government means signing a contract or a digital agreement, which has to be protected and recognized by a formalized law, which protect and secure these kinds of activities or processes. In many countries, e-business and e-government laws are not yet available.

Lack of Qualified Personnel and Training- Another major challenge of an e-government initiative can be the lack of ICT skills. This is a particular problem in developing countries, where the constant lack of qualified staff and inadequate human resources training has been a problem for years (UNPA&ASPA, 2001). The availability of appropriate skills is essential for successful e-government implementation. E-government requires human capacities: technological, commercial and management. Technical skills for implementation, maintenance, designing and

installation of ICT infrastructure, as well as skills for using and managing online processes, functions and customers, are compulsory.

Lack of Partnership and Collaboration- Collaboration and cooperation at local, regional and national levels, as well as between public and private organizations, are important elements in the e-government development process. However, collaboration and cooperation are not easy factor to achieve. Governments often exhibit considerable resistance to open and transparent systems as they try to preserve their authority, power and hierarchical status (Nodu, 2004).

Citizens distrust their governments, especially where there has been a history of dictatorship, political instability or large-scale corruption. To ensure that the public and stakeholders will be partners in the e-government effort, it is important to try to build trust in government (Carvin, 2004). Collaboration between the private and public sectors is needed too, in order to provide resources, skills and capabilities that the government may lack.

Digital Divide- The ability to use computers and the Internet has become a crucial success factor in e-government implementation, and the lack of such skills may lead to marginalization or even social exclusion (UNPA &ASPA, 2001). The digital divide refers to the gap in opportunity between those who have access to the Internet and those who do not. Those who do not have access to the Internet will be unable to benefit from online services (OECD, 2003). In the case of the digital divide, not all citizens currently have equal access to computers and Internet, whether due to a lack of financial resources, necessary skills, or other reasons. In fact, computer literacy is required for people to be able to take advantage of e-government applications.

Culture- Some barriers to the implementation of e-government are not technical, but the cultural implications of new technologies. Personal characteristics and subjective conditions are more likely to be influenced by cultural factors than are the objective conditions surrounding the development and diffusion of new technology (DeLisi, 1990). Cultural norms and individual behavior patterns play a role in how citizens and policy makers use technology.

Leaders and Management Support- The literature shows that without support from the top management, an innovation is less likely to be adopted. Thus, e-government implementation needs the support from the highest level of government for successful implementation (Alsheri and Drew, 2010). Top management support refers to the commitment from top management to provide a positive environment that encourages participation in e-government applications.

From the above discussion under 'barriers to electronic public service delivery', several challenges are identified as barriers to electronic public service delivery. Either it is directly reflected as barriers to electronic public service delivery or indirectly as barriers of e-government implementation, list of possible challenges/barriers for electronic public service delivery can be summarized as follows.

Table 2.2 Summary of barriers by different scholars

Legal/Legislative barriers	Laws
	Regulations
	Directives
	Policy issues
Administrative/organizational	Leaders and management support
	Weakness in reform implementation
	Lack of partnership and collaboration
Technological/technical barriers	ICT infrastructure
	Suitable tool and Standards
	Privacy and security
Social	User's culture
	Resistance to change to electronic ways
	Fear of job loss
Financial	High Cost of using e-service

So, a successful strategy for promoting electronic public service delivery must thus include solutions to overcome these challenges.

2.5. ICT and public service delivery in Ethiopia

2.5.1. Public service delivery in the Ethiopian public organization

At present, the quality of public services in Ethiopia is extremely poor. This is characterized by cumbersome procedures, long delays in service delivery to clients, and consequently high costs to citizens, discourteous behavior of civil servants to citizens, a demand for compliance by citizens with the bureaucracy's archaic methods of doing things with a *take it or leave it* attitude, etc. (MoCIT, 2011).

The quality of civil service is exceedingly low because its methods of work are over-bureaucratized, and its decision-making processes and procedures over-centralized. Processes that could be completed in one-stop or location are fragmented amongst different sections in the same organization or between different organizations in different locations. The process of decision-making in the established bureaucracy is strictly hierarchical with senior officials, for the most part, unwilling to delegate authority and junior-level officials reluctant to make decisions for fear of being *punished* for real or imagined mistakes (MoCIT, 2011).

Even though the above information is old to mention at this time, it also represented the current situation. If anyone moves to any public service providing institutions requesting their services, he/she can confirm that the above situation still exists.

2.5.2. E-government initiatives in Ethiopia

Given the current growth and transformation plan and MDG of Ethiopia, the impact of ICT in transforming the nation is unequivocal. In recent years the government of Ethiopia (GoE) has been taking encouraging steps in expanding the use of ICT as enabling tool for the various economic, social and political initiatives the country is witnessing. Among other things, the GoE has formulated a robust ICT policy and created an enabling environment for ICT utilization. The due attention given for the ICT sector by the Ministry of Communication and Information Technology (MCIT) is a clear indicator that ICT is believed to be a critical contributor of economic and social transformation of the country (Lakew et al. 2014).

Ethiopia's Information and Communication Technology (ICT) policy is an integral part of the country's larger development goals and objectives. While the goal is to rapidly transform the

country's subsistence agricultural-based economy and society into a predominantly knowledge- and information-based economy and society, the focus of the policy will be on the country's ICT development process. To achieve this objective, the Government of Ethiopia has developed multiple policies, most notable of which are the National ICT Strategic Plan and the ICT4D Action Plan for the year 2006-2010. The Ethiopian Information and Communication Technology Development Agency (MINISTRY OF COMMUNICATIONS & IT) has a mission to develop, deploy and use ICT to improve the livelihood of Ethiopians and optimize its contribution to the development of the country. The Agency has thus undertaken a number of e-Government assignments to avail government services online and improve the access to the general public (MoCIT, 2011).

According to ICT4D (2006), the broad objectives of Ethiopia's e-government initiative were.

- Improve administrative efficiency, effectiveness and productivity as well as information provision and service delivery to the public at the federal and regional levels of government.
- Reduce administrative, operational and transactional costs of federal and regional governments' administrative activities, service delivery functions and operations by reducing operational inefficiencies, redundant spending and unnecessary excessive paperwork.
- Increase the ability of the federal and regional governments to serve citizens and businesses better by enhancing and improving responsiveness to citizens and businesses.
- Transform government into a *citizen-centered* government to facilitate the process of bringing government closer to the people and making it easy for citizens to obtain services and interact better with government machinery and agencies at the federal and regional level.
- Develop information and communications infrastructure to support intra- and inter-agency electronic service delivery and information exchange at federal and regional levels.
- Provide access to information and government services by the public and enhance good governance and strengthen the democratic process.

With the existence of such efforts, the overall ICT sector in general and electronic public service delivery in particular is still at infant stage.

2.5.3. Facts and figures

International organizations like UN frequently publish ICT related information of countries by taking different indicators and criteria of measurement. Here below, ICT related indexes of Ethiopia has presented.

Network readiness index (NRI):

According to the Global Information Technology report (2016), Ethiopia has ranked 120th in network readiness index, out of 139 countries.

ICT Development Index (IDI):

It is an index published by the United Nations International Telecommunication Union based on internationally agreed information and communication technologies (ICT) indicators. This makes it a valuable tool for benchmarking the most important indicators for measuring the information society.

According to ICT development indexes - 2008 ranking, International Telecommunication Union (ITU) places Ethiopia 154th out of 159 countries in Global IT Development Index (MoCIT, 2011).

UN e-Readiness Index:

Ethiopia has consistently been ranked around 170 marks on the UN e-Readiness Index in the past few years as shown in the table below.

Table 2.3 UN e-readiness index

Year	Ranking
2005	171
2008	172
2010	172

Source: MoCIT, 2011

Internet users:

According to the Internet World Stats (2017), from the total population of 104,344,901, internet users as of December 31, 2016 are 4,500,000. It means around 4.3% of the total population.

From the above factual information, it can be understood that ICT and e-service in Ethiopia is in infant stage.

2.6. Alternative methods of e-service delivery

Based on the technological choices available today, readiness levels of participating organizations, customer preferences and an overwhelming preference of key decision makers for integrated service delivery, the following channels present themselves as viable alternatives for delivering government services alongside traditional government offices (MoCIT, 2011).

E-Government Portal*:* where customers can use internet to request and avail services, search information, make payments, etc.

Phone (Call Center): where customers can call up to request services and information and access the same through call center agents and Interactive Voice Response 'technologies.

Mobile Gateway; where customers can request services and information through mobile phones and hand-held digital personal assistants. The departments can send customers regular alerts through SMS.

Common Service Centers (CSC): where services like Information dissemination, acceptance of service requests and delivery of services is provided to the customers at a single point of service delivery. CSC includes self-service kiosks, utility bill payment centers, ICT community centers etc.

2.7. Background of ERCA

In the following section, different issues of the case institution like organizational background, reasons of establishment, objectives, mission, vision, values, power and duties, organizational structure and manpower of Ethiopian revenues and customs authority are briefly discussed

The Ethiopian Revenues and Customs Authority (ERCA) is the body responsible for collecting revenue from Customs duties and Domestic taxes. In addition to raising revenue, it is responsible to protect the society from adverse effects of smuggling and contraband. It seizes and takes legal

action on the people and vehicles involved in the act of smuggling, any tax evasion and avoidance while it facilitates the legitimate movement of goods and people across the border.

2.7.1. Establishment of ERCA

The Ethiopian Revenues and Customs Authority (ERCA) was established by the proclamation No .587/2008 on 14 July 2008, by the merger of the Ministry of Revenue, Ethiopian Customs Authority and the Federal Inland Revenue Authority for the purpose of enhancing the mobilization of government revenues, while providing effective tax and Customs administration and sustainability in revenue collection. The main objective of the establishment of ERCA was to streamline the public revenue generation function by bringing the relevant agencies under the umbrella of the central revenue collector body.

This structuring aimed at improving service delivering, facilitating trade, enforcing the tax and customs laws and thereby enhancing mobilization of government revenue in sustainable manner. A study called "Business Process Re-engineering" had taken place before the merger of the foregoing administrations. The study was undertaken for a year and half beginning from November 2007 by teams of officials selected from within the administration.

The study has looked into the selected key business processes and has come across inefficient organizational structure and unnecessary complicated procedures that permitted insufficient service delivery. The study has also indicated that there was corruption within the administrations and that smuggling and tax evasion were serious problems. These problems have depressed the attempt of the foregoing administrations to be successful in achieving their objectives.

