ADDIS ABABA UNIVERSITY

COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCES

SCHOOL OF INFORMATION SCIENCE

E-SERVICE VALUE ASSESSMENT: THE CASE OF MINISTRY OF TRADE AND INDUSTRY PORTAL (OTRLS)

A MASTER'S THESIS

BY:

JELALU NESRE AERATO

SEPTEMBER 2021

ADDIS ABABA, ETHIOPIA

ADDIS ABABA UNIVERSITY

COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCES

SCHOOL OF INFORMATION SCIENCE

E-SERVICE VALUE ASSESSMENT: THE CASE OF MINISTRY OF TRADE AND INDUSTRY PORTAL (OTRLS)

A Thesis Submitted to School of Graduate Studies of Addis Ababa University

In Partial Fulfilment of the Requirements for the Degree of

Master of Science in Information Science (Information Systems)

By: Jelalu Nesre Aerato

Advisor: Getachew H/Mariam (PhD)

September 2021

Addis Ababa, Ethiopia

Declaration

I, the undersigned, hereby declare that this thesis entitled "**E-Service Value Assessment: The Case of Ministry of Trade and Industry Portal (OTRLS)**" is original work, the result of my own investigation, except where otherwise stated. I have undertaken the research independently with the guidance and support of my research advisor. All sources and materials used for this study have duly acknowledged by citations giving explicit list of references. A list of references carefully appended.

Signature: _____

Jelalu Nesre Aerato

Jellyhny.46@gmail.com

I, the undersigned, confirm that this thesis has submitted for examination with my approval as university thesis advisor.

Advisor's Signature: _____

Getachew H/Mariam (PhD)

ADDIS ABABA UNIVERSITY

COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCES

SCHOOL OF INFORMATION SCIENCE

E-SERVICE VALUE ASSESSMENT: THE CASE OF MINISTRY OF TRADE AND INDUSTRY PORTAL (OTRLS)

By: Jelalu Nesre

Approval of Examination

This thesis work entitled as "E-Service Value Assessment: The Case of Ministry of Trade and Industry Portal (OTRLS)" has been examined and approved for the award of the degree of Master of Science in Information Science (Information Systems) from Addis Ababa University, College of Natural and Computational Sciences, School of Information Science.

Name and Signature of Members of the Examining Board

Getachew H/Mariam (PhD)	**_____**	**_____**
Advisor	**Signature**	**Date**
Lemma Lessa (PHD)	**_____**	**_____**
Examiner	**Signature**	**Date**
Solomon Teferra (PHD)	**_____**	**_____**
Examiner	**Signature**	**Date**

Acknowledgement

First, I want to thank and praise the almighty Allah helped me finish this study successfully!

Even if it was a tough journey, I am very indebted to many people and organizations for their assistance and contribution towards completion of this study. This study would not have been simple without the love, support, and encouragement I received from my advisor, family, respondents, office associates, classmates, and friends. I am grateful to forward my heartfelt and sincere special thanks for all. Especially I would like to thank:

My advisor, Dr. Getachew H/Mariam for providing me with the freedom to explore my own interests and support with plenty of information. Thank you for all your important contribution of realizing this study. Mainly for his constructive comments, suggestions, guidance, academic advice and mentorship. His positive outlook and contribution in my study encouraged me greatly to complete this study. Dr.Getachew is not only my research advisor who support me in carrying out my research, but also a guide who focuses on my development as a researcher.

All AAU School of Information Science Instructors especially Dr. Workshet L., and Mr. Aminu M. and Department of Amharic Language Literature, Folklore department especially department head Dr. Girma Gebre, his colleagues and office assistant for his support in reviewing, and approving the Amharic translated questionnaire.

The Ministry of Trade and Industry ICT Directorate Director Mr. Tsega Assefa and his respective office workers and office assistant. In facilitating the whole study process in providing information about the MOTI e-Trade portal users and the portal issues and the user's data to conduct survey.

All my colleagues in Hawassa University Faculty of Informatics Deans and instructors, especially Abdela K., Daneil T., Demewoz B. Solomon Ts., Umer N., Melat A., Daneil S., Kibrebaal G., Haile/Mariam A., Abinet T. thank you so much for your support in my journey.

All my classmates for your friendship, discussion and experience sharing. Abdullahi, Gech, Amin, Sntayehu, Mihret, Yoseph, Dagmawit, Samrawit, Bereket, Thank you for all what you shared during class and this thesis work.

Special thanks for those that collect data without data collection this work is nothing especially My wife, Semira, Jemal, Addisu, Sofiya, and Yonas thank you so much handy to assist me on data collection. Furthermore, I would like to thank all the respondents of the study in Addis Ababa and around who completed the questionnaires despite their busy business time.

My family Mom, Thank you for all what you have done for me curiosity in my success. Mom, thank you for all your continual love, supplication, care, and support. Dad thank you so much for all your kind-hearted morals. Brothers and sisters, your support and moral strengthened me to defend challenges.

My love, how my life will be empty without you! Thank you so much again for all unreserved love, care and support to elevate my potential. My sweet, now the time is yours! Thank you for your patience and understanding @all.

Jelalu Nesre Aerato

September 2021

Addis Ababa, Ethiopia

I would like to dedicate for my beloved mother and my wife

For all your love, care, and support!

Abstract

Providing quality services to citizens is one of the core values that all government organizations aspires to achieve. The purpose of this study is to assess the satisfaction level of e-service users of ministry of trade and industry (MOTI), online trade registration and licencing system (OTRLS). E-service value assessment issues are not yet widely studied. Thus, this study attempts to fill this research gap. The study used a deductive research approach by formulating hypothesis from extant literatures. A survey instrument was developed and data collected from 327 active system users. Structural equation modelling (SEM) used for model building and data analysis. For this study COBRA, (cost, opportunity, benefit, and risk analysis) framework was used as study model. The finding of the study indicates strong positive relationships among constructs of COBRA. The study further confirms that the framework is important approach for assessing the success of e-service from citizens' perspective. The study evaluate the applicability of the model in the context of e-service in developing country users. The outcome of the study also informs for policy makers of MOTI to enhance the user centricity of the e-service portal.

Keywords: *COBRA, E-service, e-Trade, MOTI, Satisfaction*

Table of Contents

List of Tables

List of Figures

List of Acronyms

AAU	Addis Ababa University
AVE	Average Variance Extracted
CBE	Commercial Bank of Ethiopia
CB-SEM	Covariant Based Structural Equation Modelling
COBRA	Cost-Risk and Benefit-Opportunity Analysis
CSI	Customer Satisfaction Index
CSM	Citizen Satisfaction Model
ECT	Expectation Confirmation Theory
E-Government	Electronic Government
EGDI	Electronic Government Development Index
EGP	Electronic Government Procurement
E-GOVQUAL	Electronic Government Quality
EGOSQ	Electronic Government Service Quality
E-SERVEVAL	Electronic Service Evaluation
E-SQUAL	Electronic Service Quality
EGOVSAT	Electronic Government Satisfaction
ERCA	Ethiopian Revenue and Customs Authority
ESD	Electronic Service Delivery
E-Trade	Electronic Trade
FDRE	Federal Democratic Republic of Ethiopia
G2B	Government to Business
G2C	Government to Citizen
G2E	Government to Employee
G2G	Government to Government

ICR	Internal Consistency Reliability
ICT	Information Communication Technology
IR	Indicator Reliability
IS	Information Systems
KPIs	Key Performance Indicators
LRD	Licencing and Registration Directorate
LV	Latent Variable
MIS	Management Information Systems
MIT	Ministry of Innovation and Technology
MOTI	Ministry of Trade and Industry
NCSI	National Customer Satisfaction Index
OTRLS	Online Trade Registration and Licencing System
PLC	Private Limited Companies
PLS-MGA	Partial Least Squares Multi-Group Analysis
ROI	Return on Investment
SALT	Self-Adaptive quaLity moniToring
SEM-PLS	Structural Equation Modelling - Partial Least Squares
SERVQUAL	Service Quality
SET	Social Exchange Theory
SPSS	Statistical Package for Social Sciences
SWOT	Strength Weakness Opportunity Threat
TVET	Technical and Vocational Education and Training
UN	United Nations
VIF	Variance Inflation Factor
VMM	Value Measurement Model

CHAPTER ONE

1 INTRODUCTION

1.1 Background of the Study

Information and communication technology (ICT) use in government activities has become rapidly growing phenomenon in recent years. Public organizations adopt e-government to modernize their service provision quality, boost public management organizations' efficiency and to gain users satisfaction. According to (WorldBank, 2009)the main drivers for e-government reforms are low levels of citizen and business satisfaction with public services, low quality public service, limited trust and confidence in government, fragmentation and duplication of government information and services, and knowledge economy. That is the new and emerging technologies, demand for business intelligence and evidence to aid decision making and national competitiveness for further economic development.

Government of Ethiopia through its ministry of innovation and technology (MIT) is spending a lot of budget for the development of a number of e-government services. Among them Ethiopian government portal (www.ethiopia.gov.et), Ethiopian e-service portal (www.eservices.gov.et), open data portal (www.data.gov.et) and many other organizations' websites and electronic service development (FDRE G. , 2016). However, it is still unable to meet the public expectations. The problem is that despite their best initiatives, the government continues to model and provide services based on their own requirements and processes instead of the needs of the citizen they serve (Bezu, 2019). According to (Bezu, 2019)United Nations (UN) e-government development readiness survey changed by group of countries by percentage electronic government development index (EGDI). EGDI very high is (> 0.75), EGDI high (0.5–0.75), EGDI middle (0.25–0.5), EGDI low (< 0.25) (UN, 2018). Ethiopia scores a low EGDI value since 2003 to 2012 and make a good progress after 2014 up to 2018 become middle level EGDI country.

E-government services involve many stakeholders who have different objectives that can have an impact on its success (Rowley, 2011) and (Magoutas, Chalaris, & Mentza, 2009). Among these stakeholders, citizens are the primary stakeholders of e-government activities. Accordingly, their satisfaction plays an important role in e-government success. The rapid change in ICT greatly

facilitates the development of e-government worldwide, and helps to create change in the traditional modes of public service delivery to modern citizen-centric e-government service delivery (Beynon-Davies, 2005). As a result, significantly improved the effectiveness and efficiency of the public service delivery with real values created for citizens through leveraging provision of convenient access to public services, empowerment through access to information, eradication of distance, and time and cost savings (Heeks, 2008) and opportunities to operate business effectively and efficiently. A fully-fledged e-government service is expected to provide users with 'one-stop shopping' (Grimsley & Meehan, 2007)to access and transact the information needed via a government website that is tailored to provide information irrespective of the various functional units of that particular government agency do (Osman, et al., 2011). E-government goal is to create benefits to government and citizens by improving transparency, efficiency, trust, lower administrative costs, citizen participation, (Alanezi, Kamil, & Basri, 2010)reducing risk and boosting opportunities.

1.2 Research Motivation

This research is initiated by the situation in our country some government operations are carrying out through information systems (IS), which increase e-service needs at individual, organizational, and national level. Organization are showing their more concern to adopt and uses e-services features fully or beside the traditional paper based work. The digital world phenomenon, offers tremendous benefits and opportunities, it also creates significant and unprecedented risks (Bezu, 2019). This phenomenon needs assessment on e-service value on general.

Now a day as many government business processes automated and individuals perform their business electronically the IS themselves become an important element/ part of life. The assessment on value of e-government initiatives approached from different directions with a recent interest in user-centred satisfaction. In Ethiopia, e-service related studies are limited (Eshetu, 2015). This study also motivated by shortage of e-service related works.

This research is also motivated by the argument that e-service being one key resources that improve organizational performance and competitive advantage and the creation of business value from IT-enabled government operations for citizens (Belachew, 2010). Therefore, this research was carried out to the foundational theoretical framework that can be used in future empirical researches, which might be interested to work in a related topic.

1.3 Statement of the Problem

The ultimate goal of e-government initiatives is to create value for citizens this value leads to great level of customer satisfaction (Belachew, 2010). The e-service value evaluation is a key issue in assessing the return on investment (ROI) in government sites, as it can measure how the services affect the citizen and is a significant source of requirements for design reviews of present services (Barbarian, et al., 2006). It is for these reasons that the use of the concept of public value in relation to e-government has much to commend it (Heeks, 2008). As an analytical framework, referring to the value created for citizens by government public value used to aid decision making, to assess performance and in the e-government context, to provide a bridge between the technology and wider policy communities (Heeks, 2008). E-government offers numerous opportunities for governments to improve the delivery of public services (Deng & Kanishka, 2010) and improve their performance through automating numerous public services (Kearns, 2004).

ICT creates a great potential for the business with respect to e-government services according to (Lessa & Tsegaye, 2019) this is plausible to examine concerning the public value of e-government services. In Ethiopia context, the e-government services are the area under study. There is research conducted in e-government development and initiatives (Belachew, 2010), sustainability (Anteneh, Belachew, & Lessa, 2011), acceptance (Lessa, Negash, & Amoroso, 2011), success (Lessa L. , 2015), and challenges (Eshetu, 2015), usability and accessibility (Zeleke, 2018), and public value (Lessa & Tsegaye, 2019). However, as per researcher's knowledge the stakeholder's satisfaction based on user's perspective on the e-service is not yet conducted.

With the rapid development of e-government initiatives, adopting the concept of assessing the value of e- service for evaluating the performance of e-government from the perspective of citizens is not only appropriate but also necessary (Deng & Kanishka, 2010). Therefore, the use of the e-service value concept is appropriate for evaluating the performance of e-government initiatives in terms of the value that e-government has provide for citizen's satisfaction (Khayri, Scheepers, & Stockdale, 2011). E-government services involve a large number of stakeholders (Grimsley & Meehan, 2007). Number of fragmented papers on e-government assessment models that aim to evaluate an e-government service's efficiency and effectiveness from a general perspective (Rowley, 2011). A little effort exists to provide a holistic assessment model from a specific user's perspective (Rowley, 2011).

Providing quality services to citizens is at the core value of what most government performing now a day. While many governments have invested highly in e-government projects in the last decade, about the return value of these investments and quality of e-government from the user's value perspective relatively little known (Khayri, Scheepers, & Stockdale, 2011). Like other developing nations, Ethiopia have with minimum and mandatory infrastructure fulfilled, limited band width, less penetration of computers, etc., still Ethiopia can provide services to citizens (Belachew, 2010). In the first phase of e-government initiatives, Ethiopia has invested a lot in infrastructure to establish the baseline requirement to provide services (Belachew, 2010). By narrowing down the differences between 'where we are now' and 'where the e-government project wants to get us', we have achieved some services to provide (FDRE G. , 2016).

According to (Mengesha & Common, 2007) reform made by MOTI that is licencing and registration directorate (LRD) extremely successful and has rectified the problems ingrained in the system over a long period. Also says exemplary achievements have witnessed in this organization, which could be a lesson for other public sectors in the country. At that period the (Mengesha & Common, 2007) says, "MOTI needs to maintain the momentum of the reform and needs to cascade business process reengineering (BPR) and other elements of the reform in the remaining, divisions, departments, and work units". MOTI tries to maintain its momentum and introduce fundamental change to improve trade registration and licencing services (MoTI F. , 2019). At all levels of trade administration, a uniform and harmonized system of trade registration and licencing system established to international standards. The system ensure fair, transparent, and easy access to services and focus on the professional efficiency and competency of services provided to the business community (MoTI F. , 2019). However, to verify this it needs to investigate its value of e-service on the perspective of users of the system.

One of the central research questions emerging from the best and critical views on e-government is how such a new mode of governance has affected service delivery in the public sector (Golubeva, 2007). The adoption of e-government has been able to change service delivery, one of the main functions of Governments based on quality, processes and operations. In the area of the quality of e-government, most of the studies focuses only on evaluating the overall customer (citizen) satisfaction and the quality of the e-government websites (Khayri, Scheepers, & Stockdale, 2011). Additionally, such studies do not assess the performance and quality of e-

government services from citizen's perspective. E-services value related researches common problem is that it assesses the public service efficiency based on the average cost of processing a given output, rather than examining the potential outcomes that citizens gained (Khayri, Scheepers, & Stockdale, 2011). They also stresses on 'measuring how cost-effective a government website provides quantity of information rather than the usefulness and relevance of the information to the citizen's (Raus, Liu, & Kipp, 2010). In our country, there is similar situation the value e-services that offered by government is not assessed from user's perspective. However, how initiatives of e-government service create values for its citizen and how much satisfied on it needs investigation, as there is no rigorous assessment found.