Documents for the import and export goods were processed through the former tax and customs administration and due to the inefficient procedures, these goods were subject to delay at exit or entry points of the former customs Authority. Owing to it, importers or exporters viewed the former customs procedure with disfavor or looks as an impediment for international trade. The former tax and customs administration also has long been criticized for lack of efficient and effective system to control tax evasion.

The administration had inefficient system to control taxpayers who fail to declare their actual income in order to reduce their tax bill and the federal government's revenue. The former administration was also far behind in protecting investors from adverse effects of contraband and illegal practices. In its proposal, the team has suggested merger of the foregoing three

administrations. The study team believed that it would be better if the three administrations merged, forming a single powerful organization to increase modern and equitable tax and customs administration system, effective resource utilization and quick service delivery. Presently, the Authority is exercising the powers and duties that were granted to the Ministry of Revenue, the Federal Inland Revenue Authority and the Customs Authority by existing laws.

2.7.2. Objectives of ERCA

The ERCA has the following objectives:

- ✓ Establish modern revenue assessment and collection system; and render fair, efficient and quality service;
- ✓ Assess, collect and account for all revenues in accordance with tax and customs laws set out in legislation;
- ✓ Equitably enforce the tax and customs laws by preventing and controlling contraband as well as tax fraud and evasion;
- ✓ Collect timely and effectively all the federal and Addis Ababa tax revenues generated by economy, and
- ✓ Provide the necessary support to the regional states with the objective of harmonizing federal and regional tax administration systems.

2.7.3. Vision, Mission and Values of ERCA

Vision

ERCA's vision is being a leading, fair and modern Tax and Customs Administration in Africa by 2025 that will finance Government expenditure through domestic tax revenue collection.

Mission

ERCA's mission is to contribute to economic development and social welfare by developing a modern Tax and Customs Administration that employs professional and highly skilled staff who promote voluntary compliance amongst individuals and businesses, and take swift action against those who do not comply.

Values

ERCA understands its customers and their needs, treat them with trust and respect and help them meet their obligations. It acts with integrity, transparency, accountability and professionalism to enforce customs and tax related laws. It works closely with stake holders and ensures the participation of women.

2.7.4. Power and Duties of ERCA

The ERCA shall have the powers and duties to:

- ✓ Establish and implement modern revenue assessment and collection system; provide, based on rules of transparency and accountability, efficient, equitable and quality service within the sector;
- ✓ Properly enforce incentives of tax exemptions given to investors and ensure that such incentives are used for the intended purposes;
- ✓ Implement awareness creation programs to promote a culture of voluntary compliance of taxpayers in the discharge of their tax obligations;
- ✓ Carry out valuation of goods for the purpose of tax assessment and determine and collect the taxes;
- ✓ Conduct study and research activities with greater emphasis to improve the enforcement of customs and tax laws, regulations and directives and the collection of other revenues; and based on the result of the study and research initiate laws and policies and implement the same up on approval;
- ✓ Collect and analyze information necessary for the control of import and export goods and the assessment and determination of taxes; compile statistical data on criminal offences relating to the sector, and disseminate the information to others as may be necessary;
- ✓ Investigate customs and tax offences, institute and follow up criminal proceedings in courts; for the discharge of such responsibilities, organize its own prosecution and investigation units and supervise their performance;
- ✓ Inspect and seize documents under the possession of any person that are required for the enforcement of customs and tax laws; organize and operate modern laboratory inspection of goods and documents;

- ✓ Decide the place where import and export goods are to be deposited; establish warehouses, issue warehouse licenses; supervise duty-free shops; control the handling and care of deposited goods; suspend or revoke warehouse licenses; collect license and service charges;
- ✓ Oversee and supervise the activities of the National Lottery Administration;
- ✓ Provide appropriate capacity building support to regional revenue collecting agencies with a view to harmonizing federal and regional tax administration systems;
- ✓ Enter into contracts and international agreements regarding tax and customs administration;
- ✓ Exercise the powers and duties that were granted to the Federal Inland Revenue Authority and the Customs Authority by other existing laws;
- ✓ Own property, sue and be sued in its own name; perform such other related activities as required for the attainment of its objectives.

2.7.5. Organizational structure and manpower

ERCA is organized as an authority led by a Director General (with the rank of minister) with direct accountability to the Prime Minister. The Director General assisted by five Deputy Director Generals, both the director general and deputies are assigned by the prime minister. There is an advisory board to the Director General for advice on policy issues. In order to achieve its goals, it has organized itself into divisions, directorates and work units at head office level based on business process. While, the office of the Director General serves as a secretariat for the authority and is managed by a Director, a management team/council comprising of professionals is also organized within the secretariat to provide the necessary advice to the Director General. Furthermore, five of the directorates at the head quarter also directly report to the office of the Director General.

At head office level, there are more than 40 directorate offices with their own power and responsibility. So, the organization's structure is made up of those directorate offices. In the next page, partial organizational structures which incorporated only offices that have direct relation to this study are presented.

2.7.5.1. ICT under ERCA's organizational structure

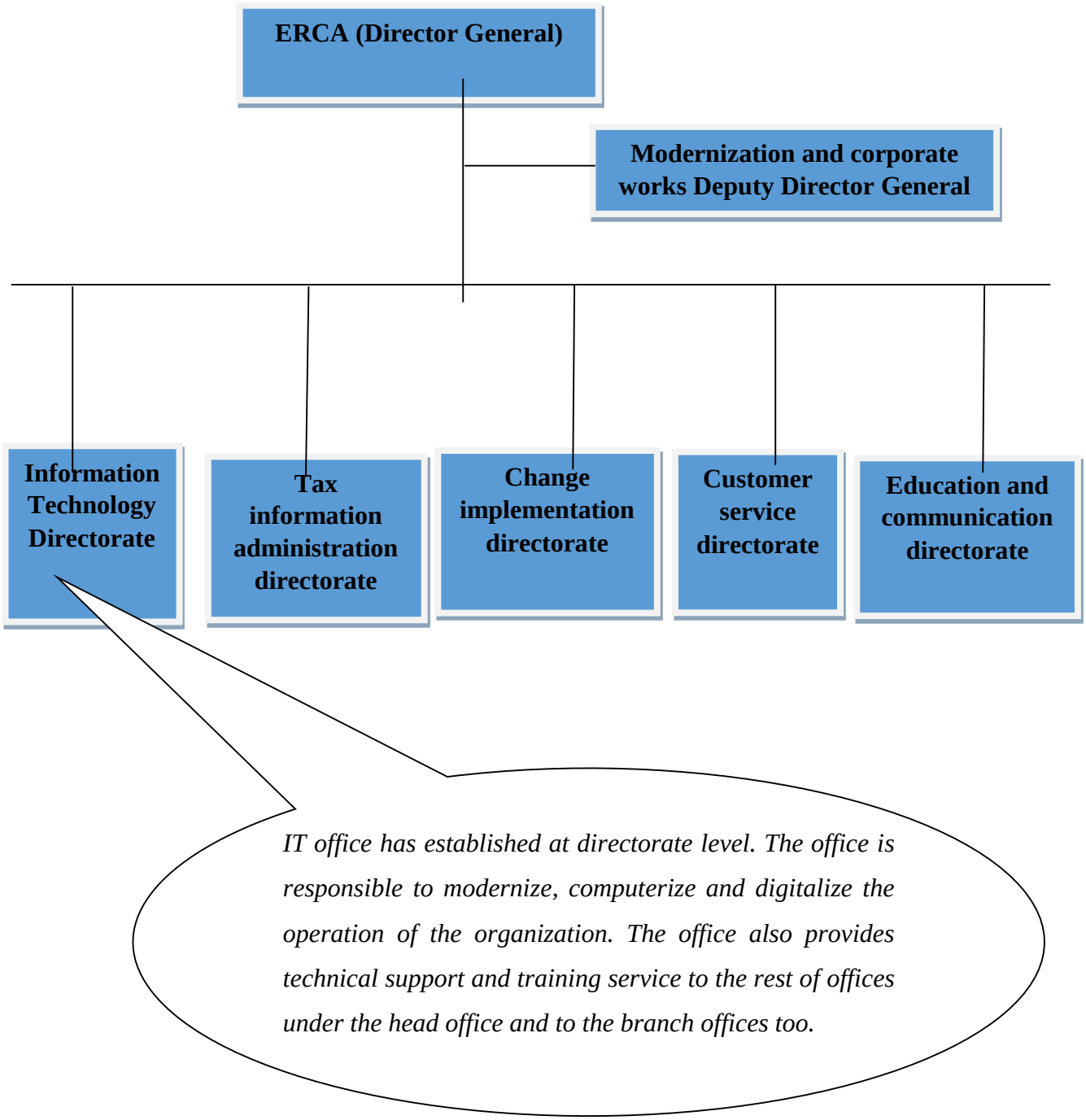

Figure 2.1. ICT under ERCA's organizational structure

2.8. The focus of the study and conceptual framework

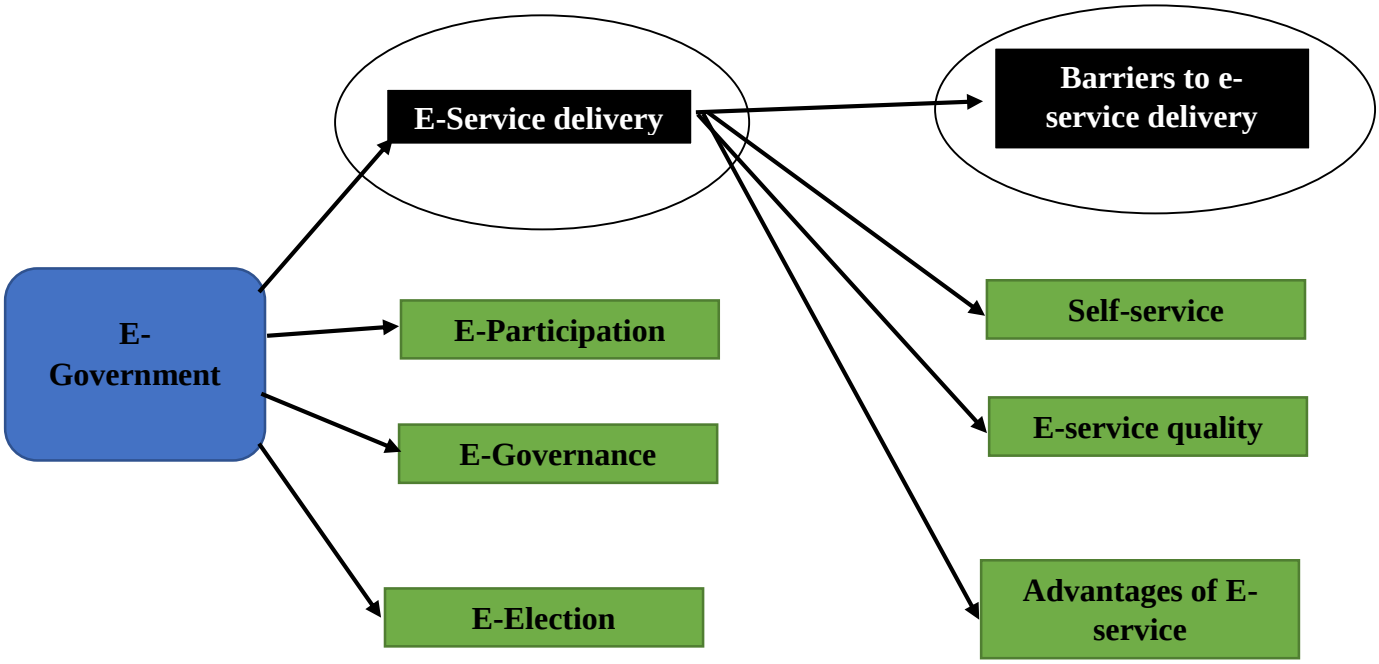

Figure 2.2 The focus of the study

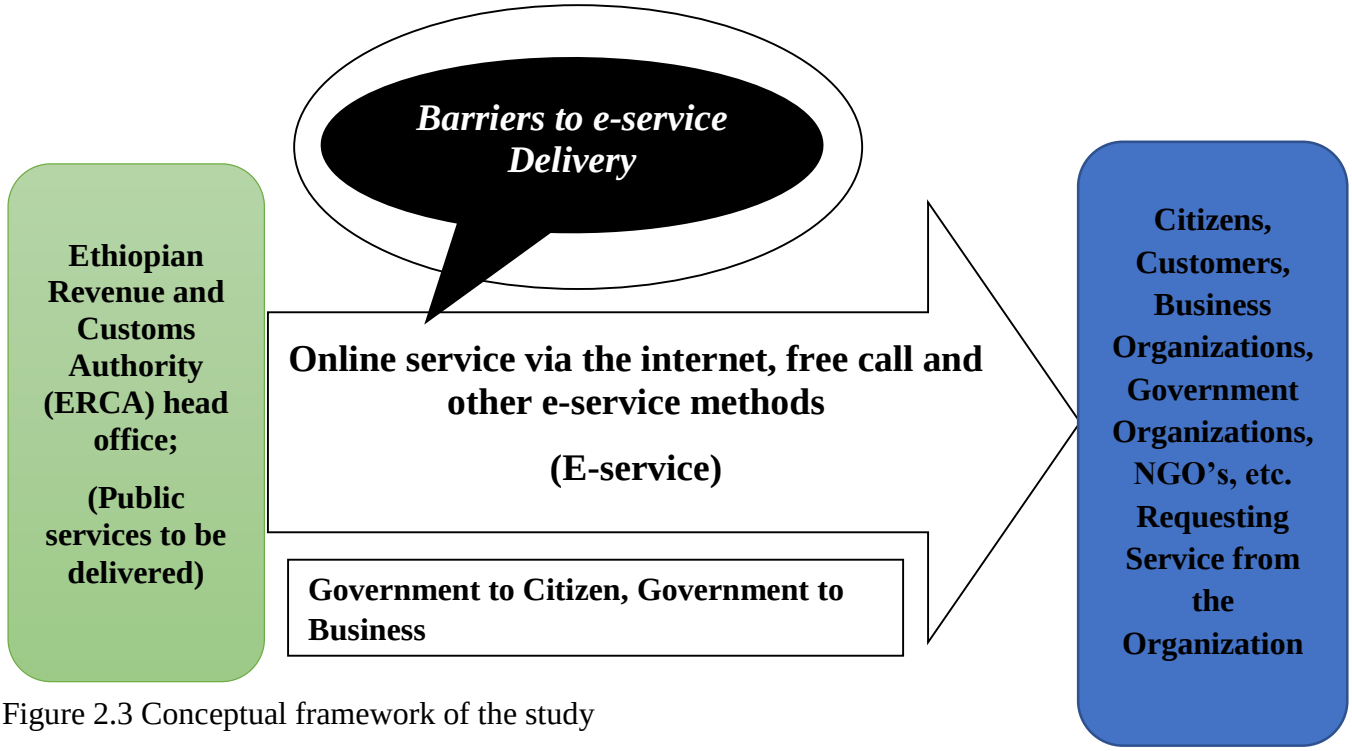

Figure 2.3 Conceptual framework of the study

CHAPTER THREE

Research Methodology

3. Introduction

This chapter attempts to present the research methodology and other technicalities that has been used to conduct this study.

3.1. The Research Approach

To achieve the objectives of this study, descriptive research design was employed. Descriptive research approach is mainly to find answer for the question which focused on "what is…?". So that, it is a suitable approach to this study as the study aimed at investigating barriers to electronic public service delivery (what are barriers to electronic public service delivery?).

3.2. Data sources

To complete this study, both primary and secondary sources of data have been used. Primary data were collected through observation, interview and questionnaire. The questionnaire was containing both open-ended and closed-ended self-administered questions. Closed ended questions were prepared in Linkert scale and a check list item type.

Secondary data were collected from publications, reports, magazines and other documents available within and outside the case organization. In the process of collecting secondary data; reliability, suitability and adequacy of the data have been considered.

3.3. Data collection techniques

The tools and the techniques used in the study for data collection were;

Questionnaire-was filled by service provider employees in the case organization.

Observation- A pre-determined observation chalkiest has been prepared by considering the objective of the study, and used to see and collect information about the overall situation of the case organization.

Interview- for the purpose of cross checking the data collected through questionnaire and observation, and to collect further data, there was a key informant interview with the directorate directors of Information Technology department, Modernization and corporate works and Change Implementation Management and an in-depth interview with directorate director of customer service department.

Diary method- to obtain data from beneficiaries/customers, their comments on the diary that they leave to the organization in 10 consecutive service days has been assessed.

Document review- used to collect secondary data from published and unpublished documents.

3.4. Sampling procedures

I. Target population- as the study was aimed at investigating barriers to electronic public service delivery, all government organizations which are engaged in electronic public service delivery were the target population of this study.

II. Sampling method- for the purpose of collecting valuable information to the study, from non-probability sampling method; purposive sampling was employed to select a case institution (ERCA). Also departments within ERCA, higher officials and ICT experts for further interview were selected with purposive sampling method. Probability sampling; specifically, simple random sampling was used to select a sample of employees for the questionnaires to be filled.

III. Sample size- To collect data from employees through questionnaire, 50% of service providing employees in each selected departments at head office were selected. The justification behind taking 50% sample was; the population is homogeneous, the nature of work they perform is similar and they are working in one organization with the same organizational environment. For the purpose of interview, 3 officials were selected as key informants and 1 higher official was selected for an in-depth interview.

Table 3.1 Sample summary for the questionnaire

No.	**Name of the department** **(Reasons to select- departments that have close contact with customers)**	**Total employees in each department**	**Number of sample employees selected in each department (50%)**
1	Customer Service Department	74	37
2	Tax Information Administration Department	101	51
3	Information Technology Department (IT)	58	29
4	Education and Communication Department	38	19
	Total	**271**	**136**

Table 3.2 Sample summary for the interview

Key informant interview	**Name of the department**	**Number of selected individuals for the interview**
	Information Technology Department (IT)	1
	Modernization and corporate works	1
	Change implementation management	1
	Total	**3**
An in-depth interview	Customer Service Department	1
	Total	**1**

3.5.Data analysis method

The collected data through different tools stated above were processed and analyzed by using tables, frequencies and percentage. In the process of presenting the collected data, SPSS version 20 software was employed. In addition, the qualitative data obtained through interview with officials and key informants, customer's comments and suggestion were presented and analyzed by using qualitative statements in support of the quantitative data.

3.6.Ethical consideration

In this study, the general agreements shared by all other researchers about what is proper and improper in conducting scientific inquiry is applicable. Specifically;

Protection from harm - this research never injures the people being studied, regardless of whether they volunteer for the study. No revealing of information that would embarrass them or endanger their home life, friendships, jobs, and so forth.

Informed consent **-** Research participants have been told about the nature of the study to be conducted and given the choice of either participating or not participating. Furthermore, they have been told that, if they agree to participate, they have the right to withdraw from the study at any time. Any participation in a study was strictly voluntary.

Right to privacy – the researcher keeps the nature and quality of participants and it is strictly confidential. No need to write the name of participants both in questionnaire and data presentation section.

Honesty with professional colleagues – the researchers report the findings in a complete and honest fashion, without misrepresenting what has been investigated with the study. The finding of the study will not be misleading to others. And no way to fabricate data to support a particular conclusion, no matter how seemingly "noble" that conclusion may be.

CHAPTER FOUR

Data Presentation, Interpretation and Analysis

4. Introduction

This chapter aims at presenting, interpreting and analyzing the data obtained from different tools of data collection. The data collected from respondents is presented with tables and charts and interpreted by the researcher in line with the objective of the study. Data analysis is also made by integrating the data obtained in all data collection tools employed in the study.

4.1. Factual information obtained from interview and observation

4.1.1. Electronic service delivery in ERCA

An interview was made with IT directorate director about the current situation of e-service in ERCA. The directorate replied as follows;

"*In Ethiopia, online service delivery and other ICT mediated service system is a recent phenomenon. In fact, when compared with other developed nations, e-service implementation in Ethiopia as a whole is at minimum stage. As expert of the area, e-service in ERCA is in a good move even if it has some limitations. New systems of service delivery have been employed by the organization and the best is yet to come. To achieve such objective, ERCA is giving better attention to internal ICT development by establishing IT office at directorate level"*.

4.1.2. Does the organization provide services to customers electronically (Does e-service exist)?

Yes of course, Ethiopian revenue and customs authority is providing different informational and transactional services to its customers electronically. For example, ERCA adopted electronic service delivery system that facilitates its work on tax collection-ASYCUDA and SIGTAS. ASYCUDA deals with the tax collection on imports and exports activities and SIGTAS deals with tax collection from all sources at home.