Public has lost faith in the performance of the core institutions of representative government, and it hoped that more open and transparent government and more efficient service delivery could help restore public confidence (Heeks, 2008). Still, the Ethiopian e-government initiatives face several barriers (Belachew, 2010). One of them is unassessed value gained by using e-service through citizen's value lens (satisfaction). Therefore, this study investigated the value of e-service on user's satisfaction as e-government services provided by MOTI from citizen's perspective. Thus, the purpose of this thesis are threefold. One, the study adopts a comprehensive framework to assess users' satisfaction with e- services; two, the study develops tests, refines and validates a scale to assess citizen's satisfaction; and three, it proves the relationships among constructs in the proposed framework, associated manifest variables and user's satisfaction by comparing and contrasting with related works. Therefore, this study answers the following research questions and open up new directions for future research in evaluating an e-service value.

1. How e-service create value for users?
2. What are the key performance indicators (KPIs) that influence e-service satisfaction?
3. How do we assess the value of e-service?

1.4 Objectives of the Study

1.4.1 The General Objective

The main objective of this study is to investigate the value of e-government services using a conceptual framework drawn from literature.

1.4.2 The Specific Objectives

1. To examine the value of e-government through user's perspective.
2. To identify impact of cost on user satisfaction in e-service platforms.
3. To identify the effects of e-government service benefits on citizens satisfaction.
4. To identify the power of e-service associated risks through user perspective.
5. To identify e-service related opportunities that create user satisfaction.
6. To examine empirically the factors that affecting e-government services satisfaction based on the proposed framework with Ethiopian context.
7. To provide an additional proof of the relationships validity of the COBRA (cost, opportunity, benefit, and risk analysis) framework.

1.5 Significance of the Study

E-service involve many participants who have different interest that can have an impact on success. Among these participants, citizens are the main active participants of government activities. Accordingly, their satisfaction plays a great role in e-service success. Evaluation of e-service value is a complex process because it depends on citizen's acceptance that is difficult to be realize and measure. With the constant pressure of investment on e-government, evaluating the performance of e-government and satisfaction level becomes urgent (Deng & Kanishka, 2010). To the government, it has provided an effective way to reduce the operating costs for government and at the same time, to enhance the administrative ability of government (Gorla, Somers, & Wong, 2010). Evaluation of the performance of e-government has provided an opportunity for citizen to participate in the e-government services, to increase the availability of government information, and to improve the delivery of public services, which is beneficial to meet the citizens' needs at all levels of government operations.

This study has done to signify by identify value of e-government platforms implementation on creating opportunities and benefits and reducing cost and risk related to the e-service. In addition presents a number of significant importance to the field of e-government. The first one is to choose a framework that can inform e-government value in creating user satisfaction in the developing country like Ethiopia. On the other hand, this research identify the KPIs of e-government services and its citizen satisfaction key issues. Those in turn used to provide a clear image of what needs to be improved from government side to the citizens of the country to create democratic country. The

results also help the management, decision makers and developers to assess the factors, which contribute positively to the e-government portals to provide citizens oriented service. Due to the lack of studies on evaluating the value of e-government services the study have great significance to the developing countries in formulating their e-government development policies and strategies.

1.6 Scope of the Study

MOTI introduces OTRLS portal to serve the business community‘s need for information and trade services such as business registration, licencing, loans, penalties etc. Therefore, scope of this study mainly on assessing the value of e-Trade portal that is web based informational and transactional platform that provided by FDRE MOTI from user’s satisfaction side. This study aims to investigate how digital service creates value in public services focusing on the e-Trade platform. More specifically, the starting point was the government-to- business (G2B) relationship between e-government service providers. The study regarding time and area coverage delaminated to e-Trade portal users from Addis Ababa and around and time wise users starting from inauguration period to one-month service requesters. In addition, the study concentrates on based on Ethiopian revenue and customs authority (ERCA) grouping scheme type “A” tax payers and private limited companies (PLC). According to MOTI ICT directorate still middle level and small-scale taxpayers were not start their operation using this platform. However, its satisfaction and their assumption about the e-Trade portal are crucial to all forms of companies. As the purpose of this study is to assess the e-service, satisfaction factors that creates value for users using COBRA model drawn from related studies.

1.7 Organization of the Study

This thesis organized into five chapters described as follows.

Chapter One introducing e-service and e-government services, describing the motivation of this study, problem statement definition, objectives of the study, significances of the research, scope, and main issues to conduct this study are focus points of this chapter.

Chapter Two exhaustively review about e-service related issues, e-service related works and their trends in Ethiopia. Brief explanation of related evaluation models in the area presented and relevant satisfaction evaluation model chosen for the study.

Chapter Three presents the detail of proposed research model along with a research method and hypothesis formulation. The chapter specify the target population to collect and analyse data with data collection procedure and describes ethical concerns, validity, and reliability of the study.

Chapter Four describes all about the thesis findings and discussions based on the empirical tests on the measurement and structural models by applying SmartPLS software. This chapter also presents evaluation of measurement and structural model, which is the detail of reliability and validity tests, discriminant validity, predictive relevance, coefficient of determination, average variance extracted, goodness of fit index and significance test (t-value and p-value). The research questions answered and the four hypotheses tested discussed by comparing and contrasting results with the existing literature.

Chapter Five conclude all the key points of the study, the implication of the study, limitations of the study, presents some recommendations and future research directions. Finally, the study ends with appending **Reference** lists and **Appendix**.

CHAPTER TWO

2 LITERATURE REVIEW AND THE RELATED STUDIES

2.1 The Chapter Overview

To describe the necessity of this thesis, the chapter started by putting the definition and dimensions of e-service, e-service value, its assessment and the current trend in Ethiopia. To express the maturity of e-services in Ethiopia context, MOTI e-Trade portal used as case to assess. The next part of this section is the intensive review on variety of e-service value assessment and evaluation theories and models from that one selected as conceptual model for this study briefly described in the next subsequent chapter to build the research design. This chapter extend up to marking of related works in the area from the world, the continent and the country perspectives.

2.2 Definition and Dimensions of E-governance

Electronic government refers to the implementation of information technology (IT) to advance the competence, effectiveness, intelligibility, and accountability of public governments (Deng & Kanishka, 2010). The main objective of e-government is not only to obtain information, but also to engaging citizens with frequent and recurring intention to use of the e-services (Wang & Liao, 2008). The author (Sakowicz, 2003) broadly, defined as "electronic government can include all ICT to facilitate government operations, to participate citizens actively, and provide government services as per need". The assessment of such e-service becomes a challenging task due to several factors related to e-government information and communication system (e-system) as well as stakeholders (Floropoulos, Spathis, Halvatzis, & Tsipouridou, 2010). Each stakeholder has different interests and objectives that affects users' satisfaction and e-service take up (Rowley, 2011). Thereby, broader approach embrace the whole range of governance and administrative projects including e-services, e-democracy, e voting, e-justice and in some way even e-education or e-healthcare (Barbarian, et al., 2006). Clearly, e-government is much more than gathering the information, downloading files or making online transaction (Rowley, 2011). According to (Sakowicz, 2003) and within above broad definitions, we can identify four dimensions of e-governance.

2.2.1 Dimensions of E-governance

E-services:

This term e-service describes the tack up of electronic delivery for government information, programs, strategies, operations and services. These are available online "24h/7days based". It also refers to electronic service delivery (ESD) and such expression as 'one-stop service centers" (Sakowicz, 2003). The latter describes situation in which citizen needs met through a single contact with the government (Rowley, 2011). In many cases, e-service assumes a modernised front office not necessarily redesigned back office capacity (Barbarian, et al., 2006). At the same time, e-services emphasise innovative forms of citizen participation and offer services that provides serious valuation of citizens as customer of administration. The strategic problem is to deliver services to members of public along with dimensions such as quality, convenience, minimum risk and cost. This study concentrates on e-services dimension of e-governance that offered by MOTI.

E-management:

While e-services focus on extra-organizational relations, e-management (e-administration) refers to the behind-the-scene IS supporting the management and administrative functions of public institutions, including data and information management, electronic records maintenance and inter-departmental and cross-departmental flow of information (Lincoln & Wilson, 2017). E-governance initiatives within this domain deal particularly with advancing management of government, from providing business processes to improving cross-departmental flow of information (Rowley, 2011). Effective usage of ICT requires a new organizational advancement in addition to new staff teams focused on performance, customer services and response to citizen request. The solutions to challenge of e-management lie in the implementation of services designed around possible life events or life episode approach and the adaptation and integration of back-office processes (Sakowicz, 2003).

E-democracy:

In framework of e-democracy, ICT used as a tool to help set agendas, establish priorities, make important policies and participate in their implementation in a deliberative way. Is the most difficult to generate and sustain feature of e-governance (Sakowicz, 2003). It refers to activities that increase citizen participation including virtual town meeting, open meeting, cyber campaigns,

feedback polls, public surveys and community forums (such as through e-consultation, e-voting) (Sakowicz, 2003). In short, if e-government is successfully implemented new involvement of citizens may emerge. They are able to form the Internet biased alliance to respond to various issues and achieve economic and social objectives and their common goal (Sakowicz, 2003).

E-commerce:

It linked with business side of government interaction with purchasers, producers and consumers. In e-commerce, the exchange of money for goods and services implemented over the Internet. For example, citizens paying taxes and utility bills, renewing vehicle registrations, paying for recreation programs, government buying offices supplies, and auctioning surplus equipment (through online purchasing, e-procurement) (Sakowicz, 2003).

2.2.2 Types of E-government

Formerly, providers were generally providing in-person service, face-to-face for their customers. Since the rapid advancement of ICT and, IT applications have become popular in different departments. Therefore, a new method of delivering services appeared that offered more convenience and efficiency for both suppliers and consumers. It provided services through an online computer network, which is the Internet. Thus, the concept of e-service first initiated. The implementation of ICT plays great role for all stakeholders (government, citizens, and businesses). Therefore, the e-governance concept created to deliver services to citizens quickly and smoothly apparent with their requirements. E-governance services mainly include online health services (e-health), online training (e learning), customs services (e-custom), and tax declarations services (e-tax) etc. These all grouped in to the following categories.

1. **Government-to-Citizen (G2C)** E-government mainly focuses on making data available to citizens on the web. This is allows to provide services as a citizen-centric e-government when governments find a way to give online services sorted out around citizen needs.
2. **Government-to-Business (G2B)** E-government focuses on strategies to utilize ICTs to facilitate government obtaining goods and services from the private sector and to manage transactions with private organizations.

3. **Government-to-Employee (G2E)** in this e-government type, the concentration is on relations among employees within government to manage internal processes, enhance the business processes internal adequacy, and enhance organization management.
4. **Government-to-Government (G2G)** this type focuses on providing services to other governments entities. This includes managing activities with stakeholders from national and local government as in humanitarian or crisis response case and emergency times.

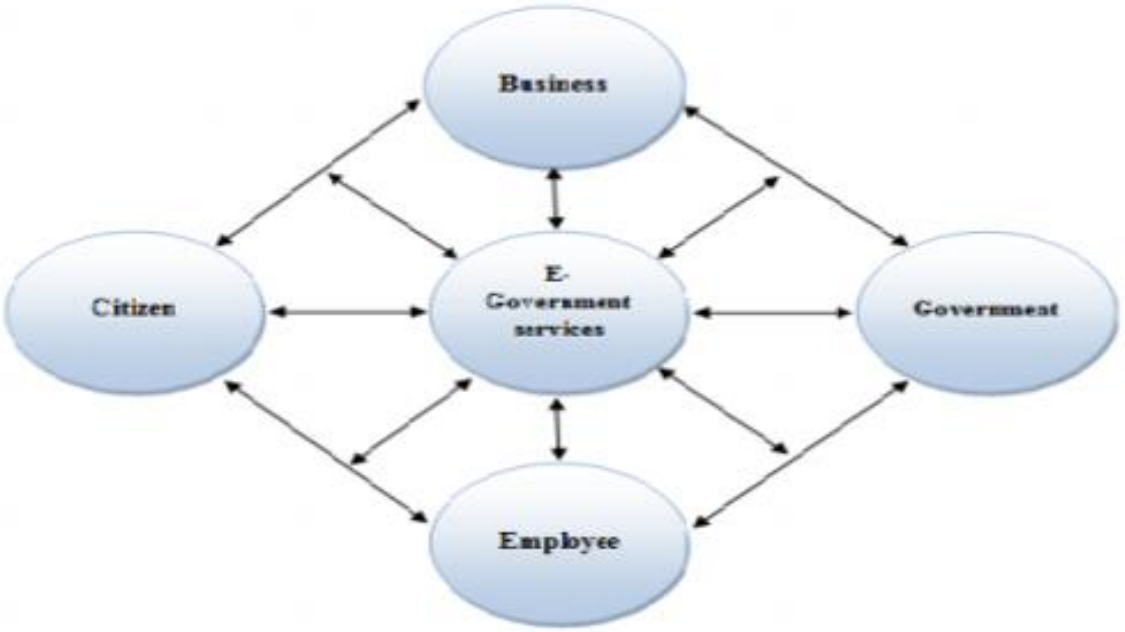


Figure 2.1 Types of e-government relationships (Sakowicz, 2003)

2.3 E-Service Provided by Ministry of Trade and Industry

E-Government is comprehensive ICT solution constituting different modalities accordingly. According to (FDRE M. , 2019) the national ICT policy and strategy of Ethiopia 2009, the e-government strategy of the country expected to target Government-to-Government (G2G), Government-to-Business (G2B), Government-to-Citizen (G2C), and Government-to-Employee (G2E) programs. As mentioned above the scope of this study focuses on the modality of Government-to-Business (G2B) where e-interaction between government and Business.

The government of Ethiopia aiming to make government services more accessible online, reduce cost of transactions and improve turnaround time to citizens, employees, businesses, and governmental & non-governmental organizations, initiates this platform (MoTI, 2021). E-Trade

(OTRLS) platform that have introduced by MOTI allows the user to obtain miscellaneous services regarding commercial registration, trade licence, and trade name amendment etc. According to (MoTI, 2021) The portal is a one-stop portal for e-government services that improves ease of doing business in Ethiopia through the automation of essential government services leveraging information and communication technologies. It provides a common platform and generic tools for online transactional services. The portal's role as a platform is the provision of centralized information about MOTI and government services by reducing procedure, time and cost. In addition, it facilitates customer needs for a particular government service, track the status of service requests, and provide important alerts. All the platform functions have labelled clearly to attract the user and simplify the procedure as much as possible. All required forms and supplementary documents needed provided as per each service in order to facilitate the one-stop service with ease.

1. Commercial Registration: with our online platform, you can get new commercial registration or cancellation of your commercial registration. Amendment or replacement of lost/ dilapidated commercial registration certificate with a new one is also possible on our website. Prerequisites and needed documents all placed in the link and the service process accessed using your username and password.
2. Trade Licence: you can obtain a new trade licence as well as amend, renew, cancel, or replace trade licences easily through our OTRLS platform by following the easy steps indicated at the link of each service needed.
3. Trade Name: OTRLS platform can give you easy access to services to allow you to obtain a new trade name, replace an existing one or cancel previous trade name data through the easily accessible link on its page.

All procedures must contain all required documentation and data, which labelled red on the website. These required documents completed to finalize the required service. For additional information regarding or beyond the website, you can call or email our support team whose address is provided at the bottom of the site. The e-Trade platform enables its users a range of service related with registration and licencing a business including but not limited to verification and registration of company as well as trade name acquisition, renewal of trade licence, and cancelation of trade name. OTRLS is user-friendly system believed to modernize service delivery while reducing the time and effort spent by businesses. Traders have access to commercial registration

and licencing services at home or from their home or location without having to go to the MOTI. MOTI works with banks, including the commercial bank of Ethiopia (CBE) (MoTI, 2021). Some features of the e-Trade portal is appended in **Appendix G**

2.4 Electronic Service Value Theories and Models

E-services includes the use of electronic delivery for government information, programs, strategies and services. According to (Sakowicz, 2003)e-government defined as 'the delivery of online government services, which provides the opportunity to increase citizen access to government, reduce government bureaucracy, increase citizen participation in democracy, and enhance agency responsiveness to citizens needs'. The emphasis of delivering government services online relates to the definition of e-service as given by (Hoffman, 2003). E-service is a service conducted through the Internet that completes tasks, solves problems, and conducts transactions (Hoffman, 2003). Delivering quality e-government service for citizen's boosts public value, which augmented by user's positive experience of the public service (Kelly, 2003) and (DeLone & McLean, 2003). Given that modern public managers view the public as customers, who pay rates and taxes and should receive value in return, they should aim to satisfy citizen's demand for high quality e-services (Magoutas, Chalaris, & Mentza, 2009).