4.1.3. Legal framework facilitates to e-service

As customer service directorate director said, like any other federal organization, all national policies, rules and regulations will have an effect on the work of ERCA. As far as e-service is concerning, policies designed by Ministry of Information and Communication Technology, national ICT plans and other internationally designed frameworks will be used as a base for e-

service implementation in the organization. In addition to the above external policies and frameworks, ERCA by itself prepares its own ICT related plans and procedures for internal use. Moreover, there are lots of proclamations specifically designed for Ethiopian revenues and customs authority by Ethiopian house of people representatives.

4.1.4. The focus of the management

According to the information obtained from the official, now a day, unlike previous times, the organization's major focus is to deliver better service and satisfy the customers. To achieve this objective, the top management gives higher emphasis to utilize ICT and other technological innovations in the service sector for better service delivery. But it does not mean it is enough. More attention must be given to develop better e-service system.

4.1.5. Readiness and commitment of the organization

When the customer service directorate asked to express the current readiness and commitment of ERCA to provide better service electronically, the directorate replied as follows.

"The organization is more or less ready and committed to implement e-service and we are actually implementing it. But it does not mean that we are fully ready and committed. As e-service features, the nature of our service and the demand of our customers are increasing time to time, ERCA must update itself in order to compete with the changing environment".

4.1.6. Number of employees working directly to support e-service

To support the overall operation of e-service delivery and all other issues related with ICT, one office is established at directorate level. Currently, there are 58 employees including the director who are directly working to modernize, digitalize and use the benefit of ICT in the day to day activity of ERCA.

4.1.7. Investment on e-service and future plan

The information from the interview shows that, the investment of the organization in e-service is increasing from year to year. It is because the organization confirmed that e-service must be implemented for effective service delivery.

Regarding the future plan of the organization towards electronic public service delivery, the customer service directorate director said that;

"In the future the demand for our service will increase. On the other side the nature and level of our service will be changed. To satisfy the increasing demand of our customers and to improve

the general operation of ERCA, we have to make our service delivery system up-to-date and use technological innovations. In the future, we do have a plan to communicate with our customers in an easy way and deploy different electronic service delivery systems in addition to the existed one to deliver more services electronically".

4.1.8. E-service systems or methods of e-service delivery the organization is currently utilizing

Currently, Ethiopian revenues and customs authority is providing electronic services to the customer through the ERCA portal and phone (free call center).

4.1.8.1. The ERCA portal

Most electronic services, both transactional and informational, are delivered through the portal in which any customer can access to it at any time and any place. The portal is designed to create a close contact between the organization and its customer electronically.

This method of electronic public service delivery is currently utilizing by many federal organizations. When customers need a service from the organization they can browse on the internet by writing the exact electronic address of the company, i.e. for example, www.erca.gov.et is the electronic address for Ethiopian revenue and customs authority. Then after, the customer can search for any service available within the portal system.

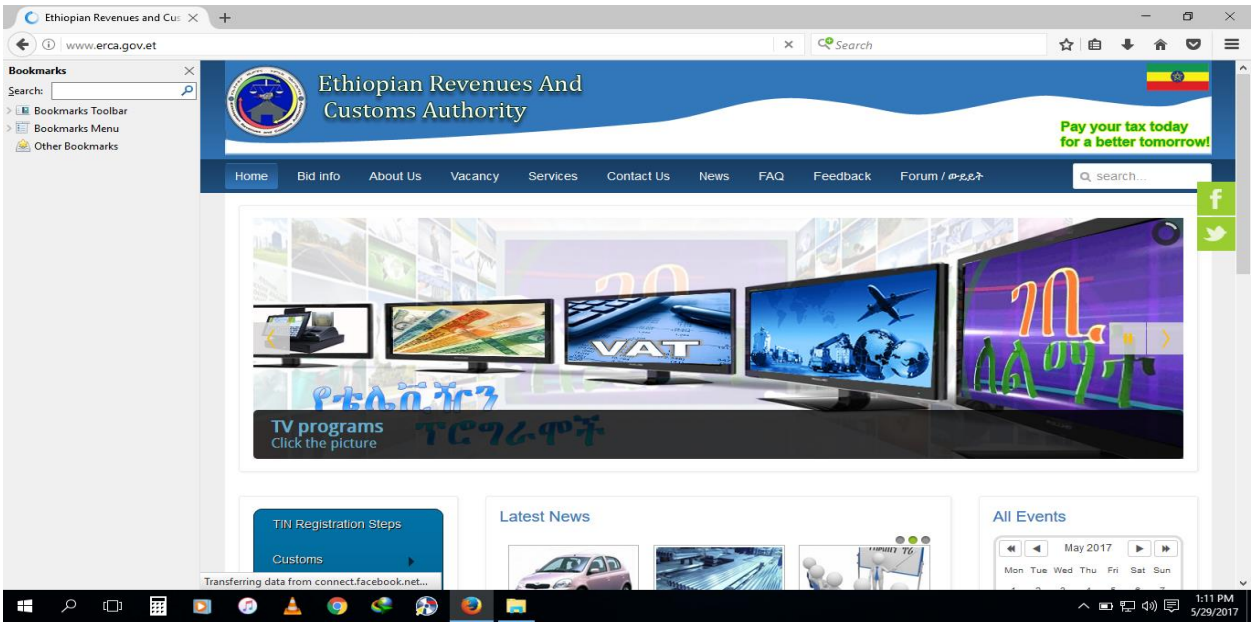

Figure 4.1 The ERCA portal

4.1.8.2. Call center

ERCA has also a call center with computerized system. A call center is an extensive open office for the purpose of giving a response promptly to various requests from stakeholders. The call center is one of the modern approaches to solve the problems of customers.

Currently, ERCA is providing informational service to customer with free call center, i.e. 8199. Any customer can call to the office and receive the required information with free.

4.1.9. List of services a customer can access electronically

ERCA has equipped itself with a computer system to administer almost all domestic taxes including: Value Add Tax (VAT), Turnover Tax, Withholding Tax and others. The computer system that enables ERCA to administer the taxes mentioned above is called Standard Integrated Government Tax Administration System (SIGTAS). The system allows ERCA to administer all aspects of most domestic taxes including: registration, assessment, cashing, and auditing in one easy-to-use integrated system. The system was introduced in ERCA in December1997 and is presently operational both at the head office and branch offices level.

Electronic Cargo Tracking system is the other modern system which ERCA is going to deploy soon. This system is consisted of (1) a road map which shows the route the cargo truck should take, (2) electronic seal, or a device which is to be mounted on the cargo and used to provide ERCA information about the cargo, and (3) Global Positioning System (GPS), a device which is to be mounted on the truck so that it can provide ERCA information about the status of the truck and cargo. Through this system, ERCA ensures the security of the cargo thereby preventing kisheba (cargo theft) and trafficking of smuggled goods. The cargo tracking device delivers real-time visibility of all the import-export cargo conveyed by sea and land so that ERCA can manage to control them with ease and facilitate legitimate trade.

In general, Ethiopian revenue and customs authority is currently providing the following list of transactional and informational services to its customer electronically. From many transactional services some are; vehicle verification system, purchase declaration, sales declaration, sales register devise related service, validate receipts, e-tax, tax calculator, e-filing, e-payment and e-clearance. And there are lots of informational service like tax information, news, contact address, organizational information, events and other documentations.

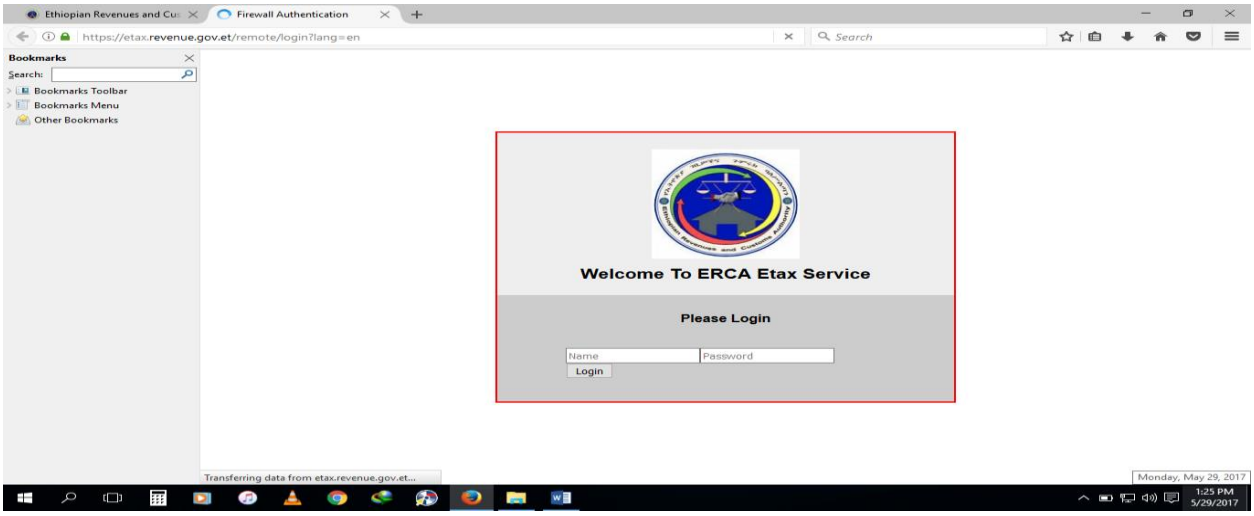

Figure 4.2 E-tax service in ERCA

4.2. Profiles of the respondents

To achieve the objective of the study a sample of 136 Ethiopian revenue and customs authority head office employees have participated as a respondent through filling questionnaires. They were selected in 4 different departments at head office level. In addition to them, 3 technical experts (key informants) and one higher official have participated in the study through interview.

From the distributed 136 questionnaires for employees, 100% of them was filled effectively and returned back. This is because the researcher has collected the data with self-administered questionnaires (the researcher asked each respondents and put the information in the question). It makes the response rate 100%.

4.2.1. General characteristics of the respondents

In the following section, general characteristics of respondents participated through filling the questionnaire are presented. It includes role and position, sex, age, educational background and year of service in the case organization.

4.2.1.1. Role and position of respondents within ERCA

A total of 136 respondents were selected to gather information through the questionnaire (29 respondents from IT department (19 of them were senior IT expert and 10 junior IT experts), 37 respondents form Customer service department (21 senior service officer and 16 junior service officers), 51 respondents from tax information administration management (37 senior tax expert

and 14 junior tax expert), and 19 senior communication officer from education and communication department).

So, respondents were from the relevant position to provide information about electronic public service delivery in ERCA.

4.2.1.2. Demographic variables of the respondents

Table 4.1 Demographic variables of respondents

Sex	**Frequency**	**Percent**
Male	69	50.7
Female	67	49.3
Total	**136**	**100.0**
Age	**Frequency**	**Percent**
18-25	2	1.5
26-35	84	61.8
36-45	39	28.7
46-55	7	5.1
56 and above	4	2.9
Total	**136**	**100.0**
Educational qualification	**Frequency**	**Percent**
BA degree	99	72.8
MA degree	37	27.2
Total	**136**	**100.0**

Source: own survey (2017)

As indicated in the table above, from 136 sample employees selected as a respondent who are working as a service provider in ERCA head office, 69 (50.7%) of them were male employees and the remaining 67 (49.3) were female employees. From this we can understand that, number of male employees and those of female employees in the selected departments is proportional.

In addition to the sex composition, there are 5 age categories. The first age category covers those employees who have the age that ranges from 18-25 years. In this category, there was only 2 respondent or1.5% from the total respondents. The second age category includes those employees who have the age that ranges from 26-35 years. From 136 sample respondents, 84 of them or 61.8% from the total respondents are fall under this age category. The other category constitutes those employees who have ages between 36-45 years. In this age category there are 39 respondents or it covers 28.7% from the total respondents. The last age category covers those respondents with the agesof 56 and above. 4 respondents or only 2.9% of respondents are fall under this age category. From this it can be understood that, employees currently working in ERCA belongs to active age professionals (90% of them are below age 45).

When we look in to the educational qualifications of the respondents participated in the questionnaire, 99 of them or 72.8% of the respondents are BA/BSc degree holders. The remaining 37 (27.2%) respondents are MA/MSc degree holders (see the table below). This indicates that, employees of ERCA head office have good educational background.

4.2.1.3. Respondents year of service in ERCA

Table 4.2 Year of service

Year of service	Frequency	Percent
1-5 year	39	28.7
6-10 year	70	51.5
11-15 year	12	8.8
16-20 years	9	6.6
21 and above	6	4.4
Total	**136**	**100.0**

Source: own survey (2017)

As indicated in the table above, different categories of year of service are presented. This is prepared to measure how long employees have been working there as a service provider. From the information presented above, 39 (28.7%) of the respondents are employees who have the

experience of 1-5 years in the case organization. On the other hand, 70 (51.5%) of the respondents do have an experience that ranges from 6-10 years in ERCA. The remaining 8.8%, 6.6% and 4.4%are employees with the experience that ranges from 11-15 years, 16-20 years and 21 and above years respectively.

It implies that, most employees (80% of them) do have an experience of 10 years and below in ERCA. Only 20% of them have stayed in the organization for long period of time (more than 11 years). The reason may be high turnover of employees within the organization. Anyway, respondents are in the right time and position to provide data about barriers of electronic public service delivery in ERCA as they have been working there for more than 1 year. It gives them the chance to observe the overall electronic service delivery systems and processes of the organization.

4.3.Employees understanding of e-service and their readiness to implement it

Here below, a lot of questions that are incorporated in the questionnaire distributed for employees are presented independently. They are designed to check employees understanding, awareness, attitude, and overall impression regarding e-service delivery.

4.3.1. Employees know how (their understanding) of e-service

To check the awareness of employees about e-service, respondents working in the service delivery process were asked about did they know what e-service is or not. And the following responses are obtained.

Table 4.3 E-service know how of the employee

Do you know what e-service is?	Frequency	Percent
Yes	77	56.6
No	59	43.4
Total	136	100.0

Source: own survey (2017)

As it is shown in the above table, from 136 sample respondents, 77 (56.6%) of them replied that they did know what e-service is. The remaining 59 (43.4%) respondents confirmed that they did not know what e-service is.

What it implies to the organization under study? It is shocking information obtained from the sample respondents. In an organization which propagates itself as one of the implementers of electronic public service delivery to its customers and with its own e-service system, but almost half of the employees did not know what e-service is, it is really dangerous and needs great attention from the concerned management body.

To deliver service electronically, employees at least must have known how about what e-service mean? How it works? And other related issues. The above data indicates that there are works yet not done by the organization to inform employees about electronic public service delivery within the organization.

4.3.2. Basic knowledge and skill of employees

To deliver services electronically, basic knowledge and skill to implement e-service is a requirement. It may include technical skills of handling customer service requests electronically, working with e-service systems and delivering services successfully to customers. When respondents asked about their capacity in terms of having basic skills and knowledge of e-service, they replayed as follows.

Table 4.4 Basic skill and knowledge of employee

Do you have basic knowledge and skills related with e-service?	Frequency	Percent
Yes	78	57.4
No	58	42.6
Total	**136**	**100.0**

Source: own survey (2017)

As presented in the above table, from 136 sample respondents, 78 of them or 57.4% of the respondents do have basic knowledge and skills related with e-service. Whereas the remaining 58 respondents or 42.6% of them do not have basic knowledge and skills related with e-service.

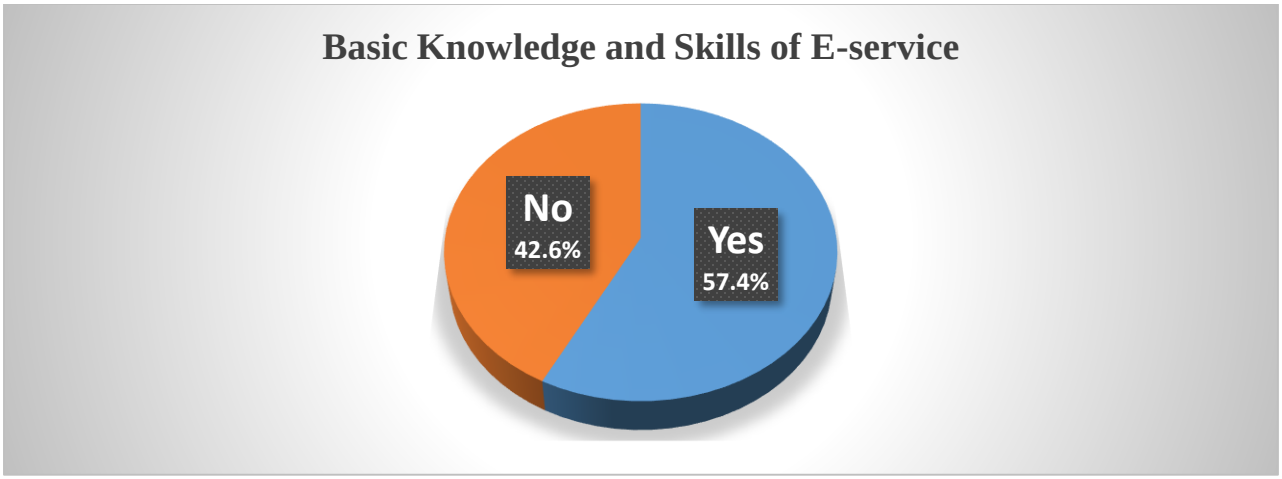

Figure 3.4. Basic skill and knowledge of employee

From the data presented above, we can simply understand that almost half of the employees in Ethiopian revenue and customs authority cannot provide services electronically to their customer. It is because they do not have basic skills to implement e-service in service provision. It indicates minimum level of employee's readiness to implement e-service.

If the organization wants to deploy e-service and get best out of it, the actual service providers or employees must have sufficient knowledge and skills to implement e-service for better service delivery. So, to avoid such deficiencies of basic skill and knowledge, the management must think about it and provide relevant trainings to the employee.

Table 4.5 cross tabulation and chi-square tests of age and basic knowledge

Age * Do you have basic knowledge and skills related with e-service?
Cross tabulation

Count

		Do you have basic knowledge and skills related with e-service?		Total
		Yes	No	
Age	18-25	0	2	2
	26-35	46	38	84
	36-45	25	14	39
	46-55	7	0	7
	56 and above	0	4	4
Total		78	58	136

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.231[a]	4	.007
Likelihood Ratio	18.978	4	.001
Linear-by-Linear Association	.440	1	.507
N of Valid Cases	136		

a. 6 cells (60.0%) have expected count less than 5. The minimum expected count is .85.

From the above table, it can be understood that age has an effect on basic knowledge and skills of employees about e-service. In this case, age is significant factor for basic skills and knowledge of ICT. The finding indicated that old employees (the age of 56 and above) do not have sufficient skills and knowledge of ICT.

4.3.3. Training and short term courses

This question has been raised by the researcher to the respondents so as to confirm that did they participate in any ICT related trainings or short term courses. Trainings may be about basics of ICT, technology utilization, hardware and software, and any other ICT related issues. On the other side, there may be short term courses provided by the organization or any other external educational institutions to the employee working in ERCA. Respondents answered the question as follows;

Table 4.6 ICT training and short term course

Have you taken any ICT related training or short term course?	Frequency	Percent
Yes	66	48.5
No	70	51.5
Total	**136**	**100.0**

Source: own survey (2017)

As shown in the above table, 51.5% of the respondents do not have participated in any ICT related trainings nor attended any short term courses.

It implies that there is lack of training practice within the organization. In order to cope up with modern and newly emerging systems, trainings must be provided to the employee.

Those employees who have participated in ICT related trainings and short term courses were asked about how did they have the opportunity and by whom the trainings or courses were provided. They answered as follows;

Table 4.7 Source of training and short term course

If your answer for the above question is "yes", how did you got the opportunity?	Frequency	Percent
By the organization	17	12.5
Personally	33	24.3
Both	16	11.8
Total	66	48.5
No training	70	51.5
Total	**136**	**100.0**

Source: own survey (2017)

As indicated in the above table, 66 respondents have been participated in ICT related trainings and short term courses. From these respondents, 17 of them got the training opportunity by the organization they are working for. But, 33 of them have taken trainings and short term courses by themselves or personally outside of the organization. The remaining 16 respondents replied they got the chance both personally and by the organization.

It indicates that there is high training gap within the organization. Even from 66 respondents who have taken ICT related trainings or short term courses, half (33) of them were participated in

trainings and short term courses by their effort for their personal developments without the direct support from the organization they are working for.

This implies that the organization must provide trainings to its employees and fill the skill gap of employees working there. This is good not only to the employee's personal development, but also for better performance in the process of service delivery and for organizational success.