Electronic government forms the foundation for digital or e-service society and depends upon a sound technology infrastructure. However, e-service is not a technical exercise, but rather an attempt to improve the political and social environment and to drive a fundamental change in the ways in which functions are performed (Beynon-Davies, 2005). The introduction of ICT in order to automate public sector functions and introduce e-service will not deliberately create a better or more open government unless it based on policies to promote the effective utilization of technology (Mehdi, 2005). E-service initiatives inevitably need to take into consideration on challenges such as new models of policy formulation, alternative forms of citizenship, different patterns and trends of relationship, new solutions for economic development, and alternative approaches for connecting people to the political process (Mehdi, 2005).

According to (Osman, et al., 2011) there have been many attempts by e-government study scholars and practitioners alike to present comprehensive framework to evaluate the success of e-government services from a citizen's perspective. An intensive investigation of works on

conceptual frameworks to assess stockholders satisfaction with e-government services reveals a number of studies (Zahir, 2008), (Venkatesh, Thong, & Xu, 2012). In particular, SERVQUAL (Parasuraman, Zeithaml, & Berry, 1988), national customer satisfaction indices (NCSI) (Fornell, Johnson, Anderson, Cha, & Bryant, 1996), the IS success model (DeLone & McLean, 2003), and the value measurement model (VMM) (Foley & Alfonso, 2009). However, these frameworks are the new adapted versions of IS or e-commerce adoption models (Osman, et al., 2011). In addition serve as an outline for the COBRA model (Osman, et al., 2011), (Zahir, 2008), and (Osman, et al., 2014). Nonetheless, the e-services value assessment process differs highly from the traditional IS or ecommerce process (Osman, et al., 2011). An intensive review of the related works (Rowley, 2011), (Jaeger & Bertot, 2010), (Verdegem & Verleye, 2009), (Irani, et al., 2012), and (Wang & Liao, 2008) done by (Osman, et al., 2014) on conceptual models to evaluate citizens satisfaction on e-government services areas from the evaluation perspectives these models and frameworks classified into the four categories.

2.4.1 The Research Variables Operational Definition

In order to develop an operational definition for each variable included in the research model, first the relationship between e-service value and user satisfaction must be cleared. The dimensions of e-service value were determined based on previous empirical work that provided strong ground. The operational definition of e-service value dimensions was developed based on previous conceptual and empirical studies that were carried out on the research topic (Foley & Alfonso, 2009) and (Zolkiewski, et al., 2017). Four dimensions of e-service value were identified from the literature as independent variables (Zahir, 2008), (Irani, et al., 2012), and (Osman, et al., 2014). The same procedure was followed to operationalise the customer satisfaction variable as a dependent. Many e-customer satisfaction studies were consulted to operationalise this construct variable (Colesca, 2009), (Chen, 2010), (Zahir, 2008), and (Osman, et al., 2014).

Customer value is a multidimensional category (Zolkiewski, et al., 2017)argue, currently, organizations interact and co-create value with consumers and other stakeholders, “value is not something that is delivered to the consumer; rather it is created by the consumer when using the service, i.e. value-in-use.” The research problem is concerned with examining the relationship between the e-service values i.e. value in use dimensions and customers’ satisfaction in the MOTI that have e-trade with their customers. Although customer value is defined in many different ways

(Piotr, Doligalski, & Sylwia, 2013), in frequently used definitions the authors agree that it can be estimated by the perceived surplus of all the benefits over all the costs (Piotr, Doligalski, & Sylwia, 2013). According to (Piotr, Doligalski, & Sylwia, 2013), customer perceived value is "the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given." In turn, (Zolkiewski, et al., 2017) argues that "value is perceived by customers in their everyday activities and processes and in interactions with suppliers or service providers when consuming or making use of services, goods, information, personal contacts, recovery and other elements of ongoing relations." Customer value is present when a customer perceives that they will get a certain value from a product or service that they intend to buy.

Customer satisfaction is a cumulative construct that is affected by service expectations and performance perceptions in any given period and is affected by past satisfaction from period to period. (Ha, Swinder, & Muthaly, 2010)Argued that although satisfaction is recognised as an important facet of marketing, there is no general agreement of how the concept should be defined. On the other hand, gauges the level of satisfaction a customer feels after buying a product of using a service. This lack of a concise definition further validates the supposition that satisfaction does not mean the same thing to everyone. Each customer has different expectations so it is hard to define customer value and satisfaction.

2.4.2 E-government Value Measurement Models (VMM)

The VMM framework is a cost-benefit and risk analysis conceptual model designed to evaluate the dimensions that are hard to measure in a traditional financial ROI study (Foley & Alfonso, 2009). It perceives e-service success as a balance among value (benefit), cost, and risk (Osman, et al., 2011). Therefore, the evaluation based on this model consists multidimensional evaluation of values such as direct user value, social/public value, government financial value, government operational/foundational value, and strategic/political value (Foley & Alfonso, 2009). These values evaluated quantitatively through a set of dimensions. Accordingly, it becomes possible to make a decision for each dimension. Hence, it is not only about attaining benefit or reducing cost; it is about doing both in an objective manner (Foley & Alfonso, 2009).

According to (Foley & Alfonso, 2009) VMM framework includes five value factors: direct user value; social/public value; government financial value; government operational/foundational

value, and strategic/political value. It starts with developing a set of values for each factor including costs, risks, tangible returns, and intangible returns for each service (Foley & Alfonso, 2009). These values evaluated through a set of dimensions/ elements, and then assigned scores to each dimension /element. Accordingly, it becomes possible to give yes/no decisions in an objective and repeatable manner for each dimension. The VMM framework would allow balancing among different values (cost; risk; return) among e-government services (Foley & Alfonso, 2009). Moreover, the VMM model designed to deliver for policy makers with qualitative data that help in assessing the potential benefits of using e-services (Foley & Alfonso, 2009). Although the VMM published studies, shed lights and draw attention to focus on performance of e-government services from both users and government perspectives. According to (Osman, et al., 2014) none of the VMM published studies considered monitoring and assessing performance at an individual e-service level or across number of e-services. Therefore, from the VMM model this study adopts direct user value from the concept of value factors according to (Foley & Alfonso, 2009).

2.4.3 E-government Success Models

E-government success (or maturity) models introduced by (McLean & DeLone, 1992). The D&M model then updated by (DeLone & McLean, 2003) to measure success of any e-commerce IS. It consists of six dimensions of success factors service quality, information quality, system quality, user satisfaction, system use, and net benefits. Information quality has characteristics such as accuracy, relevancy, precision, reliability, completeness, and currency of provided information. System quality has referred to as ease of use, user friendliness, system flexibility, usefulness, and reliability. Based on this evaluation model, any online services evaluated in terms of information, quality, and service quality (DeLone & McLean, 2003). These dimensions affect the subsequent use or intention to use and user satisfaction, because of using the e-services, certain benefits achieved (DeLone & McLean, 2003). The benefits will affect (positively or negatively) stakeholder's satisfaction and further use of the e-service or IS. There are many researchers who adopted D&M model to assess the e-government success including (Chen, 2010), (Wang & Liao, 2008), (Floropoulos, Spathis, Halvatzis, & Tsipouridou, 2010), and (Jang, 2010). In the IS success model, the qualities of information, system, and service serve as great motivators to use the e-service that will highly affect user satisfaction (Jang, 2010). Accordingly, the qualities of information, system, and service will affect the subsequent use of e-services. (Jang, 2010) Apply

the updated D&M framework to evaluate e-government procurement (e-GP) system success. Results showed that information quality, system quality, and service quality had a significant effect on individual performance through the usage and user satisfaction with an e-GP system (Jang, 2010). Unlike VMM models, the D&M models pay more attention to the quality of technology and user benefits with less attention to other dimensions such as cost, and risk that are very important to VMM users' satisfactions (Zahir, 2008).

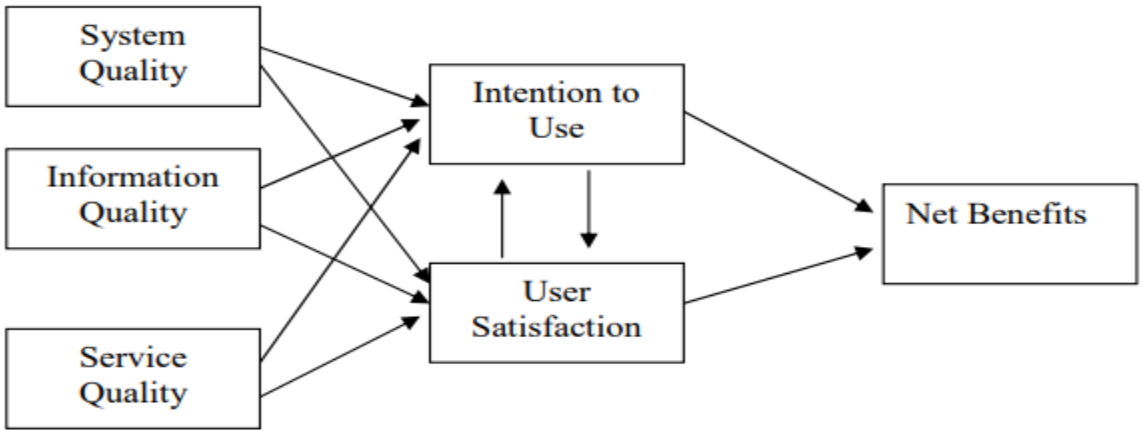


Figure 2.2 DE Lone and McLean IS Success Model (DeLone & McLean, 2003)

2.4.4 E-government Service Quality Models

Under the name of SERVQUAL model (Parasuraman, Zeithaml, & Malhotra, 2005) proposes e-government service quality model (Osman, et al., 2011). This framework designed to assess e-service quality (Mentzas & Papadomichelaki, 2009). According to (Parasuraman, Zeithaml, & Malhotra, 2005)SERVQUAL model consists of 22 service quality measures categorized in five elements. "Tangibles (appearance of physical facilities, equipment, personnel, and communication materials); reliability (ability to perform the promised service dependable and accurately); responsiveness (willingness to help customers and provide prompt service); assurance (knowledge and courtesy of employees and ability to convey trust and confidence); and empathy (provision of caring, individualized attention to customers)" (Zeithaml, Parasurarnan, & Malhotra, 2002). Based on this model, the quality of these elements is the main driver of customer satisfaction. User satisfaction defined as the difference between perceived quality and expected quality (Mentzas & Papadomichelaki, 2009).

There are huge numbers of research works that use, expanded or updated the SERVQUAL model. This model highly expanded and updated by different scholars and new models proposed to measure user satisfaction with e-services (Osman, et al., 2011). (Parasuraman, Zeithaml, & Malhotra, 2005)Proposed the E-SQUAL model, (Balog, Bàdulescu, Bàdulescu, & Petrescu, 2008)proposed e-ServEval, and (Mentzas & Papadomichelaki, 2009) proposed the eGovQual model. For instance, many scholars expanded the SERVQUAL model the resulting model includes five quality dimensions corresponding to the ones of the initial SERVQUAL model, with their meaning adapted to the specificities of the websites (Osman, et al., 2014). Tangibles (appearance of the website, navigation, search options, and structure). Reliability (ability to judge the trustworthiness of the offered service and the organization performing the service). Responsiveness (willingness to help customers and provide prompt service). Assurance (ability of the website to convey trust and confidence in the organization behind it with respect to security and privacy) and Empathy (appropriate user recognition and customization). Later on, (Parasuraman, Zeithaml, & Malhotra, 2005) developed and tested E-SQUAL as a new model to evaluate of e-service website quality. E-SQUAL is composed of 22-item scale of four dimensions efficiency, fulfilment, system availability, and privacy.

2.4.5 The Customer Satisfaction Index (CSI)

CSI designed to evaluate customer satisfaction with the provision of private and public sector services. It consists of a set of causal relationships that link user expectation, perception of quality and perceived value as indicators of user satisfaction, and outcomes and user complaints as consequences. Consequently, this model designed to assess user satisfaction with government services (Fornell, Johnson, Anderson, Cha, & Bryant, 1996). Then, the outcomes component of the CSI model modified to measure user satisfaction with the provision of e-government services (Van Ryzin, Muzzio, Immerwahr, Gulick, & Martinez, 2004).

The outcome of user trust replaces the price-related outputs found in the private sector model (Floropoulos, Spathis, Halvatzis, & Tsipouridou, 2010). In addition, in the private sector, maintaining user's loyalty and reducing customer complaints is an important goal in maintaining profits, and the main objectives of government services is to gain customer trust (Floropoulos, Spathis, Halvatzis, & Tsipouridou, 2010). The one main driver overall satisfaction is time cost which is root of COBRA model.

Figure 2.3 CSI model for COBRA (Van Ryzin, Muzzio, Immerwahr, Gulick, & Martinez, 2004)

Finally, the above existing frameworks are not satisfactory for comprehensively evaluating the multidimensional and multi participant influences that e-services encapsulate (Zahir, 2008), (Venkatesh, Thong, & Xu, 2012)**,** (Osman, et al., 2011). According to (Osman, et al., 2014) the limited scope of analysis (e-service quality, IS success constructs) and the resulting context-specificity significantly reduces the possibility of generalizability of these models in an e-government services context. Hence including both D&M and VMM measurement factors would provide an inaccurate understanding of overall e-government success to be verified as intended in the current work of (Osman, et al., 2011). According to (Osman, et al., 2014) COBRA framework that psychometrically and systematically assesses e-government service success from a user perspective, as the SERVQUAL, NCSI, and IS success models do for e-commerce.

How various issues influence user satisfaction, the available methods such as SERVQUAL and e-government satisfaction index framework only account for the e-service quality that includes some benefit and risk, but ignores cost and opportunity aspects (Osman, et al., 2014). Whereas, the IS success model accounts for (Osman, et al., 2014) user benefits and part of opportunity aspects but ignores cost and risk. Hence, these models, among others, do not capture the full spirit of user satisfaction (Osman, et al., 2014). Therefore, there is a need to rectify the limitations of those frameworks and propose a holistic evaluation framework for e-government services evaluation based simultaneously on benefits, costs, and risks to users of using e-government services (Zahir,

2008). The various manifested elements grouped into a new quantitative analysis framework consisting of four main constructs cost, opportunity, benefit, risk, and analysis (COBRA) by analogy to the well-known SWOT qualitative analysis framework (Osman, et al., 2011). The proposed holistic evaluation model assesses a user's satisfaction in terms of the users' cost-benefit and users' risk opportunity from engaging with an e-service. The COBRA framework proposed to validate the measurement scale of a set of measured variables and their relationships to users' satisfaction on a sample of Turkish e-services users (Osman, et al., 2014).

2.4.6 The COBRA Model as Evaluation Model

Existing methodologies indicates that the VMM model based on a rational thinking of policy makers using a fixed weight approach assigned to dimensions for evaluation (Osman, et al., 2014). This rationality encourages the advancement of e-government services from users' perspectives based users' costs, benefits and risks used separately for assessment but not simultaneously in previous performance assessment models. These evaluation frameworks overlocks the value of opportunities and impact that gained from using e-services. The SERVQUAL based framework accounted for the service quality of system that includes some of benefit and risk aspects, but it overlocks the cost and opportunity aspects of e-service (Osman, et al., 2014). Whereas the D&M updated models (DeLone & McLean, 2003) account for users' benefit and ignored the cost, risk, and opportunity.

Few user-centric models recently recommended addressing the limitations of the previously four mentioned categories. (Rowley, 2011) Argued that any successful e-government service should satisfy the following user benefits easy to use, accessibility and inclusivity, confidentiality, and privacy. (Magoutas, Chalaris, & Mentza, 2009)Proposed SALT (Self Adaptive quaLity moniToring) framework to control the user satisfaction and the quality of e-government services. (Jaeger & Bertot, 2010) Argued that any attempt to launch user-centred e-government services must account for a number of essential dimensions. According to (Jaeger & Bertot, 2010) these elements range from basic issues related to the ability to use e-government, to build trust and to tie e-government to established social and institution requirements. Such as access needs, information and service needs, technology needs, information and technology literacy, government literacy, availability of appropriate content and services, usability and functionality, meeting user expectations, information concerns, social institutions providing access to e-

government, trust, e-government lifelong e-government usage, and accepting how users actually use e-government.

Consequently, (Irani, et al., 2012) the evaluation framework builds on previous frameworks and extended them to develop a holistic assessment framework for e-services. The various fragmented performance factors are now integrated and new updates based on the following observations on citizen's satisfaction namely the users' experience during the execution and interaction with an e-service, the efficiency of the e-system, the effectiveness of the provided e-service and the post-impact of the provided e-service, and expectation of real users. The new model based on theoretical causal-effect relationships between the cost-benefit analysis and the risk-opportunity analysis on the one hand, and users' satisfaction on the other hand (Osman, et al., 2014). Figure 2.4 shows the five elements of the new model called COBRAS: Costs, Opportunities, Benefits, Risks Analysis for Satisfaction.