4.3.4. E-service implementation

Service providing employees were asked to answer if they use ICT and any other electronic devices in the process of delivering the organization's service to customers or did they work with electronic service delivery systems within the organization.

Table 4.8 Use of ICT and other electronic devices

Do you use ICT and electronic devices in your organization to deliver public service?	Frequency	Percent
Yes	81	59.6
No	54	39.7
Sometimes	1	.7
Total	**136**	**100.0**

Source: own survey (2017)

As it is shown in the table above, 81 (59.6%) of the respondents said that they use ICT and electronic devices to deliver service. Whereas 1 respondent said that he/she uses ICT and electronic devices only sometimes. But, 54 respondents or 39.7 of them confirmed that they are not using ICT and any other electronic devices for service delivery.

The finding indicates that, service delivery in ERCA is not totally ICT mediated. In other words, e-service is not fully implemented for all services.

The other issue that the study attempts to investigate is employee's experience of delivering services electronically while they are out of office and working hour. In electronic service delivery, services can be delivered to the customer at any place and time without any boundary to it. This means service provider can provide service at any time and place, and also service receivers

(customers) will receive without their physical presence and direct contact with the service providers. This is the most important features of electronic service delivery.

Table 4.9 cross tabulation and chi-squire test of age and e-service implementation

Age * Do you use ICT and electronic devices in your organization to deliver public service to your customers? Cross tabulation

Count

		Do you use ICT and electronic devices in your organization to deliver public service to your customers?			Total
		Yes	No	sometimes	
Age	18-25	0	2	0	2
	26-35	43	40	1	84
	36-45	27	12	0	39
	46-55	7	0	0	7
	56 and above	4	0	0	4
Total		81	54	1	136

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.739[a]	8	.064
Likelihood Ratio	19.583	8	.012
Linear-by-Linear Association	12.950	1	.000
N of Valid Cases	136		

a. 11 cells (73.3%) have expected count less than 5. The minimum expected count is .01.

As indicated in the table above, the age of employees was insignificant and there is no relationship between age and e-service implementation

Table 4.10 Service delivery out of office and working hour

Have you ever provided services to your customers while you are out of office and working hour?	Frequency	Percent
Yes	28	20.6
No	108	79.4
Total	**136**	**100.0**

Source: own survey (2017)

As it is shown in the table above, only 28 respondents or 20.6% of them provide services to their customers electronically while they are out of office and working hour. Whereas the majority (108 respondents or 79.4% of them) of the employees did not provide services electronically while they are out of office and working hour.

This implies that the service delivery process needs the physical presence of both the provider and the customer. And there is minimum chance to deliver or to receive service out of the regular working hour. It indicates that if the service provider employee misses to present in office, services will not be delivered to customers.

Data obtained from qualitative questions indicates that there are barriers that hinder the delivery of service outside the office and working hour. The major barriers are; organizational rules not allowed delivering service outside the regular office (restriction), corruption, lack of willingness and interest, lack of access to network and lack of ICT materials.

4.4. Employees attitude about e-service

The following questions are raised to understand employee's attitude or their perception of e-service delivery. One important thing to understand their attitude is asking them their feeling about either they believe e-service can provide services in a better speed and quality or not, when it is compared with the traditional service delivery.

Table 4.11 Attitudes of the respondents about e-service

Do you believe ICT and electronic devices can provide public services in a better speed and quality?	Frequency	Percent
Yes	111	81.6
No	25	18.4
Total	**136**	**100.0**

Source: own survey (2017)

Based on the data presented in the above table, from 136 respondents 111 of them or 81.6% respondents believes that services can be delivered in a better speed and quality by using ICT and other electronic devices. Whereas, 25 respondents or 18.4% of them have replied that ICT and other electronic devices will do nothing in delivering services with better speed and quality.

From this we can understand that most employees (more than 80%) do have a positive attitude about e-service and they believe that delivering services electronically will help to deliver better service with the minimum delay. It is good news for the organization that attempts to implement e-service and provide better and speedy service to its customers. On the other side, the remaining 18.4% employees who do have a negative feeling about electronic service delivery need attention from the top management. Otherwise, they will be a challenge to the organization.

4.5. Organizational readiness

In addition to the information gathered through observation and interview with higher officials, service provider employees were asked to react their feeling about organizational readiness as they are very close to notice each progress and day to day activity of the organization. In this case, the following questions were raised to the respondents.

Table 4.12 Availability of internet network and ICT infrastructure

Do you believe there is sufficient internet network and other ICT related infrastructures in the organization you are working with?	Frequency	Percent
Yes	34	25.0
No	102	75.0
Total	**136**	**100.0**

Source: own survey (2017)

As indicated in the table above, respondents were asked about ICT infrastructure and internet networks availability. From the total respondents, only 34 of them or 25% participants replied that there is availability of internet networks and other ICT related infrastructures. However, the majority respondents (75%) said that there is problem with internet network and availability of other ICT related infrastructures.

The finding tells us there is no sufficient infrastructure within the organization to be utilized by service providing employees. Moreover, the availability of internet network is in question. So, the organization needs to invest more to money and attention in order to answer the question of ICT related infrastructures. In addition, as internet networks are the basic resource to deliver electronic service, the top management has to work in a situation to improve the network quality.

Table 4.13 Orientation for new employees

When you are hired in the organization, did you get orientations about how to work with systems and technological equipment and serve customers?	Frequency	Percent
Yes	65	47.8
No	71	52.2
Total	**136**	**100.0**

Source: own survey (2017)

Usually, organizations provide orientation for the newly hired employees. It may be about the working environment, colleagues, immediate boss, organizational culture, systems and any other important issues. If there is proper orientation practice within the organizations, the newly coming employee will be familiar with the organization in short period of time and can work his/her task successfully.

Employees of ERCA were asked about the orientation practice of the organization, especially about informing newly hired employees regarding service delivery systems employed by the organization. As it is shown in the table above, 65 respondents or 47.8% of them said that they have got orientations about systems and technological equipment when they are hired to the organization. However, more than half of the respondents (71 respondents or 52.2% of them) said they didn't have orientations when they hired about how to work with systems and technological equipment avail in the organization.

This implies that, the organization's orientation system needs to be assessed and the concerned human resource department must prepare an orientation to the newly hired employees about systems and technological equipment employed in the organization. This will help employees to deliver electronic service to their customer successfully.

Table 4.14 Training about new systems

When new systems or technological innovations introduced in your organization, does the organization provides training for employees to fit with the new system?	Frequency	Percent
Yes	54	39.7
No	75	55.1
Sometimes	7	5.1
Total	**136**	**100.0**

Source: own survey (2017)

Orientation is prepared for the newly coming employees of the organization. But, after an employee have joined the organization there is possibility of system updates, technological innovation and changes in the way the organization performs its activity. It is because we are living in the dynamic world. So, to cope up with the new systems introduced in the organization, employees must be introduced with the new system. This can be done through providing up to date trainings to the employee.

Employees of ERCA were asked to react on, when new systems introduced, does the organization provides training for employees to fit with the new system? As it is presented in the table above, only 54 respondents replied that the organization provides training and other programs in order to create understanding for employees about the newly introduced working system and technological innovation going to be used in the process of service delivery. However, more than half of the respondents (55.1%) said, there is no as such activity within the organization. The remaining 5.1% respondents said trainings are given sometimes.

It implies that, when new systems and technological updates introduced in the organization, trainings must be prepared to the employees and other relevant body to fit with the new system.

4.6. Barriers to electronic public service delivery

It is very important to assess the existence of barriers to electronic public service delivery from service provider employees of the organization. In this case employees were asked to express their idea about the existence of barriers which affects their involvement in electronic service provision.

Table 4.15 Existence of e-service barriers

Is there any obstacle/barrier which affects your work of delivering service to your customers electronically?	Frequency	Percent
Yes	124	91.2
No	12	8.8
Total	**136**	**100.0**

Source: own survey (2017)

As indicated in the above table, when respondents asked about the existence of barriers to electronic public service delivery in ERCA, almost all (91.2% of them) respondents confirmed that there are barriers which affect electronic public serviced delivery. So, investigating that barrier to electronic public service delivery that exists in ERCA is the main objective of this study.

Base on the above finding, different literatures have been assessed to identify possible barriers that other scholars have identified in their previous studies.

4.7. Respondents reaction on the proposed barriers of e-service

In the following section, about 12 groups of barriers to e-service are presented for the respondent with a Linkert scale to test them in the context of their organization. The proposed barriers were obtained from different literatures. These barriers are expected to be a challenge in the process of electronic public service delivery. So, this part aims at testing those barriers with the case institution (ERCA head office).

4.7.1. Absence of legal framework

Feng (2003) points out that e-government is not a technical issue, but rather an organizational issue. Implementation of e-government principles and functions requires a range of new rules, policies, laws and governmental changes to address electronic activities including electronic

archiving, electronic signatures, and transmission of information, data protection, computer crime, intellectual property rights and copyright issues.

Table 4.16 Legal framework

No legal frameworks related to e-service	Frequency	Percent
Strongly disagree	16	11.8
Disagree	17	12.5
Neutral	46	33.8
Agree	40	29.4
Strongly Agree	17	12.5
Total	**136**	**100.0**

Source: own survey (2017)

As it is presented in the table above, respondents react on one of the proposed barriers to electronic public service delivery "no legal frameworks related to e-service". As it is indicated above, around 60% respondents are in a position from being neutral to strongly disagree. The remaining 40% of the respondents have said the absence of legal framework is one of the barriers to e-service delivery in ERCA.

This means, absence of legal framework is one barrier in the process of electronic public service delivery. But the degree at which it affects e-service in ERCA is less, as it is supported by 40% of respondents.

Regarding legal frameworks, the following question was raised to officials. Is there any legal framework (policies, procedures and guidelines) in which your organization takes as a base to perform e-service?

As customer service directorate director said, like any other federal organization, all national policies, rules and regulations will have an effect on the work of ERCA. As far as e-service is concerning, policies designed by Ministry of Information and Communication Technology, national ICT plans and other internationally designed frameworks will be used as a base for e-service implementation in the organization. In addition to the above external policies and

frameworks, ERCA by itself prepares its own ICT related plans and procedures for internal use. Moreover, there are lots of proclamations specifically designed for Ethiopian revenues and customs authority by Ethiopian house of people representatives.

4.7.2. Administrative failure

The success of an organization is highly dependent on the way the administration acts within it. When the administration fails to manage the organization in the proper way, there is high possibility of failure in the overall organizational performance. Electronic public service delivery needs better organizational administration with high commitment and attention to it.

Table 4.17 Administrative failure

Administrative failures within the organization	Frequency	Percent
Strongly disagree	4	2.9
Disagree	14	10.3
Neutral	13	9.6
Agree	65	47.8
Strongly Agree	40	29.4
Total	**136**	**100.0**

Source: own survey (2017)

As presented in the table above, almost 80% of the respondents are in a position from ‘agree’ to ‘strongly agree’. It indicates that administrative failure within the organization is one of the major barriers to electronic public service delivery in ERCA head office.

4.7.3. Lack of material (ICT) inputs

Delivering services electronically needs ICT material like personal computer, mobile phones, central data storage system, and any other input which facilitates to the implementation of e-service?

Table 4.18 ICT material (lack of inputs)

Lack of electronic/ICT materials (input)	Frequency	Percent
Disagree	10	7.4
Neutral	20	14.7
Agree	75	55.1
Strongly Agree	31	22.8
Total	**136**	**100.0**

Source: own survey (2017)

As it is shown in table 3.18 above, around 80% of the respondents are in a position from 'agree' to 'strongly agree'. This indicates that, lack of electronic materials or ICT inputs are potential barrier to electronic public service delivery in ERCA.

4.7.4. Lack of interest and ability from customer's side

Electronic public service delivery needs the interest and ability of service receivers. If the customer does not have interest and ability to receive electronic services, providing services electronically will be meaningless. Employees were asked to this question as they are in a good position to judge their customers in their day to day contact with them.

Table 4.19 Customer's interest and ability

Lack of interest and ability from customers side to use e-service	Frequency	Percent
Strongly disagree	4	2.9
Disagree	14	10.3
Neutral	22	16.2
Agree	63	46.3
Strongly Agree	33	24.3
Total	**136**	**100.0**

Source: own survey (2017)

From the total of 136 respondents participated with the questionnaire, 96 (70.6% which is the sum of the value of 'agree' and 'strongly agree') of them said that lack of interest and ability from customer's side is one barrier to electronic public service delivery in ERCA. Whereas the remaining respondents are in a position from neutral to strongly disagree.

4.7.5. Fear of change (resistance to change)

According to Ebbers and Van Dijk (2007), Resistance can be a barrier for e-service. When new systems and technological innovations introduced, employees may be in a position to resist the new change. There are different reasons for this. Change is painful, but once it is accepted the return will be high.

Table 4.20 Fear of change

Lack of interest to accept new systems and technologies from employees side (Fear of change)	Frequency	Percent
Strongly Disagree	8	5.9
Disagree	22	16.2
Neutral	6	4.4
Agree	74	54.4
Strongly Agree	26	19.1
Total	**136**	**100.0**

Source: own survey (2017)

As presented in the above table 3.20, 100 ('agree' + 'strongly agree') respondents said that lack of interest to accept new systems and technologies from employee's side or fear of change is one of the barrier to electronic public service delivery and it exists in ERCA head office.

4.7.6. Lack of ICT infrastructure

ICT infrastructure is recognized to be one of the main challenges for e-government (Alsheri and Drew, 2010). Electronic public service delivery requires the availability of sufficient ICT infrastructure within the organization. The infrastructure may include from internet network to different hardware and software.

Table 4.21 Lack of ICT infrastructure

Lack of ICT infrastructure	Frequency	Percent
Disagree	11	8.1
Neutral	10	7.4
Agree	65	47.8
Strongly Agree	50	36.8
Total	**136**	**100.0**

Source: own survey (2017)

As presented in the above table, from 136 respondents, 115 of them or around 84.6% of the respondents agreed that there is lack of ICT infrastructure in the organization and it affects the process of electronic public service delivery.

4.7.7. Privacy and security issues

Privacy and security risks emerge in literature as serious concerns in the era of e-service. The reason is that if they are not properly managed, they could pose a threat to the viability of e-service (Hassan et al., 2010).

Table 4.22 Privacy and security

The issue of privacy and security from both the employees and customers side	Frequency	Percent
Disagree	13	9.6
Neutral	59	43.4
Agree	42	30.9
Strongly Agree	22	16.2
Total	**136**	**100.0**

Source: own survey (2017)

As it is presented in the above table, from 136 total respondents; 13 of them replied 'disagree', 59 respondents are in a neutral position, 42 of them replied 'agree' and 22 of them said they strongly agree that the issue of privacy and security from both the employees and customers side is one barrier to electronic public service delivery in ERCA. From this we can understand that the issue of privacy and security is one barrier as 47% respondents support it.

4.7.8. Lack of employee skill and knowledge

Another major challenge of an e-service delivery can be the lack of ICT skills. This is a particular problem in developing countries, where the constant lack of qualified staff and inadequate human resources training has been a problem for years (UNPA&ASPA, 2001).

Table 4.23 Lack of employee skill and knowledge

Lack of skill and knowledge from employees side	Frequency	Percent
Disagree	17	12.5
Neutral	10	7.4
Agree	64	47.1
Strongly Agree	45	33.1
Total	**136**	**100.0**

Source: own survey (2017

Lack of skill and knowledge from employee's side to use ICT and deliver electronic public service delivery is one of the major barriers to electronic public service delivery. The above table indicates that more than 80% of the respondents confirmed that lack of skill and knowledge exists there and it is one barrier to e-service.

4.7.9. Lack of cooperation with private sectors

According to Carvin (2004), collaboration between the private and public sectors is needed in order to provide resources, skills and capabilities that the government may lack.

Table 4.24 Cooperation with private sector

Lack of cooperation with private sector	Frequency	Percent
Disagree	4	2.9
Neutral	13	9.6
Agree	74	54.4
Strongly Agree	45	33.1
Total	**136**	**100.0**

Source: own survey (2017)

As we can understand from the response of the respondents above, lack of cooperation with private sector can be one barrier to electronic public service delivery in ERCA. It is because around 88% of the respondents replied that there is lack of cooperation between their organization and private sectors in the area of public service delivery.

4.7.10. Social and cultural issues

Some barriers to the implementation of e-government are not technical, but the cultural implications of new technologies. Personal characteristics and subjective conditions are more likely to be influenced by cultural factors than are the objective conditions surrounding the development and diffusion of new technology (DeLisi, 1990). Cultural norms and individual behavior patterns play a role in how citizens and policy makers use technology.

Table 4.25 Social and cultural situation

The social and cultural situations of the country (The people are misinformed about technologies)	Frequency	Percent
Disagree	20	14.7
Neutral	31	22.8
Agree	53	39.0
Strongly Agree	32	23.5
Total	**136**	**100.0**

Source: own survey (2017)

According to the response of the employees in the case organization, it is confirmed that social and cultural situation of the society can affect electronic public service delivery. It is because as indicated in the above table, more than 60% respondents believe that the issue can be one barrier to e-service.

4.7.11. Lack of attention from the top management

The literature shows that without support from the top management, an innovation is less likely to be adopted. Thus, e-government implementation needs the support from the highest level of government for successful implementation (Alsheri and Drew, 2010). Top management support refers to the commitment from top management to provide a positive environment that encourages participation in e-government applications

Table 4.27 Attention of the top management

Lack of attention from higher official of the organization	Frequency	Percent
Neutral	9	6.6
Agree	35	25.7
Strongly agree	92	67.6
Total	**136**	**100.0**

Source: own survey (2017)

As indicated in the table above, almost all respondents (94% of them) agreed that lack of attention from the top management is the major barrier in the process of electronic public service delivery. In other words, the top management's attention to e-service is less.

An interview was made with officials by asking the question which says "How do you express the focus of the management towards e-service?"

According to the information obtained from the official, now a day, unlike previous times, the organization's major focus is to deliver better service and satisfy the customers. To achieve this objective, the top management gives higher emphasis to utilize ICT and other technological innovations in the service sector for better service delivery. But it does not mean it is enough. More attention must be given to develop better e-service system.

4.7.12. Financial problem

Literatures also proposed that lack of financial resource can be one barrier to electronic service delivery. Lack of budget may be hindering the development and implementation of e-service.

Table 4.27 Financial problem

Financial problem	Frequency	Percent
Strongly Disagree	1	.7
Disagree	25	18.4
Neutral	23	16.9
Agree	58	42.6
Strongly Agree	29	21.3
Total	**136**	**100.0**

Source: own survey (2017)

Respondents were asked to measure the level of effect of financial problem in electronic public service delivery in their organization. Around 64% of the respondents agreed that it can be one barrier. The remaining respondents are in a position from 'neutral' to 'strongly disagree'.

4.7.13. Other barriers

In addition to the proposed barriers above, employees were asked to list down other barriers not included in the above part but affect their e-service implementation in their organization. When it is summarized, the following barriers are there and affect electronic service delivery. The most repeated barriers by the respondents were; electric power problem, connection/network problem, system problem, lack of technical assistant from ICT experts, poor coordination among government sectors like electric power corporation and Ethio-telecom, corruption within the organization, budget and high cost of ICT materials and internet fee.

Officials also asked to identify barriers to electronic public service delivery in their organization. According to the response of the official, there are different types of barriers in the process of electronic public service delivery in ERCA. The barriers can be grouped in to 4 based on the source where they are arising from. These are government barriers, organizational barriers, barriers from employee's side and the customer related barriers.

Lack of attention from the government side is identified as a major barrier. They said, higher emphasis must be given to the ICT sector as it is going to be the leading sector in the future and one of the most important input for other developmental issues. The other government related barrier is lack of cooperation between government sector like Ethiopian electric power corporation, Ethiopian Telecommunication Corporation and ministry of ICT with ERCA. These organizations must work cooperatively. The other groups of barriers are organizational in nature. In this case the effort of the organization towards developing electronic public service delivery system and the lower level of readiness to it can be taken as a barrier. The other barrier to electronic public service delivery emanates from employees of the organization. Their level of skill and knowledge, attitude and interest to it greatly affects the implementation of e-service. The other barrier is raised from customers of ERCA. Their trust and awareness for online service is limited.

Moreover, according to an interview made with the ICT expert, there are many challenges of e-service delivery. Among others, some are; poor national technological capacity, budget, internet network problem and lack of personal skill. To avoid these barriers, the organization needs to invest more money and give much attention than before.