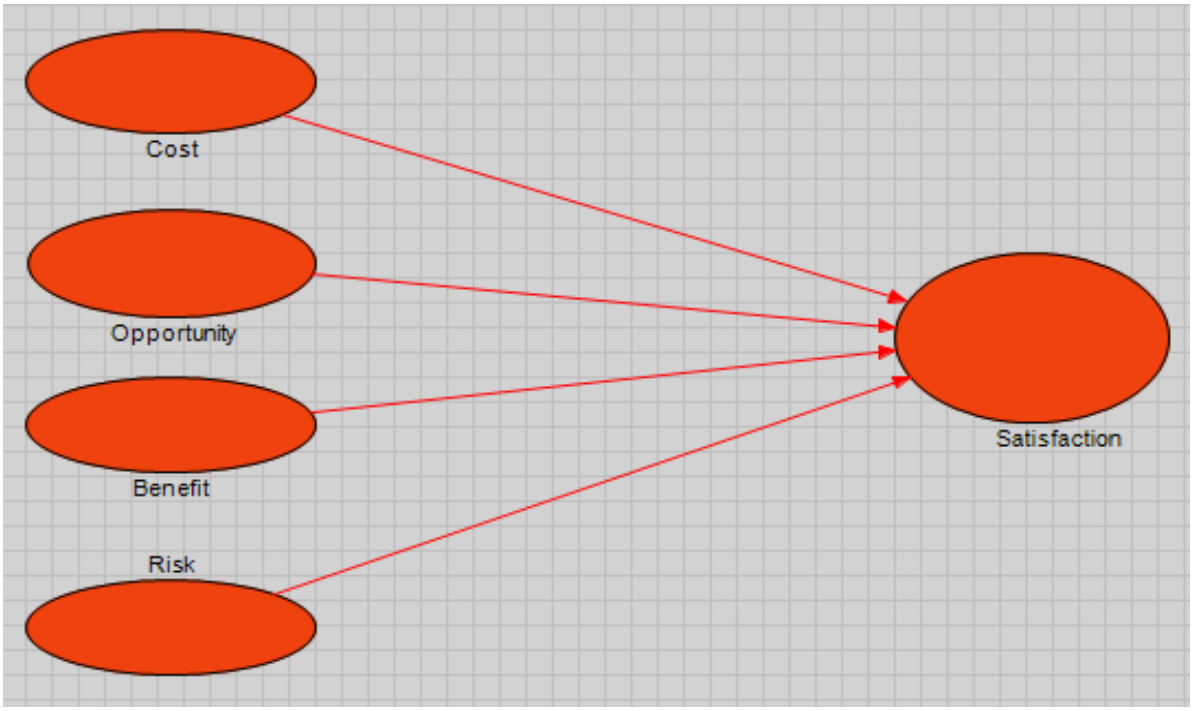


Figure 2.4 The COBRA illustration model for user's satisfaction (Osman, et al., 2011)

COBRAS designed by analogy to a strategic management technique known as SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis (Osman, et al., 2011) proposed by (Jackson, Joshi, & Erhardt, 2003). SWOT analysis recently used in combination with data envelopment

analysis to reduce the subjectivity of weight assignments in evaluation models like VMM (Fornell, Johnson, Anderson, Cha, & Bryant, 1996). Moreover, SWOT analysis often used in academia for development of business projects and improvement of operations (Jackson, Joshi, & Erhardt, 2003). In COBRA model e-service strengths correspond to benefits, weaknesses to costs, threats to risks and opportunities are the same (Osman, et al., 2011). Normally, the costs and benefits are internal factors to an e-service whereas the opportunities and risks are external factors to the e-service (Osman, et al., 2014) many from competitors. This study provides an insight and critical investigation of the most critical factors and their manifested variables for user satisfaction in the provision of e-service. Based on the recently inaugurated system of MOTI e-Trade portal.

2.4.7 The COBRA Model Constructs and Their Roots

The COBRA framework dimensions have their roots in social science theories such as: social exchange theory (SET), expectation-confirmation theory (ECT), and strategic management theories such as SWOT analysis theory (Osman, et al., 2014). Given these relationships, user satisfaction can gained through a trade-off between users' cost and risk with benefit and opportunity. Thus, e-government service success and sustainability strongly shaped by the extent to which the government can provide such balanced service. The COBRA framework can provide a strategic quantitative assessment and analysis that complements the strategic qualitative approach of SWOT strategic management analysis (Osman, et al., 2011). Short term cost-benefit economic and financial values and can be integrated with long-term risk and opportunity societal and impactful values to provide a thorough analysis to assess public and private organization shared values beyond classical assessment approaches (Weerakkody, Irani, Lee, Osman, & Hindi, 2013). The social science theories that is roots of the COBRA framework described below.

2.4.7.1 Social Exchange Theory (SET)

SET proposed by (Blau, 1964) to explain social relationships using economic concepts such as cost and value (benefit). According to the theory, people invest in their social interaction, if and only if their input (cost) into such an interaction is less than the value (benefit) they may get out of it (Blau, 1964). The greater the benefit gained is, the more a person is satisfied and thus invests more in an individual relationship. Fundamentally, within the e-service context, SET explains the role of cost, benefit, risk, and opportunity in a user satisfaction determination. Consequently, the cost and risk would represent the user's inputs when using an e-service interaction, whereas the

benefit and opportunity would represent the value of such interaction with the service delivered by respective organization. By analogy, if the benefit and opportunity values were greater than the cost and risk values, then an e-service user would be more satisfied and more likely to continue using such e-service; otherwise, the user will not re-use (Osman, et al., 2011).

2.4.7.2 Expectation-Confirmation Theory (ECT)

ECT proposed by (Oliver, 1980) to examine consumer satisfaction, repurchase intention and reuse behaviour. Based on this theory, consumers compare their initial expectation prior to purchase with the actual performance after a period of initial consumption (Balog, Bàdulescu, Bàdulescu, & Petrescu, 2008). Accordingly, the users are satisfied if their initial expectation fulfils the actual perceived performance (Oliver, 1980). In e-service context, users have an initial expectation about cost, benefit, risk, and opportunity (Irani, et al., 2012)if they find indicators that the actual e-service fulfils their expectation, then users' satisfaction level will be high and they will probably intention reuse the service. The following figure shows expectation and perceived (actual) performance confirms satisfaction from this COBRA model picks satisfaction construct.

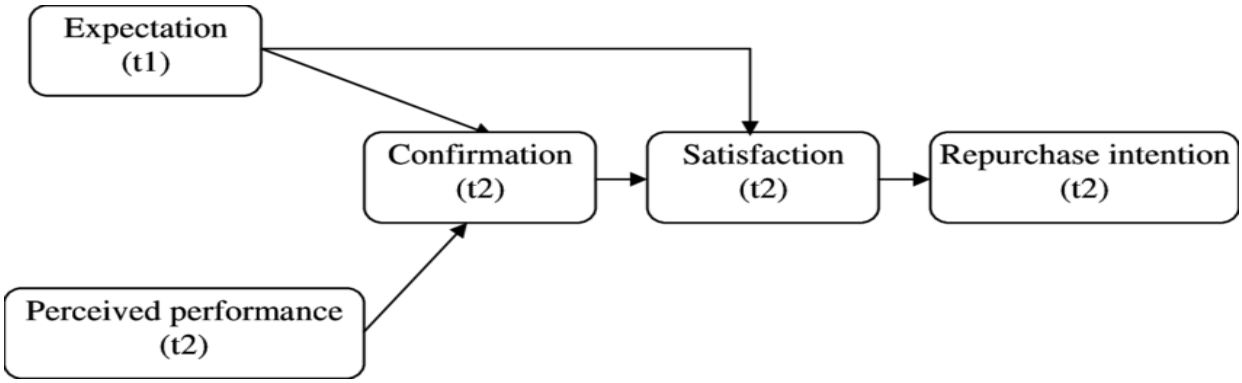


Figure 2.5 ECT Theory the Source of the COBRAS Satisfaction Model (Oliver, 1980)

2.4.7.3 SWOT Theory

The SWOT analysis designed in the early 50's as a strategic planning technique to assess any company, service or product compared to their competitors, other services or products, (Jackson, Joshi, & Erhardt, 2003). This theory include both internal and external factors that may have an influence on company decisions. Simultaneously, companies need to evaluate their internal environment (Strengths and Weaknesses) with their external environment (Opportunities and Threats) to identify and exploit new opportunities before their competitors do. Users tend to use

e-services if the gained benefits and opportunities from using online service are higher than those from traditional government are. The goal of government and organizations is reaching citizens with less cost and risk and with valuable benefits and opportunities. The strong analogy of COBRA model that is SWOT analysis represented by the following diagram.

Figure 2.6 The SWOT diagram the source of the COBRA (Jackson, Joshi, & Erhardt, 2003)

2.5 Related Works

Managerial procedures will easily decrease the cost and improve the quality and effectiveness of the performance of public organizations. Additionally, the electronic services considered as a revolution to eliminate the bureaucracy (Sulieman, Shelash, & Saleh, 2016). Among them G2B It can bring significant importance and outshines efficiencies to both governments and businesses. G2B include various services exchanged between government and the business sectors including distribution of policies, memos, rules, and regulations (Heeks, 2008). Business services offered include obtaining current business information, new regulations, downloading application forms, lodging taxes, renewing licences, registering businesses, obtaining permits, and many others (Grimsley & Meehan, 2007). The services offered through G2B transactions also play a significant role in business development, specifically the development of small and medium enterprises (Heeks, 2008). G2B modality actively drive e-transaction initiatives such as e-procurement and the development of an electronic marketplace for government purchases and carry out government

procurement tenders through electronic means for exchange of information and goods (Belachew, 2010). This system benefits government from business online experiences in areas such as E-marketing strategies (Belachew, 2010).

User acceptance of e-services is below government anticipations, while the expected results in terms of reducing costs and increasing the effectiveness of public administration are still in early stages (Anteneh, Belachew, & Lessa, 2011). According with (Rasyid & Alfina, 2017)evaluating the quality of e-services in e-government has attracted the lenses of many scholars in the past few years (Papadomichelaki & G, 2012), (Alanezi, Kamil, & Basri, 2010), and (Sharma, Al-Shihi, & Govindaluri, 2013). The research conducted by (Papadomichelaki & G, 2012)e-GovQual, a multiple-item scale for evaluating e-service quality was proposed. While (Alanezi, Kamil, & Basri, 2010)updated already existed framework (SERVQUAL) to evaluate the quality of e-services in e-government. Another work by (Sharma, Al-Shihi, & Govindaluri, 2013)conducted to identify what key factors that affect the quality of e-services in e-government sites in Oman. In Indonesia, few studies that assess e-service on such as the research conducted to assess the effectiveness of e-service on local government (Sharma, Al-Shihi, & Govindaluri, 2013). The COBRAs framework is a comprehensive model that evaluates user's satisfaction with e-government services (Irani, et al., 2012). According to (Irani, et al., 2012) the grounded theory research approach applied to develop COBRA framework in which an existing related works extensively reviewed to know existing e-service assessment models is identify the various fragmented success factors or KPIs.

It is worth noting that since the early work undertaken by (Zeithaml, Parasurarnan, & Malhotra, 2002) research on electronic service quality has grown considerably over the past decade (Zeglat, Dia, & Sara, 2014).scholars (Zeithaml, Parasurarnan, & Malhotra, 2002)were amongst the first to provide a definition of web site service quality. Many literatures has focused on conceptualizing, evaluating and managing electronic service quality and on its contribution to the electronic environment. The value of e-government has not been fully materialised (Wang & Liao, 2008). As a result, various stakeholders start to question the value of their investment in e-government (Raus, Liu, & Kipp, 2010). This leads to much research on the development of various frameworks for evaluating the value of e-government. A set of factors (Heeks, 2008) identified for measuring the public value of e-government from the perspective of public service delivery, achievements of outcomes, and development of trust (Deng & Kanishka, 2010). According to (Golubeva, 2007)

dimensions like usability, transparency, interactivity, citizen centricity of e-services, and maturity of e-services development are key for evaluating the public value of web portals in Russian federation by focusing on the public value. Based on (DeLone & McLean, 2003)IS success model (Petter & McLean, 2009)have empirically evaluated the relationship within the using the quantitative method of meta-analysis. They found out that the majority of the relationships posited in the updated the (DeLone & McLean, 2003)IS success model supported.

There are several important attempts at developing various methodologies for assessing the value of e-government from different perspectives. (Kearns, 2004), for example, proposes a conceptual framework for evaluating the public value of e-government. Having extended the framework of (Heeks, 2008)derives a similar set of indicators for evaluating the public value of e-government service delivery based on quality of public service delivery. According to (Kearns, 2004) e-service Quality is determined by the availability of e-services and information, take-up of e-government services, availability of choice, citizens' satisfaction on e-government service, level of importance of the e-services to citizens, fairness of e-government service delivery, achievement of socially desirable outcomes, and development of trust through e-government. Methodology that developed by (Golubeva, 2007) for examining the public value of e-government portals with respect to usability, transparency, interactivity, citizen centricity of e-services, and level of e-services development is a suit framework but its indicators mostly concentrate on matured level of e-service. Moreover, most research works in this area concentrate on assessing the adoption of public e-services from governments (i.e. providers) perspective (Sharma, Al-Shihi, & Govindaluri, 2013). This phenomenon affected by two main issues; firstly, most public e-services are initiated and ruled by the supply side (i.e. the government and respective public agencies) and the second is tightly related to technology aspect only. This phenomenon solved by proposing the model that measure the value of e-service form another stakeholder that is citizen centric perspective.

On the other hand, there has been a recent focus on understanding the stakeholders' view on public e-services due to the huge investments and the less-than-expected take up by the public (Rowley, 2011). For instance, (Irani, et al., 2012) analysed the methodologies utilised in e-government research from a users' perspective. (Weerakkody, Irani, Lee, Osman, & Hindi, 2013) Then classified the users' side e-service issues in to cost, opportunity, benefit, and risk categories by following the work of (Osman, et al., 2011)the COBRA analytical framework. "Recently based on

data collected from a Turkish context, (Osman, et al., 2014) proposed the COBRA framework and established, using structured equation modelling (SEM) techniques, the causal relationships between cost-risk and opportunity-benefit variables to assess users' satisfaction of Turkish public e-services".

With the exponential growth in usage of IT and the web, governments are also increasingly using IT to provide services at all levels, with the aim to increase quality of service and efficiency in their operations. However, little effort made to assess such sites and their ability to interact with clients, as well as the service itself as a precursor to efficient delivery (Irani, et al., 2012). The literature related to e-services value assessment especially in Ethiopian e-government services is still rare. It is necessary to develop ways to assess and evaluate the success of e-government initiatives form perspective of user's. The summary of related works presented in the following table 2.1.

Table 2.1 Summaries of related studies

Author and Year	**Study Title**	**Approaches/ Methodologies**	**Key Findings**
(Parasuraman, Zeithaml, & Malhotra, 2005)	E-S-QUAL: A Multiple-Item Scale for Assessing Electronic Service Quality	Conceptual model	Fulfilment, Compensation, Responsiveness, Efficiency, System availability, Contact, Privacy
(Mentzas & Papadomichelaki, 2009)	A multiple-item scale for assessing e government service quality	Structured equation model	E-GovQual: Includes 21 quality attributes classified under four quality dimensions: Efficiency, Trust, Reliability, and Citizen Support.
(Verdegem & Verleye, 2009)	User-centred E-Government in practice: A comprehensive model for measuring user satisfaction	Structured equation model	E-government acceptance model; Communication about services; currency of information; security; help or guidance; personal contact and centralisation/integration.
(Alanezi, Kamil, & Basri, 2010)	A proposed instrument dimensions for measuring e- government service quality	Conceptual model	Modified version of SERVQUAL that includes seven dimensions and 26 items. The seven dimensions in this scale are website design, reliability, responsiveness, security/ privacy, personalisation, information and ease of use.
(Magoutas & Mentzas, 2010)	SALT: A semantic adaptive model for monitoring user satisfaction from e-services	Two-sample Z-test	SALT model includes the following factors: Portal's usability, Forms interaction, Support mechanisms and Security
(Belachew, 2010)	E-government Initiatives in Ethiopia	Literature Review	Work hard in human resource development, in availing the different policy, legal and procedural issue collaboration with the private sector which are basics for success

(Osman, et al., 2011)	A new COBRAS framework to evaluate e-government services: a citizen centric perspective	Literature Review	Evaluation of e-services to know satisfaction of user regarding with the COBRA it is holistic approach
(Irani, et al., 2012)	An analysis of methodologies utilised in e-government research: A user satisfaction perspective	Conceptual model and Analysis	Present comprehensive models to assess the success of e-government services from a user perspective.
(Osman, et al., 2014)	COBRA Framework to Evaluate E-government Services: A Citizen-Centric Perspective	Structural Equation Modelling	Transformation of public administration services and improved take up by citizens and businesses
(Zeleke, 2018)	Usability and Accessibility Model for E-Government Websites in Ethiopia	WAVE Accessibility assessment and expert evaluation	The findings of the study confirm that, Ethiopia e-Government websites have many usability and accessibility gaps. The study alerts organization managements, IT experts, web developers and other stakeholder to give more emphasis on specific usability and accessibility features, which are often being neglected.
(Lessa & Tsegaye, 2019)	Evaluation of the Public Value of E-Government Services in Ethiopia: Case of Court Case Management System	Qualitative and quantitative analysis	Its purpose is to evaluate the public value of e-government services and to identify challenges associated with it. It demonstrates the applicability of the concept of public value for evaluating the performance of e-government. In addition, it presents an investigation of the public value of e-government.

2.6 Chapter Summary

Existing related papers reviewed in order to have broaden understanding in the area and to justify the current study. Studies carried out in Ethiopian context on e-government had concentrates on the initiatives (Belachew, 2010), acceptance (Lessa, Negash, & Amoroso, 2011), success (Lessa L. , 2015), sustainability (Anteneh, Belachew, & Lessa, 2011) and (Lessa L. , 2015), challenges (Eshetu, 2015), usability and accessibility((Zeleke, 2018), and public value (Lessa & Tsegaye, 2019) of the e-government. As per researcher knowledge, there is no research conducted on e-service value as satisfaction. Studies conducted in this area revealed that it is worthy to study the satisfaction of e-government services in order to gauge where the organization is, what the public needs the organization to do, what the public expect from the e-government to provide. Works conducted by (Alanezi, Kamil, & Basri, 2010), (Gorla, Somers, & Wong, 2010), (Magoutas & Mentzas, 2010), and (Verdegem & Verleye, 2009) the value of e-service after its implementation focus on how far it has achieved the intended goal from stakeholders side should.

CHAPTER THREE

3 RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter describes the research philosophy of the study, research design and methodology used in order to accomplish the objective of the study. Thus, it discussed the research design and techniques used to answer the research questions. Accordingly, research data, the scope of the study and research population discussed on top of the study instrument questionnaire. The chapter also presents pilot study results, validity, reliability, and ethical concern of the study.

3.2 Research Philosophy

According to (Saunders, Lewis, & Thornhill, 2016) the term research philosophy refers to a system of beliefs and assumptions about the development of knowledge. (Saunders, Lewis, & Thornhill, 2016). Also says the concept of a paradigm as a predominant framework, which put in order for our entire approach to being in the world has become common. According to (Kothari, 2014) choosing methodologies to research consist of adopting a research philosophy, and a suitable research approach for entire research process.

Positivism paradigm (philosophy) refer to the philosophical stand of the natural scientist and involves working with an observable social reality to produce law-like generalizations (Saunders, Lewis, & Thornhill, 2016). It highlights that genuine, real and factual happenings could be studied and observed scientifically and empirically (Saunders, Lewis, & Thornhill, 2016). A theoretical perspective closely linked to objectivism is positivism, which argues that reality exists external to the researcher and investigated through the rigorous process of scientific inquiry (Saunders, Lewis, & Thornhill, 2016). Some of the traits of positivist paradigms have the researcher as independent and detached, neutral and independent of what is researched, typically deductive (formulate and test hypotheses), highly structured, large sample, typically quantitative methods of analysis, and range of data can be analysed (Saunders, Lewis, & Thornhill, 2016).

In this study, the researcher as philosophical assumption followed the positivist paradigm for the following three reasons. Firstly, this philosophy found to be widely used and more popular in IS

researches. Secondly, the positivist philosophy assert and appropriate for quantitative approach (Saunders, Lewis, & Thornhill, 2016). Lastly, positivist's concentrates on strictly scientific empiricist method designed to yield pure data and facts uninfluenced by human interpretation or bias. As a research approach, the study uses deductive approach by formulate hypothesis and test by using quantitative survey strategy with cross sectional data collection method. The research attempts to develop empirically based theoretical framework with a significant relationship between e-service provider and citizen's satisfaction.

3.3 Research Model

A research design is an overall approach to address a research problem from the theoretical foundation of the research to the collection, analysis, and interpretation of data (Kothari, 2014). Research methodology considered as a framework for guiding the researcher towards the accomplishment of the study objectives. Research philosophy also describes assumptions about the development of knowledge. Appropriate research design and methodology selection for the research work depend on the nature of the research. This study apply descriptive research type and deductive approach that started by formulating hypothesis and tried to test the issue under study using quantitative type of data. Use of this methodology is due to its capacity to provide different but complementary data on the same research problem, thus providing the researcher with a better understanding of the research problem, and its ability to overcome the weaknesses associated with each approach.

The research design facilitates research to be as efficient as possible in terms of effort, time and cost (Kothari, 2014). Since this research aimed to be conducted within a specified period and place to explore the effect of e-services on customer satisfaction that are provided by MOTI, it follows the cross-sectional study design. The study aims to adopt validate a conceptual framework for assessing the value of e-services on customer satisfaction based on citizens as stakeholder in Ethiopian e-Trade portal case. The conceptual framework adopted from related studies described in previous chapter. To facilitate this, a conceptual framework chosen as above by taking into account the nature of e-government development initiatives (Bezu, 2019) in Ethiopia as a developing country. Besides the aim of observing some usage characteristics of the MOTI e-Trade portal, it seeks to capture users' satisfaction quantitatively related to the usage of the e-service by assessing the perceived costs, opportunities, benefits and risks analysis (COBRA) using the e-

service on performing their particular tasks. The research model and the proposed hypothesis discussed below in detail.

3.3.1 Hypothesis Development

The evaluation of e-service success approached from various directions with a recent interest in citizens-centred satisfaction (Osman, et al., 2014). However, user's satisfaction evaluation depends exclusively on the user's expectation, experience, interaction with an e-service, and the generated values. The COBRA framework based on theoretical causal-effect relationships between the cost-benefit analysis and the risk-opportunity analysis on the one hand and users' satisfaction on the other hand (Zahir, 2008). The observed casual relationships among constructs and various performance indicators in the literature grouped into four sets of elements/constructs: cost, opportunity, benefit, and risk. Contrary to traditional models and frameworks that evaluate public e-services from a general point of view (Rowley, 2011), the COBRA framework has the ability to guarantee fine-grained assessment of e-services from all stockholders perspectives considering "the most successful factors that impact the satisfaction of users within an e-government service is COBRA" (Osman, et al., 2011). The cost and benefit dimensions are mostly tangible and are often easy to evaluate, whereas the risk and opportunity are mostly intangible. This study based on the expected dimensions of the hypothesized causal-effect relationships between the five elements of the so-called COBRAs model: costs, opportunities, benefits, risks analysis for satisfaction. The description of the COBRAs hypothesized model and its constructs presented in the following Figure 3.1.

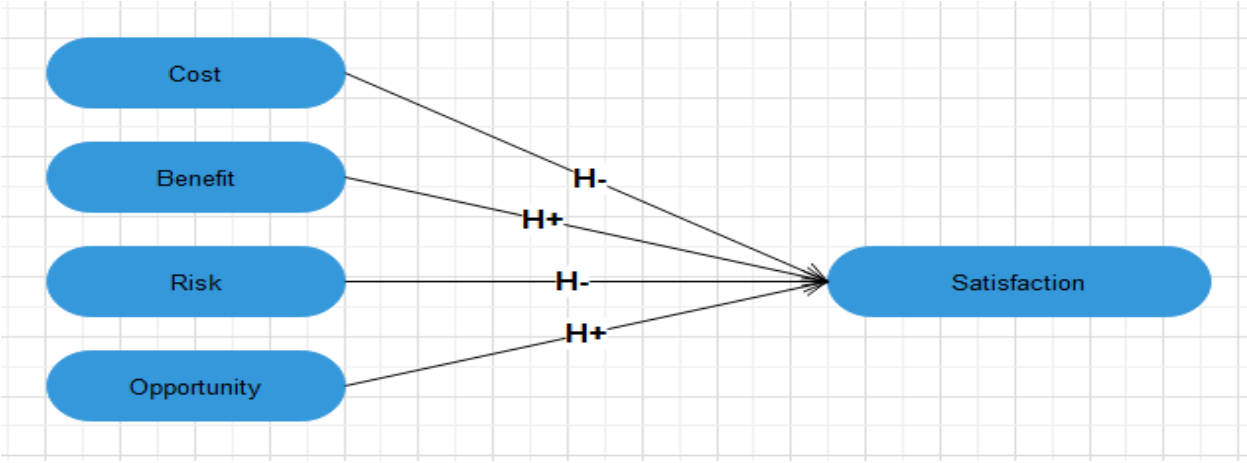


Figure 3.1 Hypothesized relationship between the construct variables (Osman, et al., 2011)

1. Cost - Satisfaction Hypothesized Relationship

Logically users compare the e-service costs with the associated benefits to decide on use/reuse of the e-service (Rowley, 2011). The cost-benefit analysis is a well-known concept in management and economic studies where managerial decisions to select a project based on the highest ratio of benefits to costs among competing alternatives (Foley & Alfonso, 2009).

Cost Construct: cost, measured in terms of money and time, reported as one of the most important issue in the use and intention to reuse of e-services (Foley & Alfonso, 2009) there are only few previous studies in the extant literature directly measure the impact of e-service cost on main stakeholder's satisfaction. Among them implicitly addressed by researchers in e-government including (Floropoulos, Spathis, Halvatzis, & Tsipouridou, 2010), (Foley & Alfonso, 2009), and (Zahir, 2008). The cost variables are often tangible and measured, like the actual spending of money and time to complete a requested e-service activities (Foley & Alfonso, 2009). This means that participating users in an e-service suggests delivering it at high quality and low cost. Thus, e-services will result in important cost savings to governments and citizens' alike (Foley & Alfonso, 2009). According to (Osman, et al., 2011) some cost variables include:

- Access time: The number of attempts to enjoy the available and requested service on the site; length of time to find the requested service on the site (accessible time, downloading time, waiting response time, searching time and system breakdown).
- Post-interaction time: the amount of time needed to receive confirmation of submissions, waiting time to receive a service (trade licence, registration, trade name).
- Authorization requirements: authorization code and associated costs, registration with the site (username and password) for authentication.

Consistent with these studies it expected that incurring high cost of using e-services might lead to lower satisfaction levels of citizens, which leads to derive the following hypothesis:

H1: E-service cost has a negative relationship with user satisfaction on e-services platform (Osman, et al., 2011).

2. Opportunities - Satisfaction Hypothesized Relationship

Opportunity Construct: The decision to use and intention to reuse e-government services influenced by opportunity. Opportunities presented by the environment or organization in which the e-government service operates (Osman, et al., 2011). Opportunities provided by the environment/ country within which e-service operates with special affairs. These arise when a user can take benefit of conditions to use e-services that enable him/her to become more beneficial due to his/her use of provided service. Users can gain personal advantage and additional flavors by making use of opportunities (Zahir, 2008) on e-service. Users should be careful, recognize the opportunities, and reluctant to grasp them whenever they arise. Opportunities may arise from environment, government, and technology incentives (Zahir, 2008). According to (Zahir, 2008) some e-service related opportunity dimensions may include:

- Service support (ease to access any time, flexibility in time 24x7 accesses); access anywhere (flexibility in place).
- Technological support (error correction, gain up-to-date information on progress, access provision of e-services in a public area (public library, cafe) and follow up facilities using email and media tools).
- Technological advances in the e-service process and provision such as making use of personalized e-services.
- Bypassing third party providers and avoiding bureaucratic processes.

H2: The opportunities created by using e-service is positive hypothesized relationship with user satisfaction on e-service platform (Osman, et al., 2011).

3. Benefit - Satisfaction Hypothesized Relationship

Benefit Construct: mainly represents the value of using an e-service. It measures mainly the total values of information availability, services quality, system quality, ease of use, and understanding. There is a growing agreement of the need to address the notion of "benefit to the user" in any e-government service assessment (Zahir, 2008). In addition, it is easy to determine the precise value associated with e-government (Beynon-Davies, 2005). Therefore, there is a need to develop success assessments that accurately measure user benefits (Gorla, Somers, & Wong, 2010). This set of assessment has been widely applied in several models like IS success model (DeLone & McLean, 2003), SERVQUAL (Zeithaml, Parasurarnan, & Malhotra, 2002), and e-GovQual

(Papadomichelaki & G, 2012) models. According to (Osman, et al., 2011) some benefits variables include:

- Tangible benefits such as saving time or saving money when we use e-service.
- Intangible benefits such as information quality (information availability, adequacy, accuracy, relevancy, reliability, understand ability, and completeness); Service quality (design, well– organized site, quick delivery, accessibility, and ease of navigation); System quality (quick loads, responsive, visually attractive, adequacy of links, and well- organized) (DeLone & McLean, 2003).

H3: There is positive relationship between e-service benefits and the higher user satisfaction on e-service platform (Osman, et al., 2011).

4. Risk - Satisfaction Hypothesised Relationship

Risk Construct: risks arise when conditions in external environment jeopardize the reliability, availability, and secured use of e-services. They compound the vulnerability when they relate to low cost risks are often uncontrollable (Rotchanakitumnuai, 2008). Users have concern about their personal and credit card information when they perform online transaction. According to (Colesca, 2009) trust in technology infrastructure and those managing the infrastructure would reduce risk leading to a strong impact on the adoption of a technology. A few researchers, including (Rotchanakitumnuai, 2008), (Zhang & Prybutok, 2005), and (Udo, Bagchi, & Kirs, 2008)have addressed this risk dimension. According to the above literatures, some risk variables include:

- Privacy risk arises from the use of private data on e-service platform for other purposes;
- Financial audit risk: storage of personal information and documents may worry users of being audited again and asked for an additional payment and accountability;
- Time and technology risk: users may feel they are wasting time when online services and ask additional professional support to retrieve or renter data to the e-service.
- Social risk: users may have less interaction with their friends during social events to continuous engagement with e-services; or may feel exposed to damage in social image.

H4: the risk related with using e-service platform is negative hypothesized relationship with user satisfaction on e-service platform (Osman, et al., 2011).

5. Satisfaction

Defined as a person's feelings of pleasure or disappointment that results from comparing products perceived performance or outputs with their expectations (Colesca, 2009). Customer satisfaction is a collective outcome of perception evaluation and psychological reactions to the consumption experience with a product/service (Colesca, 2009). Customers' positive attitude towards e-service creates the need to reuse and negative attitudes are creating the opposite and increasing the risk for dissatisfaction (Chen, 2010). According to the COBRA model, factors affecting satisfaction levels towards an e-service are based around four major constructs; those are cost, opportunity, benefit and risk (Zahir, 2008), (Osman, et al., 2011), (Rowley, 2011), (Weerakkody, Irani, Lee, Osman, & Hindi, 2013) and (Osman, et al., 2014).

The cost variable includes all tangible and intangible costs, such as the cost of using the internet and the time needed to lookup information, respectively. Opportunity considers the advantages a user can obtain by using the service to complete a transaction, such as flexibility in accessing the service or the ability to consult service support and incentives. The Benefit variable stands for the extra value generated to the user by using the e-service (Jaeger & Bertot, 2010). These can be described by the money and time saved compared to perform the same service offline. Finally, Risk includes factors that may make the system, or make it appear, vulnerable to threats (Colesca, 2009). Risks can be tangible, such as financial frauds and payment mistakes, or intangible and more social, such as data privacy, fear of interaction among peoples and protection or social isolation (Zhang & Prybutok, 2005). Therefore, the output that the e-government delivered, the satisfaction of served people about services, the expectation of served people assessed (Alanezi, Kamil, & Basri, 2010).

3.4 Sampling Design and Target Population

Studying the whole population in a survey research that encompasses a large number of participants is not economical and manageable (Kothari, 2014). Sampling is very useful to conduct such survey researches for its efficient use of resources (Kothari, 2014). For this research, participants selected using a mix of different sampling techniques from users of the e-Trade portal. As a sampling frame, purposive sampling method used due to its nature of the technique that provide important information that cannot be obtained from other choices (Kothari, 2014).