Data from customers/beneficiaries was collected through reviewing their comment on the diary that they leave to the organization each day after they receive service. Comments written by

customers in 10 consecutive service days have been assessed and the following barriers to electronic public service delivery are investigated. In summary, barriers to e-serviced delivery raised by beneficiaries are; system interruption, lack of information access that clearly expresses how to use available e-services (it is also confirmed by the researcher in the time of field observation), electric power problem, lack of hardware and software related innovations in the area of service delivery. They also suggested possible solutions to overcome those barriers.

CHAPTER FIVE

MAJOR FINDINGS, CONCLUSION AND RECOMMENDATIONS

5. Introduction

This chapter attempts to present the summary of major findings of the study based on the data obtained and analyzed under the third chapter. Conclusion and recommendations are also given based on the major findings of the study.

5.1. Summary of major findings

The main objective of the study was to investigate the barriers to electronic public service delivery in Ethiopian revenues and customs authority. In achieving this objective, the study has attempted to answer the following basic questions.

a. How are employees understanding and attitude regarding electronic public service delivery and their readiness to implement it?

b. To what extent are the organization and the employee ready to deliver public service electronically?

c. What are factors affecting electronic public service delivery in ERCA?

d. What measures can be taken by the government, the organization, the employee, and the beneficiaries/customers in order to minimize/overcome barriers to electronic public service delivery?

The researcher purposively selected one public organization engaged in implementing e-service. To collect the necessary information questionnaire, interview, review of documents and observation were employed. The findings of the study are summarized as follows.

- Employees know how about e-service is minimum, 43.4% of the respondents do not know what e-service is.
- Basic skills and knowledge of employees is minimum, 42.6% of the respondents do not have basic skills and knowledge related to e-service.
- Participation of employees in ICT related trainings and short term courses are low, 51.5% of them do not take any training and short term course.
- Training provision within the organization is low, only 12.5% of the respondents have got training opportunity.

- Employees usage of ICT and other electronic devices for service delivery is low, 39.7% of them do not use ICT and other electronic devices for service delivery.
- The practice of service delivery outside the office and office hour is low, 79.4% of the respondents do not have such experience.
- Attitude of employees towards e-service is good, 81.6% respondents believes that e-service can deliver speedy and quality service.
- Organizational readiness to e-service is low, 75% respondents said there is no sufficient internet network and ICT related infrastructure within the organization. Moreover, orientation service to the newly hired employees about systems and technological equipment is minimum, 52.5% of respondents did not get orientation service. In addition, training for newly introduced systems is low, 55.1% of the respondent replied that no training is given for newly introduced working systems.
- The existence of barriers- a lot of e-service barriers are there, almost all respondents (91.2%) confirmed that and agreed on the prevalence of barriers of e-service in ERCA.

Here below, the summary of barriers to electronic public service delivery in Ethiopian revenue and customs authority are presented. Some barriers are proposed by the researcher and confirmed by the respondents, while others are investigated from employees, officials, customers and ICT experts. For better understanding, the researcher categorized different barriers as government/organizational related, employee related and customer related based on their source.

Table 5.1 Summary of major barriers

Governmental/ organizational barriers	Employee related barriers	Customer related barriers
Absence of legal framework Administrative failure within the organization Lack of infrastructure Lack of ICT input Electric power problem (frequent power interruption) System/connection/network problem Lack of cooperation with private sectors Lack of attention from the top management Financial problem (budget shortage) Lack of technical assistant from ICT experts Poor coordination among government sectors Corruption of officials within the organization Shortage of information access to the customer High cost of using ICT materials and the internet fee Lack of government attention Low level of readiness Low level of national technological capacity	Resistance to changes from employee's side Lack of employee skill and knowledge Low level of readiness	Lack of interest and ability of customer Privacy and security issues Social and cultural barriers Low level of readiness

5.2. Conclusion

Electronic public service delivery is a new way of service delivery currently employed by government organizations in order to modernize and deliver effective and efficient service to customers/citizens. But the implementation of e-service in government organizations has faced different challenges and affected by several barriers.

Like other government organization, ERCA is currently delivering service to its customers electronically. But a lot of barriers hindering electronic service delivery are there. According to the finding of the study;

a. Employees understanding and attitude about electronic public service delivery and their readiness to implement e-service in ERCA is not satisfactory.

b. Based on the finding, the organization and the employee of ERCA are not fully ready to deliver public service electronically.

c. There are many barriers which affect electronic public service delivery in ERCA.

d. Measures should be taken by the government, the organization, the employee, and the beneficiaries/customers in order to minimize/overcome barriers to electronic public service delivery.

From the result of the study, it can be concluded that e-public service delivery in Ethiopia has not effective as intended. It is because of the prevalence of several barriers to electronic public service delivery. The identified barrier in this study affects all government organizations which are engaged in electronic public service delivery.

5.3. Recommendations

E-service is a newly emerging concept in the area of service delivery. It is too broad to investigate each and every issue in detail at this time. Future researcher can incorporate and raise more issues in electronic public service delivery. However, based on the major findings of the study and solutions suggested by officials, employees, experts and beneficiaries/customers; the following recommendations are forwarded.

a. In order to equip employees with the basic skills and knowledge of e-service and boost their utilization of ICT, trainings and other awareness creation works needs to be done by the organization management.

b. The ground rule needs some revision and ICT devises must be provided to the employee so as to help them to provide services while they are out of office and working hour.

c. The readiness of ERCA to implement e-service is not as expected. So, infrastructures like electric power, internet network, and other ICT materials needs great attention.

d. Information should be disclosed for customers to help them to be aware of available e-service systems in ERCA and the way to use them.

e. ERCA shall take the initiative to work together with other government institutions like Ethiopian Telecommunication Corporation and electric power corporation and also with private sectors, as the overall operation is dependent on those institutions.

f. By designing internal rules, procedures and frameworks the overall organizational administration of ERCA should work towards successful Implementation of e-service.

g. From the government side, special attention must be given to ERCA as the organization is a backbone for national development.

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Appendixes

Data collection instruments

Questionnaire

The data collected through this questionnaire will be used to investigate barriers of electronic public service delivery in the Ethiopian Revenues and Customs Authority head office. The objective of the study is to complete Master's Degree in Public Management and Policy (MPMP), Department of Public Administration and Development Management, College of Business and Economics, Addis Ababa University.

Questionnaire to be filled by employees working in ERCA head office

Dear respondents, to the questions presented below, pleases I am kindly asking you to put a "√" sign in the box where you think the right answer is and to write your comments on the space provided.

Any information you provide will be strictly used only for academic purpose and it is confidential.

Thank you in advance for your cooperation!

AbrhamEndalew

I. Personal information:

1. Sex Male ☐ Female ☐
2. Age 18-25 ☐ 26-35 ☐ ☐
   46-55 ☐ and above ☐
3. Educational qualification

   Diploma BA degree MA degree ☐

   PhD ☐ Other _____
4. Year of service

   1-5 year ☐ 6-10 year ☐ 11-15 year ☐

   16-20 year ☐ and above ☐
5. Your current position/ work title in ERCA _____

II. Your perception of e-service

6. Do you know what e-service is?

   Yes ☐ No ☐

7. Do you have basic knowledge and skills related with e-service?

   Yes ☐ No ☐

8. Do you use ICT and electronic devices in your organization to deliver public service to your customers?

   Yes ☐ No ☐ Sometimes ☐

9. Do you believe, ICT and electronic devices can provide public services in a better speed and quality?

   Yes ☐ No ☐

10. Do you have a pro-technology personality, or do you like new and up-to-date technological innovations /specially to provide service to your customers/?

    Yes ☐ No ☐

11. Have you taken any ICT related training or short term course?

    Yes ☐ No ☐

12. If your answer for question number 13 is “yes”, how did you get the opportunity?

    By the organization ☐ Personally ☐h ☐

13. Do you believe there is sufficient internet network and other ICT related infrastructures in the organization you are working with?

    Yes ☐ ☐

14. When you are hired in the organization, did you get orientations about how to work with systems and technological equipment and serve customers?

Yes ☐ No ☐

15. When new systems or technological innovations introduced in your organization, does the organization provides training for employees to fit with the new system?

Yes ☐ No ☐ Sometimes ☐

16. Is there any obstacle/barrier which affects your work of delivering service to your customers electronically?

Yes ☐ No ☐

17. If your answer for question number 10 is "Yes", please list those barriers.

i. _____

ii. _____

iii. _____

iv. _____

18. Have you ever provided services to your customers while you are out of office and working hour?

Yes ☐ No ☐

19. Please tell me obstacles that affect you in the process of providing services to your customers electronically, while you are out of office and working hour?

i. _____

ii. _____

iii. _____

iv. _____

III. Scholars in the area of e-service have identified some barriers which affect a service giving organization in the process of delivering services electronically. In the following table below, list of barriers to electronic service delivery collected from different literatures are presented.

Dear respondents, please rate them based on their degree of effect on your organization's electronic public service delivery process. Just show your reaction by choosing from "strongly agree" to "strongly disagree" and put the "√" sign on the proper place.

No.	List of proposed barriers of e-service	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	No legal frameworks related to e-service					
2	Administrative failures within the organization					
3	Lack of electronic/ICT materials (input)					
4	Lack of interest and ability from customers side to use e-service					
5	Lack of interest to accept new systems and technologies from employees side (Fear of change)					
6	Lack of ICT infrastructure					
7	The issue of privacy and security from both the employees and customers side					
8	Lack of skill and knowledge from employees side					
9	Lack of cooperation with private sector					
10	The social and cultural situations of the country (The people are misinformed about technologies)					
11	Lack of attention from higher official of the organization					
12	Financial problem					

Thank you!

Interview questions

I. For higher official (customer service directorate director)

1. Is there any legal framework (policies, procedures and guidelines) in which your organization takes as a base to perform e-service?
2. How do you express the focus of the management towards e-service?
3. How do you express the readiness and commitment of the organization to provide better service to your customers electronically?
4. What are barriers/challenges that affect the organization in providing services electronically (can be within or outside the organization)?
5. What do you suggest to solve these barriers?
6. What is your plan to the future regarding e-service?
7. Investment in birr put to developing e-service initiative to date.

II. For IT head and technical experts

1. How do you express the current situation of e-service in your organization?
2. What are barriers of e-service in the organization?
3. What measures/solutions can be done in order to avoid these barriers?
4. Number of employees/personnel working directly to support e-service

Observation guidelines (point of observation)

1. Infrastructure (ICT devices, internet network, electric power)
2. Online service system (the portal of ERCA)
3. Availability of information to the customer about the way they can receive services electronically