Purposive sampling is a sampling technique that is restricted to certain types of people who can provide the desired information (Hamed, 2016). For this study, the participant taken from recently launched e-Trade platform (OTRLS) by MOTI in January 2021 (MoTI, 2021). The Ministry introduces OTRLS portal to serve the business community‘s need for information and services such as trade name acquisition, trade licence renewal, and cancelation of trade name etc. However, the target population of this research is users of e-Trade (OTRLS) platform that launched by MOTI. Therefore, by using the purposive sampling technique the users of the e-Trade platform from the inauguration period January 21, 2021 up to February 21 used as participant of this study.

The list of users of e-Trade portal taken from the MOTI as target population. By using systematic sampling technique the participant of the study taken. Systematic sampling is quick and convenient when you have a complete list of the members of your population. However, if there does some kind of pattern to the original list, then bias may creep in to your statistics (Stephanie, 2021). “When this issue is encountered, you could randomly shuffle the list before choosing the n^{th} item or you could use repeated systematic sampling” (Ken, 2004). To come up with the above problem the original list of the e-Trade portal users were reshuffle and corrected to remove patterns and multiple items. To perform the main work there is need of how many respondents that participate in this study. By using, the formula for target population known which is users of e-Trade portal from inauguration period (i.e. January 21, 2021) - February 21, 2021 one month as sampling frame is 1906 users were accessed the site for different services that are available in the portal. Among them 327 e-Trade portal users were respondents of the study. The result gained by using the following formula. For the sample size n=.

$$n = \frac{N}{1} + Ne^2$$

Where, n = sample size

N = given target population

E = margin of error

To get the right respondent from the list of users dividing the given number of list of the population by sample size, which is equal to, Systematic sampling item = N/n

1906/327 = 5.82 this number approximately gives 6 from the list 6th item is the participant of the study. To keep the original list from patterns like gender or occupation this creates bias the study followed the MOTI order of their services like first come first serve manner. In addition, to avoid bias three round shift in choosing the initial item to be on the sample used.

3.5 Data Collection Procedure

After intensive literature review, the COBRA framework is chosen for this study its constructs and indicator items adopted form related works (Zahir, 2008), (Osman, et al., 2011), (Irani, et al., 2012), and (Osman, et al., 2014). These indicator items used as data collection items. By considering case of our country literacy status the user of the MOTI portal literacy status might be not adequate and is not possible to collect the data with the questionnaire in English language. As we know literacy status is low, this issue limits the number of participants of the study in to whom read and write English language only. To overcome this issue the English version of the original questionnaire translated by researcher Appendix C and reviewed by the prospective advisor. In addition, instructors from AAU colleague of Humanities, Language studies, Journalism, and communication department of Amharic language literature and folklore review and approved the translated questionnaire, as it is correct and consistent to make survey assure by issuing approval sheet appended in Appendix E.

The data collected through survey from the potential portal user of the MOTI e-Trade portal (OTRLS). By considering on the e-government, users or those who have awareness towards the e-government particularly OTRLS. The Respondents selected by using systematic sampling technique from the lists of e-Trade users as discussed above. The e-services portal administrators, the ministry ICT directorate, and some respective officials used as secondary data. When the draft questionnaires were ready, pre-tested through consultation with potential user of the portal. The questionnaires had pilot-tested to check the grammar, wording, sequencing, layout and estimated rate of response. The research explains the observed phenomena answers how by identifying causal factors and outcomes of the e-government services on customers satisfaction.

Moreover, since the original questionnaire for this study designed in the English language and the conventional language of users would be Amharic and the E-Trade portal launched with two languages Amharic and English for this reason the questionnaire translation-back-translation

procedure performed. To simplify the Amharic wording in the questionnaire, face validity again conducted for the Amharic version of the questionnaire by incorporating the comments of 25 Ethiopian respondents. In addition, based on their comments, some final modifications made. All the manifested variables in the questionnaire were measured using a five-point Likert scale with attributes ranging from 1= Strongly disagree to 5= Strongly agree.

The researcher applied a structured questionnaire, based on the original work of (Zahir, 2008) (Osman, et al., 2011).to adopt the questionnaire permission was asked from the researcher Ibrahim Osman the permission is appended in Appendix D. The scales were, in large part, translated, reviewed and validated by a language instructor. The English versions of the questionnaire was used for foreigners and other interested users of Ethiopians. The questionnaire divided into two parts. the first, about the demographic characteristics of respondents (i.e. users of e-Trade portal (include 7 questions); the second, with dependent and independent variable indicators items (includes 31 questions, 26 of independent and 5 for dependent variable with 5 point Likert type), 1 Strongly disagree to 5 Strongly agree, in a total of 39 questions included. The data collection took place in the period between 07 May and 20 May 2021. Minor adjustments made during pre-testing, mostly for simplification and better drafting of statements and items of the scales. Although the scales were adapted from already validated research of related paper discussed above. The English and Amharic version of the questionnaire appended in Appendix B and Appendix C respectively.

Besides to this in order to check the appropriateness and understand-ability of the questionnaire pilot testing is used. The pilot test includes twenty-five respondents' users of the e-trade portal. Out of twenty-five respondents for pilot study, twenty-two valid responses were collected this shows the response rate of 88% for the pilot. In addition to this the respondents confirms that the questionnaire is free from any grammatical and spelling errors and any jargons. Reliability of questionnaires used in pilot test results Cronbach alpha 0.725 whereas the final survey questionnaire distributed has reliability of 0.96.

3.6 Data Analysis Tools and Techniques

The process of data analysis started from coding the raw data into computer by converting from manually filled responses by respondents. Microsoft (MS) Office product MS Excel were suitable

and used. Initially, MS Excel 2016 used to code the collected data into computer for further processing. MS Excel 2016 applied to correct data types, naming rules and representation values to make the record fit for further analysis. Finally, the complete dataset was saved in comma delimited (.csv) file format as it is suitable for SmartPLS software SEM-PLS and in (.sav) file format as it is suitable for statistical package for social sciences (SPSS) software. The proposed model tested and validated using SEM techniques for identifying the critical attributes for evaluating the value of e-service on e-Trade portal user satisfaction.

This well organized and stored data pass through in-depth analysis to find answer for the statement of problem and answer research questions. Descriptive analysis conducted to analyse the demographic data of respondents using SPSS, which is suitable, and user-friendly tool for determining basic frequency based statistical measures. It is one of the most widely used software package for data analysis in social and behavioural sciences. SEM-PLS has been used for path coefficient modelling due to its capability of testing the effects of several interaction items (Lowery & Gaskin, 2014), (Venkatesh, Thong, & Xu, 2012), and (Hair, Black, Babin, & Anderson, 2009). SEM is a statistical technique for testing and estimating causal relationships between variables based on statistical data and qualitative causal assumptions while PLS is a component-based approach for testing structural equation models (Henseler, Ringle, & Sinkovics, 2009) and (Hair, Black, Babin, & Anderson, 2009).

According to (Henseler, Ringle, & Sinkovics, 2009), PLS has become a choice of various disciplines that include MIS, e-business, organizational, and consumer behaviours. PLS will be use to examine the reliability and validity measures along with other construct measures (Hair, Black, Babin, & Anderson, 2009). Hypothesis testing using PLS involves considering the likelihood of type I and type II errors, which relate to whether the data supports accepting or rejecting the hypothesis. Moreover, its capability of handling formative indicators, independency of data normalization and fitting for small sample size are the qualities of PLS to be preferred in testing complex multivariate causal relationships (Venkatesh, Thong, & Xu, 2012), (Hair, Black, Babin, & Anderson, 2009). SmartPLS software used to test the model using PLS-SEM technique. It selected for its softness and specific design features to ease the analysis of interactions (Venkatesh, Thong, & Xu, 2012). While SmartPLS latest version (v3) is available in the market with enhanced features, it does not have free version for academic purpose unlike the previous

version (v2). Though the trial and student versions of this latest version are available, they support data samples only less than 100. Hence, SmartPLS Version: 2.0.M3 used for path coefficient modelling since it requires only registration with valid e-mail address to get its licence from SmartPLS support team. However, in this study version 2.0.M3 of the SmartPLS software used. Therefore, the proposed framework tested and validated using SEM techniques based on this version of SmartPLS for identifying the critical attributes e-service and evaluating its value on customer satisfaction based on e-Trade portal users.

3.7 Study Model Variables

The COBRA model have five constructs one dependent variable satisfaction and four independent variables cost, opportunities, benefit and risk. All model constructs have their own indicator variable that extracted from the adopted slightly modified questionnaire from (Osman, et al., 2014). Moreover, pilot tested on 25 e-Trade portal users, also translated, and reviewed by Amharic language expert. Totally, the study have 31 mandatory variables used for PLS analysis. Table 3.1 shows the latent variable (LVs) and their indicator items with their corresponding questionnaires. From this cost construct have eight indicators items (C1-C8). Opportunity construct have six indicator items (O1-O6). Benefit construct also have seven indicator items (B1-B7). Risk construct have five indicator items (R1-R5). Finally, the dependent variable satisfaction have five indicator items (S1-S5). The indicator items and their respective questionnaire item adopted from (Osman, et al., 2011) appended in Appendix F.

Table 3.1 LVs and their corresponding indicator items with questionnaire.

Latent Variable and Questionnaires	**Indicator**
Cost	
Using the e-service saved me time**.**	C1
Using the e-service saved me money**.**	C2
The e-service reduces the bureaucratic process**.**	C3
The internet subscription cost is reasonable.	C4
The e-service reduces my travel costs to get the service	C5
It takes a long-time to find my needed information.	C6
It takes several attempts to complete the service due to system breakdowns.	C7

It takes a long-time to acknowledge the completion of e-service.	C8
Opportunity	
The Frequently Asked Questions (FAQs) are relevant.	O1
The e-service can accessed at any time and where.	O2
The e-service allows me to update my records online.	O3
The e-service offers tools for users with special needs.	O4
The information provided in different languages.	O5
There is a strong incentive for using e-service.	O6
Benefit	
The e-service is easy to navigate.	B1
The e-service requires no technical knowledge.	B2
The instructions are easy to understand.	B3
The information is relevant to my service.	B4
The e-service information is accurate.	B5
The e-service operations are well integrated.	B6
The instructions on performing e-service are helpful.	B7
Risk	
I am afraid my personal data may use for other purposes.	R1
E-service obliges me to keep a record of documents in case of future audit.	R2
The e-service may lead to a wrong payment that needs further correction.	R3
I worry about conducting transactions online requiring personal information.	R4
Using e-service leads to fewer interactions with people.	R5
Satisfaction	
I am satisfied with the e-Trade portal characteristics in terms of money and time.	S1
I am satisfied with the e-Trade portal related to tangible and intangible benefits.	S2
I am satisfied with the e-Trade portal related to e-service opportunities.	S3
I am satisfied with the e-Trade portal related to e-service risks.	S4
Overall, I am satisfied with the e-Trade portal services.	S5

SEM explained by two main sub-components models called structural (inner) model and measurement (outer) model (Lowery & Gaskin, 2014). The structural model consists of relationship between endogenous (dependent) and exogenous (independent) LVs. Endogenous variables are dependent variables that have at least one path-leading arrow pointing inwards (Lowery & Gaskin, 2014). Exogenous variable are independent variables that have path-leading arrows pointing outwards (Lowery & Gaskin, 2014). The measurement models defined for each LV to incorporate the relationship between the empirically observable indicator variables and the LVs (Lowery & Gaskin, 2014). Figure 3.2 shows the study model, have four exogenous variables and one endogenous variable. Therefore, the proposed framework tested and validated using SEM-PLS techniques for identifying the critical attributes for evaluating the value of e-service on customer satisfaction based on the data collected from e-Trade users.

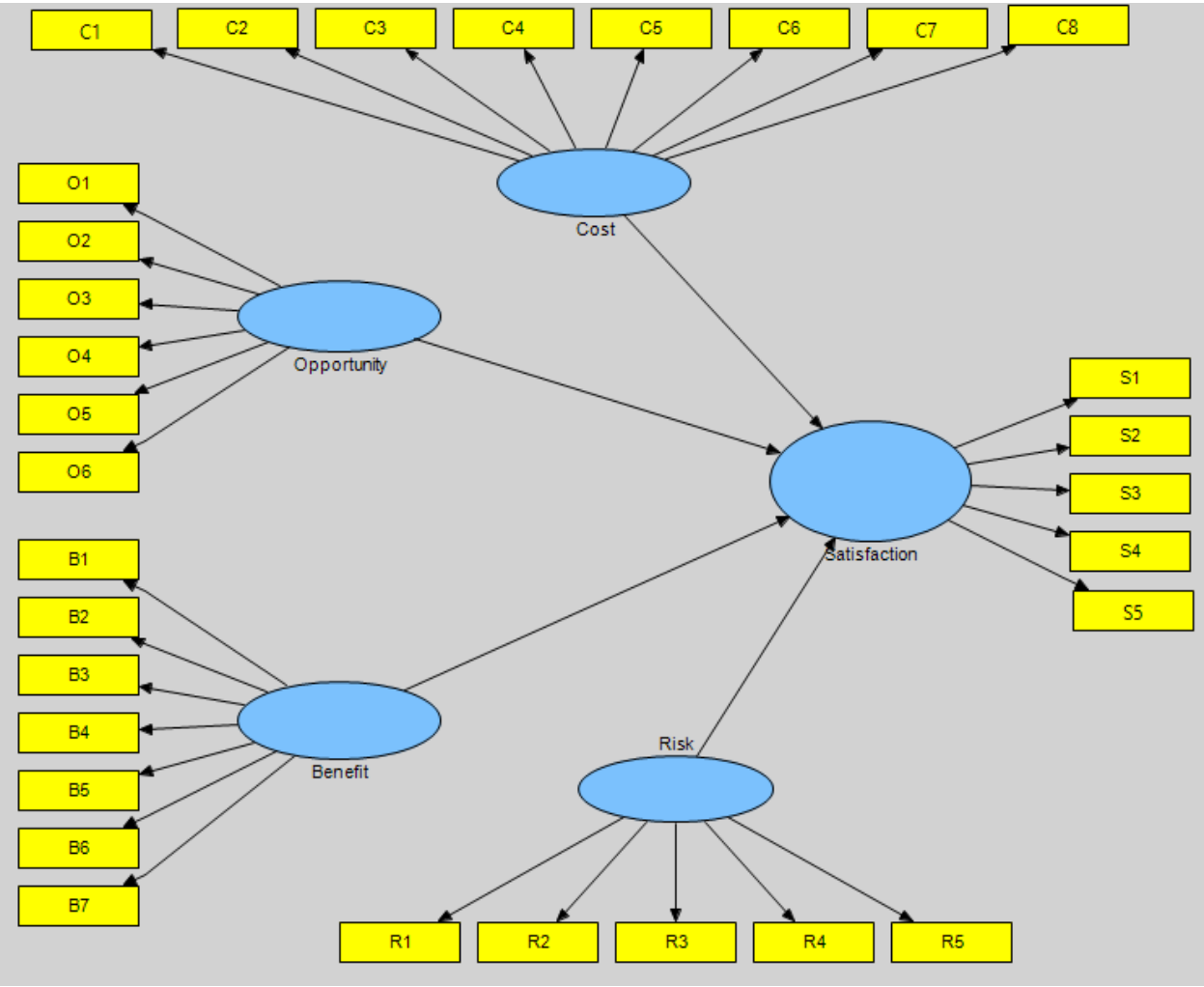


Figure 3.2 Structure and Indicators of the COBRAs model (author)

3.8 Validity and Reliability

In order to ensure and evaluate the study validity and reliability of the model, the assessment to be used is the internal consistency reliability(ICR), which is Cronbach's alpha, that has a cut-off value of 0.7 (Wong, 2013) and provides an estimate of the reliability based on the inter-correlations of the observed indicator variables. The researcher evaluate of the convergent validity and discriminatory validity, structural model assessment by using path coefficient, coefficients of determination (R^2), variance inflation factor (VIF), and predictive relevance (Q^2) measured.

Validity

We have to measure the validity of our data in order to ensure whether the data collection tool was appropriate and valid. The researcher has to make sure that the data collection methods should be accurate. Moreover, the researcher should consider, whether the empirical data they gathered is relevant to use and serve the main purpose of the study. To ensure validity, the researcher tried to collect only the relevant information through the survey. The researcher constructed all our questions based on our purpose of the study and the hypotheses. The researcher eliminated all the questions that would not contribute to the main purpose of the study at all. This way, ensured a high degree of validity. Validity analysis is the relationship between the overall e-service value and dimensions of customer satisfaction. Another consistency found in the dimensions, which emerge as significantly affecting the overall satisfaction.

Reliability

The reliability measures the conducted study is trustworthy, transparent and consistent (Urbach & Ahlemann, 2010). A study with high degree of reliability must have the data to be as consistent as possible. The researcher followed questionnaire in person to avoid low response rate. Ensuring high level of respondent involvement would contribute to the consistency of the results. The data is collected in a consistent way and statistical analysis is done through an objective and proper way, similar outcomes are expected to come from related studies. The researcher intend to use accepted statistical tools for the analysis so that the observations are free from human biasness. Also, send this questionnaire through a pilot test, which can assure us that the questionnaire formulated correctly and easy for understanding. In addition to this by communicating with my advisor, he recommended that to review the questionnaire by Amharic language expert from AAU

the questionnaire reviewed by language expert. Hence, I hope that, we achieve a high reliability of the measurements, which we perform on the collected data. In next chapter, the validity and reliability analysis tests and values explained in detail.

3.9 Ethical Considerations

The data collected from the respondents used for this study only. Their identity never been exposed to third party by any means, and would handle in a professional manner. Survey participants told about the aim of the research, and the procedures that have been use. Made certain that all participants understand all the information that have been given to them and they can ask questions and their participation in this research would have been voluntarily. Moreover, all major principles of ethical considerations and standards have noted during all phases of the study process that includes, but not limited to, respect for participants, respect to the organizations involved, keep confidentiality and avoiding any acts of misbehaviour like intentional misinterpretations and using results for harming the whole or part of the society.

3.10 Chapter Summary

The chapter starts with picking an appropriate research design and methodology to answer the research questions. Having reviewed various research methodologies, the quantitative research methodology chosen to answer the research questions. After that, the data collection strategy and the pilot study result presented. With the use of quantitative research methodology data collected by using a survey questionnaire. Collected survey data analysed using SPSS and SmartPLS. Comprehensive discussions of the analysis of survey data presented in the subsequent chapter.

CHAPTER FOUR

4. DATA ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter has attempted to answer the research questions by thoroughly analysing quantitative data collected using questionnaire from e-Trade portal users. The chapter comprises overview of the data analysis and result, reliability and validity analysis, demographic profile of respondents, discussion on hypothesis, validation of measurement model and structural model, discussion on findings and finally chapter summary.

4.2 Overview on Data Preparation for Analysis

The researcher has distributed overall 327 questionnaires in 10 working days based on the data collection strategy designed in the previous chapter. The researcher collected questionnaires filled by respondent after a reasonable time for response and waiting for the paper to be return. Some people were not willing to respond, because they were busy with their business. The researcher forced to wait for 12 consecutive days. Then, 327 survey data collected in general. Data analysis performed based on the procedure previously planned in chapter three, in order to answer the research questions and hypothesis accordingly.

4.3 Data Preparation

The data that have collected from participants through cross-sectional survey using structured close-ended questionnaires were transformed and coded in to computer using MS excel 2016. During this pre-processing, incomplete questionnaires and questionnaires with invalid responses rejected. Moreover, questionnaires with missing values for more than five items have rejected as suggested by (Hair, Black, Babin, & Anderson, 2009) the amount of missing value should not be more than 15%. Based on the suggestion by rejecting invalid responses out of 327 distributed questionnaires 290 were most fit and totally 37 questionnaires not returned and/or not clear to use. After this filtration, responses considered as valid for further data processing that makes 88% valid response rate. The data-pre-processing phase ended up with transforming the .xlsx excel file format dataset into (.csv and .sav) file formats for SmartPLS and SPSS respectively. The final complete dataset saved in file name ‘e-Trade users’ for respective file formats to analyse using SmartPLS and SPSS as planed in the previous chapter three.

4.4 Descriptive Statistics of Respondents

4.4.1 Demographic Characteristics of Study Respondents

The respondent's demographic data consists of seven traits that consists gender, age, education qualification, company occupation, computer knowledge, internet skill, and how often navigate the www.eTrade.gov.et portal. All the seven respondent initial information represented in the questionnaire as multiple-choice question in which the respondent marked only one of the given alternatives that describes him/her best. The response items presented in text format for the study participants easy understanding, finally during data preparation step all converted to numerical values since only numbers treated well by SPSS and SmartPLS data analysis tool.

4.4.1.1 Respondents per Their Gender

The respondents who participated in this study were asked to indicate their gender that represented in data pre-processing as 0 and 1 for "Female" and "Male" values respectively the result shows 83.8% were male which is about five fold than female respondents. Table 4.1. Shows gender of respondents, corresponding frequency and percent.

Table 4.1 Frequency of respondent's per gender category

Gender	Frequency	Percent
Female	47	16.2
Male	243	83.8
Total	290	100.0

4.4.1.2 Respondents per Their Age

Respondents' age category were classified in to four distinct groups that ranges in number of years as starts from [between 20-30], [between 31-40], [between 41- 50] and [above 51] and coded as 1, to 4 respectively. As shown in Table 4.2 the percent of study participants who can categorized as the youngest group whose age was less than 40 years were accounted for more than 57.9%.

Table 4.2 Frequency of respondent's per age category

Age in Years	Frequency	Percent
20-30	45	15.5
30-40	123	42.4
40-50	84	29.0

Above 51	38	13.1
Total	290	100.0

4.4.1.3 Respondents per Their Education Status

Participants per their educational qualification was the another demographic characteristic that shows the participants' educational qualification. It also grouped in to six groups. Hence, the group labelled as MA/MSc Degree and above, BA/BSc Degree, Diploma, TVET certificated, Secondary School complete, and others. It was coded in the system from 1 to 6 from the highest qualification to the lowest educational status respectively. As it is shown in Table 4.3, most (40%) respondents have BA/BSc degree and above at minimum education qualification.

Table 4.3 Frequency respondent's per educational qualification

Educational Qualification	**Frequency**	**Percent**
MA/MSc	28	9.7
BA/BSc	89	30.7
Diploma	55	19.0
TVET	50	17.2
Secondary School	51	17.6
Others	17	5.9
Total	290	100.0

4.4.1.4 Respondents per Their Company Operation

Their company operating now and their occupation in which they have a business relationship might characterize the respondents. Because of this including, the company operation as items in demographic traits of participants and reporting their frequency relationship is rational for this study to identify which group of the business companies were using abundantly the e-survive portal. Hence, the group labelled as Trade, Service giving, Manufacturing, Educational sector, and others. In the system coded from 1 to 5 respectively. Table 4.4 show that 41.4% of the respondents were participate in trading and it is the largest group from the company operations.

Table 4.4 Frequency of respondent's as per their company operation

Company Operation	Frequency	Percent
Trade	120	41.4
Service	66	22.8
Manufacturing	85	29.3
Educational sector	11	3.8
Others	8	2.8
Total	290	100.0

4.4.1.5 Respondents per Their Computer and Internet Skill

Frequency distribution of respondents with respect to their computer and Internet skill their experience of using computer and internet is another demographic profile of the respondents of this study. Hence, the group is labelled as Very good, Good, Moderate, and poor for both computer knowledge and Internet skill. In the system coded from 1 to 5 respectively for both cases Computer knowledge and Internet skill. The following tables table 4.5 shows frequency of respondents for both computer knowledge and Internet skill.

Table 4.5 Frequency of respondents as per their computer knowledge and Internet skill

Groups	Computer Knowledge		Internet skill	
	Frequency	**Percent**	**Frequency**	**Percent**
Very good	63	21.7	60	20.7
Good	167	57.6	124	42.8
Moderate	59	20.3	101	34.8
Poor	1	.3	5	1.7
Total	290	100.0	290	100.0

4.4.1.6 Respondents per Their Frequency of Navigation

Based on part I questionnaires analysis results show in the table 4.6, from the total participant of the study above 66.2% respondents have sometimes use e-Trade portal for different respective operation. In addition, 32.4% of respondents navigate www.eTrade.gov.et frequently.

Table 4.6 Frequency of respondents with their navigation frequency.

How often navigate	Frequency	Percent
Always	3	1.0

Frequently	94	32.4
Sometimes	192	66.2
Never	1	0.3
Total	290	100.0

4.4.1.7 Summary of Demographic Characteristics

As shown in Table 4.7, the study participants were majority of male 82.8 %, and other 16.2% were female. Majority 57.7% of the participants ages between 20 to 40 years that can categorized as an adult range. Regarding educational qualification, 40.4% of the participants of the study were BA/BSc degree and above. The respondent's company operation related with trade and trade related issues were accounts 41.4%. On other hand computer knowledge and internet skill of the participants, majority of the respondents have good and very good computer knowledge and internet usage skill, which accounts 79.3% and 63.5%, respectively. Finally, their frequency of navigation is another profile from this 32.4% percent of respondents were navigate the portal frequently and 66.2% of respondents were navigate sometimes.

Table 4.7 Demographic summary of respondents frequency

Questionnaire Item	**Category**	**Frequency**	**Percent**
Gender	Male	47	16.2%
	Female	243	82.8%
Age	20-30	45	15.5%
	30-40	123	42.4%
	40-50	84	29.0%
	Above 51	38	13.1%
Educational status	MA/MSc	28	9.7%
	BA/BSc	89	30.7%
	Diploma	55	19.0%
	TVET	50	17.2%
	Secondary school	51	17.6%
	Others	17	5.9%
	Trade	120	41.4%
	Service	66	22.8%

Occupation	Manufacturing	88	29.3%
	Educational sector	11	3.8%
	Others	8	2.8%
Computer knowledge	Very good	63	21.7%
	Good	167	57.6%
	Moderate	59	20.3%
	Poor	1	0.3%
Internet skill	Very good	60	20.7%
	Good	124	42.8%
	Moderate	101	34.8%
	Poor	5	1.7%
How often navigate	Always	3	1.0%
	Frequently	94	32.4%
	Sometimes	192	66.2%
	Never	1	0.3%

4.5 Assessment of Structural and Measurement Models of the Study

4.5.1 Overview of Model Assessment

After the data quality has been evaluated, the researcher executed the PLS algorithm to determine the model parameter's estimates and explicitly considers the direction of relationships as specified in the predictive path model. Model validation explains the process of systematically measuring whether the formulated hypotheses explained by the structural model confirmed by the data or not (Wong, 2013). Overall, the validation is an attempt to determine whether the measurement models as well as the structural model fulfil the quality criteria for empirical work (Hair, et al., 2017).

The validation process based on two components of SEM the measurement and the structural model assessment. Moreover, SEM consists of two types of measurement scales called formative and reflective measures (Wong, 2013). Formative measures the indicators that cause the LVs and are not interchangeable among themselves (Urbach & Ahlemann, 2010). A reflective indicator is an observed variable that assumed an effect (consequent) of LVs. In this research, all indicators

are reflective indicators (Osman, et al., 2014). The findings of these measurements from tests conducted using PLS algorithm discussed below.

All the values reported are found from the report of SmartPLS after running the PLS algorithm by using SmartPLS software version 2.0 M with initial setting of: Path weighting scheme, Data metric mean= 0, Var=1, Maximum iterations= 5000, with 1.0E-5 stop criterion and initial weight of 1.0.

4.5.2 Measurement Model Assessment

According to (Urbach & Ahlemann, 2010) the measurement model used for this study categorized as reflective. Therefore, no need of reporting and testing of outer weights with their significance, construct validity, and multi-collinearity. Following the guideline developed by (Wong, 2013) and (Hair, et al., 2017) on the test of measurement models indicator reliability(IR), internal consistency reliability(ICR), convergent validity, and discriminant validity with application of standard decision rules are reported for reflective indicators while outer weights, construct validity, and collinearity of indicators are reported for formative indicators. ICR and discriminant validity not assessed for formative indicators since it was meaningless for formative indicators where they not expected to have high correlation.

The measurement model defines how each block of measurement items relates to its LV (Hair, et al., 2017). It measures the validity of the LVs in terms of whether or not the LVs measured with satisfactory accuracy (Henseler, Ringle, & Sinkovics, 2009). It shows whether the pattern of the loadings of the measurement items corresponds to the theoretically anticipated factors (Wong, 2013). Thus, the relationship occurs between each of the LV and its measurement items is a factor analysis in itself. The model for this study have five constructs one dependent variable satisfaction and four independent variables cost, opportunities, benefit, and risk. In order to validate the reliability of the survey instrument in the pre-test phase, Cronbach's alpha used. The reliability of the scales assessed by Cronbach's alpha coefficient. Cronbach's alpha of 0.96 obtained for the set of all 31 mandatory variables, which measured the constructs of the study model.

Internal Consistency Reliability (ICR):

Cronbach’s alpha (α) is commonly applied to test ICRs that ranges alpha values from 0 (completely unreliable) to 1 (completely reliable) (Henseler, Ringle, & Sinkovics, 2009). A single observed variable reliability describes the variance of an individual observed comparatively to an

unobserved variable by evaluating the standardized outer loadings of the observed variables. However, it blamed to provide a conservative measurement in PLS since it assumes all indicators are equally reliable (Wong, 2013). In contrast, PLS prioritizes indicators according to their reliability, resulting in a more reliable measure called composite reliability (Henseler, Ringle, & Sinkovics, 2009). Hence, ICR is measured using composite reliability in this study. According to (Henseler, Ringle, & Sinkovics, 2009), (Wong, 2013), and (Lowery & Gaskin, 2014) ICR values larger than 0.7 are desirable to assure strong reliability. The ICR computed by using Cronbach's alpha result for almost all questionnaire items achieve above 0.7, which indicates a high correlation among the responses for given question. This indicates the questionnaire is consistently reliable. Table 4.8 shows the result for each of COBRAs constructs.

Indicator Reliability (IR):

According to (Wong, 2013)description, IR measures to what extent a variable or set of variables is consistent regarding what it intends to measure. In other words, it assess how much of the indicators variance is explained by the corresponding LVs (Urbach & Ahlemann, 2010). In PLS approach, reflective indicators loading should inspected for determining of the appropriateness of the indicator as it is essentially representing the correlation between the indicator and the LV (Hair, et al., 2017). The reliability of one construct is independent of the other and calculated separately. In general, the larger the lodgings indicate the more reliable that LV (Henseler, Ringle, & Sinkovics, 2009). However, the preferred level is above 0.7 which is the level at which about half the variance in the indicator is explained by its factor and is also the level at which explained variance must be greater than error variance (Henseler, Ringle, & Sinkovics, 2009), (Wong, 2013). The summarized result described below in table 4.8.

Convergent Validity (AVE)

To verify the convergent validity of the variables, each LV's average variance extracted (AVE) was calculated (Wong, 2013). The lowest 50% of the variance from the observed variable should take by the latent constructs in the model. Hence, this indicates that the AVE for all constructs should be above 0.5 (Wong, 2013). Table 4.8, it show that all of the AVE values were more than 0.5, so convergent validity confirmed for this study model. These results confirmed the convergent validity and good internal consistency of the measurement model.

Discriminant Validity

The next measurement model test was the discriminant validity of the LVs. Discriminant validity defines that the manifest variable in any construct is distinct from other constructs in the path model (Lowery & Gaskin, 2014). The technique to test discriminant validity in PLS is through the square roots of corresponding AVE values for each construct. This technique also called Fornell & Larcker criterion (Wong, 2013) The suggested standard is that a construct should not show the same variance as any other construct that is more than its AVE value (Wong, 2013). Which determine the discriminant validity by computing the square roots of AVE values with the correlation values between any pair of LVs. As shown from table 4.8, the 6th column, which determine the discriminant validity the square roots of AVE, values greater than the correlation values between any pair of corresponding LVs. We can say that discriminant validity is substantial. The following table shows the summarized results of reliability and validity tests.

Table 4.8 Reflective Indicators IR, ICR, Convergent Validity, Discriminant Validity Results

Latent Variable (LV)	**Indicators**	**Indicator Reliability (Outer Loadings)**	**Composite Reliability (ICR)**	**Convergent Validity (AVE)**	**Discriminant Validity Square roots of √AVE**
Cost	C1 C2 C3 C4 C5 C6 C7 C8	0.83 0.79 0.79 0.82 0.75 0.78 0.80 0.81	0.93	0.63	AVE=0.63 $\sqrt{AVE}$ =0.80
Opportunity	O1 O2 O3 O4 O5 O6	0.39 0.83 0.82 0.72 0.74 0.79	0.86	0.53	AVE=0.53 $\sqrt{AVE}$ =0.73
Benefit	B1 B2 B3 B4 B5 B6 B7	0.13 0.36 0.85 0.86 0.82 0.69 0.81	0.85	0.50	AVE=0.50 $\sqrt{AVE}$ =0.70

Risk	R1 R2 R3 R4 R5	0.80 0.79 0.76 0.81 0.82	0.89	0.64	AVE=0.64 $\sqrt{AVE}$ =0.80
Satisfaction	S1 S2 S3 S4 S5	0.78 0.83 0.73 0.78 0.79	0.88	0.61	AVE=0.61 $\sqrt{AVE}$ =0.78

Another technique to test discriminant validity is using cross-loadings (Lowery & Gaskin, 2014). Cross loadings in PLS are direct outputs that correlate the component scores of each LVs with all other items. To assure discriminant validity, the loading of each indicator should be higher for its designated construct than any other constructs and each of the constructs should be loaded highest with its own indicators (Urbach & Ahlemann, 2010). This can identified by taking the cross-loading output from SmartPLS into the Excel sheet and using the conditional formatting to highlight all cell values greater than a minimum loading value shown in table 4.9. As it is shown table, almost all highlighted (also bolded for emphasis) cells were those on the diagonal that indicate the loading of each indicator was higher for its designated construct than any of the other constructs and each of the constructs loaded highest with its own items which confirmed discriminant validity was well achieved (Henseler, Ringle, & Sinkovics, 2009).

Table 4.9 Discriminant Validity Using Cross Loading Technique

	Benefit	Cost	Opportunity	Risk	Satisfaction
B1	0.13	0.05	0.06	0.05	0.06
B2	0.36	0.24	0.26	0.25	0.21
B3	0.85	0.64	0.75	0.63	0.73
B4	0.86	0.66	0.79	0.65	0.75
B5	0.82	0.83	0.77	0.84	0.82
B6	0.69	0.58	0.63	0.58	0.52
B7	0.81	0.83	0.74	0.82	0.64
C1	0.68	0.83	0.63	0.80	0.77
C2	0.76	0.79	0.73	0.76	0.65
C3	0.66	0.79	0.65	0.81	0.54
C4	0.66	0.82	0.62	0.80	0.75
C5	0.70	0.75	0.66	0.79	0.73
C6	0.75	0.78	0.71	0.76	0.64
C7	0.68	0.80	0.67	0.81	0.56
C8	0.68	0.81	0.68	0.82	0.56
O1	0.38	0.40	0.39	0.39	0.27
O2	0.78	0.63	0.83	0.63	0.75
O3	0.81	0.67	0.82	0.66	0.75
O4	0.61	0.57	0.72	0.59	0.63
O5	0.59	0.60	0.74	0.58	0.57
O6	0.71	0.77	0.79	0.78	0.65
R1	0.66	0.82	0.62	0.80	0.76
R2	0.70	0.75	0.66	0.79	0.72
R3	0.75	0.78	0.71	0.76	0.65
R4	0.67	0.80	0.67	0.81	0.56
R5	0.68	0.81	0.68	0.82	0.56
S1	0.61	0.74	0.57	0.73	0.78
S2	0.82	0.67	0.80	0.65	0.83
S3	0.58	0.63	0.56	0.63	0.73
S4	0.59	0.66	0.65	0.67	0.78
S5	0.73	0.56	0.74	0.57	0.79

4.5.3 Structural Model Assessment

The structural model assessment is to include explanation of target endogenous variables variance, inner model path coefficients size and dimension, and checking for structural path significance by bootstrapping (Wong, 2013). After confirmed that the measurement model results was valid and reliable. The next step was to measure the inner structural model outcomes. This included

observing the model's predictive relevancy and the relationships between the constructs. The coefficient of determination(R^2), path coefficient (β value) and T-statistic value, effect size (f^2), the predictive relevance of the model (Q^2), and Goodness-of-Fit (GOF) index are the key standards for evaluating the inner structural model. In general, structural model analysis examined to evaluate how the data fit with the proposed structural model and validate hypothesized relationships. Figure 4.1 shows the PLS algorithm results for structural model assessment.

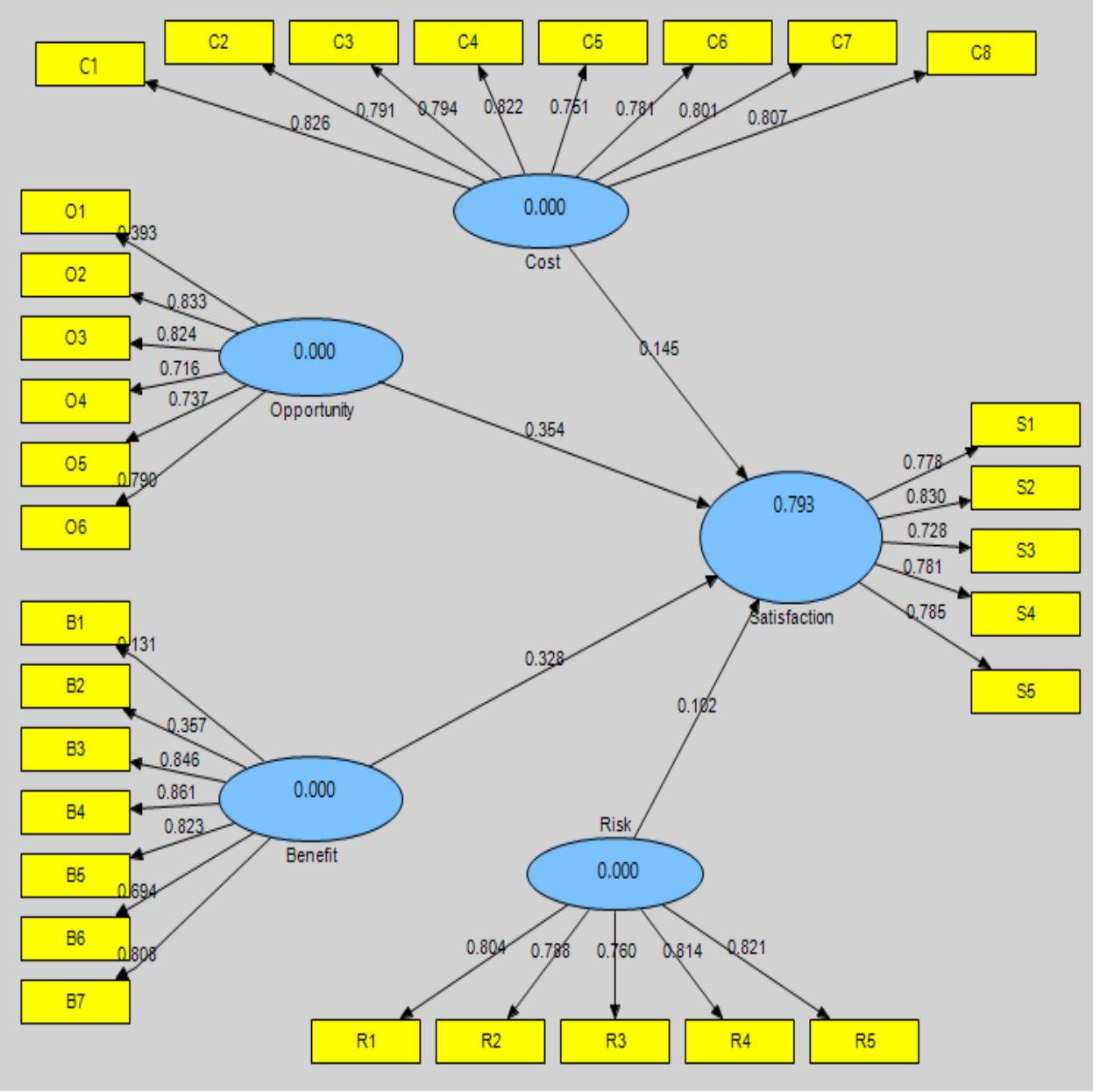


Figure 4.1 Structural and measurement model for the e-Trade user's dataset (author)

Measuring the Values of (R^2)

The coefficient of determination ($R^{2)}$ measures the overall effect size and variance explained in the endogenous construct for the structural model and is a measure of the model's predictive accuracy. The path modelling overall predictability and goodness of fit primarily assessed through the coefficient of determination R^2 values. In this study, the path model was 0.79 as shown in the figure 4.1 for satisfaction. This means 79% of variance in satisfaction explained by the four exogenous factors included in the study model. This indicates that the four independent constructs substantially explain the variance in the satisfaction, meaning that about 79% of the change in the satisfaction construct was due to four independent constructs in the model. According to (Hair, et al., 2017) and (Henseler, Ringle, & Sinkovics, 2009), R^2 value of 0.75 considered as substantial, R^2 value equal to 50 regarded as moderate, and R^2 value of 0.26 considered as weak. Hence, the R^2 value in this study was substantial. Though the model found to be substantial in explaining the variance in satisfaction there are evidences on other researchers who found similar results like (Osman, et al., 2014) founds 0.67. For instance, the original COBRA model constructs R^2 substantially determines satisfaction of the e-service user of e-Trade portal.

Measuring the Value of Adjusted R^2

Using SPSS linear regression analysis test, adjusted R^2 has been calculated according to (Hair, et al., 2017)the impact for addition of exogenous variable even though the new variable has insignificant correlation with the endogenous variable. The adjusted R^2 for satisfaction endogenous variables found to be 0.38 for insignificant change on the original R^2 values.

Measuring the Effect Size (f^2)

The structural model was also assessed by exploring the change in R^2 value to see whether the impact of a particular inclusion and/or exclusion of the LVs and their impact on satisfaction. The effect size f^2 can calculated as follow.

$$f^2 = (R^2 \text{ included} - R^2 \text{ excluded}) / (1 - R^2 \text{ included})$$

Cohen's f^2 used to test influence on the value of the latent endogenous construct on the determination coefficient. The f^2 values were 0.35 (strong effect), 0.15 (moderate effect), and 0.02 (weak effect). In this study by applying the formula (Hair, et al., 2017), resulted in the effect size

(f^2) values ranged from 0.03 to 0.15 as shown in Table 4.10. These ranged values of f^2 categorized as the LVs inclusion and exclusion have small to moderate effects (Henseler, Ringle, & Sinkovics, 2009) and (Venkatesh, Thong, & Xu, 2012).

Table 4.10 f^2 test values using R^2 included and excluded

Omitted Exogenous LV	**Original R^2 values**	**New R^2 values**	**Effect size (f^2) Value**	**Effect on R^2**
Cost	0.79	0.78	0.03	Weak
Opportunity	0.79	0.77	0.15	Moderate
Benefit	0.79	0.77	0.08	Weak
Risk	0.79	0.78	0.05	Weak

Predictive Relevance of the Model (Q^2)

Q^2 statistics are used to test the quality of the PLS path model, which is calculated using blindfolding (Henseler, Ringle, & Sinkovics, 2009) procedures and cross-validated redundancy was performed. The Q^2 criterion recommends that the conceptual model can predict the endogenous latent constructs. In the SEM, by using Stone-Geisser's Q^2 values measured must be greater than zero for a particular endogenous latent construct. The blindfolding algorithm with an arbitrary setting of omission distance 7, Q^2 found 0.48 for satisfaction that indicates high degree of predictive relevance. This means proposed model constructs were high prediction relevance for citizen's satisfaction on e-service based on the e-Trade user's dataset.

Path Coefficient Assessment

The path coefficients in the PLS and the standardized β coefficient in the regression analysis were similar. Through the β value, the significance of the hypothesis was tested. The β denoted the expected variation in the dependent variable for a unit variation in the independent variables. The β values of every path in the hypothesized model measured, the greater the β value, the more the substantial effect on the endogenous LVs. However, the β value had to verify for its significance level through the T-statistics test. The bootstrapping procedure used to test the significance of the hypothesis. To test the significance of the path coefficient and T-statistics values, a bootstrapping procedure using 5000 subsamples with no sign changes carried out for this study.

While the algebraic signs indicate the agreement among the initial theoretical assumption and the actual empirical values, the coefficient magnitude indicates how well the relation is strong or week. The strength varied from -1 to 1 in where an absolute value closer to 1 indicates high strength while the value closer to 0 indicates weak relation (Wong, 2013). Moreover, the significance level of these β coefficients is very important to confirm/accept the hypothetical relation. An accepted t-value greater than or equal to 1.96 is required to have significant result at $p< 0.05$ (Henseler, Ringle, & Sinkovics, 2009), (Lowery & Gaskin, 2014), and (Wong, 2013).

The evaluation of the path coefficient includes algebraic sign, magnitude, and significance (Urbach & Ahlemann, 2010). Of the four hypotheses formulated for the study only H4, which posited that 'risk related with using e-service platform is negative hypothesized relationship with user satisfaction', not confirmed. All others, H1, H2, and H3 accepted, and showing that the three factors of the e-service feature are significant determinant of user satisfaction from the perspective of current e-Trade portal users.

A summary of path coefficients along with t-value are presented in Table 4.11 to show whether the initial assumed relations are confirmed or not. Accordingly, the assumed causal relationships and corresponding findings discussed in brief below. The model estimation is to test the significance of each hypothesised path relationships between dependent and independent variable. The results shows that the four dimensions (cost, opportunity, benefit, and risk) explained 79% of the variance in user's satisfaction. User's satisfaction is 79% explained with exogenous variable coefficients: opportunity ($\beta = 0.35$), benefit ($\beta = 0.33$), cost ($\beta = 0.25$) and risk ($\beta = 0.10$). All items in the cost, opportunity, benefit, and risk constructs significantly explain the variance of the four constructs toward e-service user's satisfaction.

Table 4.11 Path coefficients and T-values on the e-Trade user's dataset

Hypothesis	**Path Coefficients**	**T-Statistics**	**Hypothesis Status**
H1: Cost -> Satisfaction	0.25*	3.59	Supported
H2:Opportunity-> Satisfaction	0.35*	4.33	Supported
H3: Benefit -> Satisfaction	0.33*	3.83	Supported
H4: Risk -> Satisfaction	0.10	0.32	Rejected

*$p<0.05$ at confidence level of 1.96

4.6 Discussion on Study Hypothesis

H1: Cost -> Satisfaction

H1: E-service cost has a negative relationship with user satisfaction on e-services platform.

'E-service related cost like money and time has a positive impact on customer's satisfaction on e-Trade portal of MOTI has been supported on the e-trade portal users dataset for $\beta = 0.25$ significant at $p<0.05$. This indicates that if someone uses e-Trade portal to perform particular task the related costs like money and time have impact on satisfaction of users on the portal. The significant relationship found among cost and satisfaction on the compiled e-Trade user's dataset indicates that customers' satisfaction towards e-service cost in Ethiopian context strongly determined by e-service related costs. These result is in accordance of the initial COBRA (Irani, et al., 2012), (Osman, et al., 2014), and (Zahir, 2008) findings of empirical tests varied. According to (Osman, et al., 2014) the average direct effect of cost on user satisfaction was (-0.26), which indicates user's satisfaction becomes low due to the cost of e-service increase. Therefore, e-service user satisfaction and e-service related costs have inverse relationship.

H2: Opportunity -> Satisfaction

H2: The opportunities created by using e-service is positive hypothesized relationship with user satisfaction on e-service platform.

Opportunity has a positive impact on customer's satisfaction supported by the e-Trade portal user's dataset. The relation characterized by positive β coefficient and significant p value that confirms acceptance of the hypothesis. The hypothesis opportunity with satisfaction has been supported on the e-trade portal users dataset for $\beta = 0.35$ significant at $p<0.05$. This indicates that if someone uses e-Trade portal to perform particular task the boosted opportunities like incentives and special tools have positive impact on satisfaction of users on the portal. Though the result supports the initial assumption of COBRA, (Osman, et al., 2014) has similar findings that accepted the positive hypothetical relationship between opportunity and satisfaction, they found (0.67). The basic ground of this hypothetical relationship was the e-service provided opportunities has significant factor on satisfaction of users of the e-service (Zahir, 2008), (Osman, et al., 2014), and (Irani, et al., 2012). In addition the result confirms in accordance of the initial COBRA findings of empirical tests confirmed (Osman, et al., 2014).

H3: Benefit -> Satisfaction

H3: There is positive relationship between e-service benefits and the higher user satisfaction on e-service platform

The third hypothetical relationship is between benefit and satisfaction stated, as 'There is positive relationship between e-service benefits and the higher user satisfaction on e-service platform. It basis the assumption of customers' degree of perceiving e-service important benefits tangible and intangible benefits (Osman, et al., 2014) and (DeLone & McLean, 2003). The researchers (Osman, et al., 2014) and (Irani, et al., 2012) also support the idea of benefits on satisfaction and found path value of (0.58). However, the empirical evidence of positive β coefficient and significant p value found from testing the model on the e-Trade portal user's dataset gained that 0.33 this value showed that supported relation between benefit and satisfaction. The result is almost similar with that of (Osman, et al., 2014). "COBRA framework to evaluate e-government services: A citizen-centric perspective" research work done by (Osman, et al., 2014) on Turkey e-service users studied the impact of benefits on satisfaction.

H4: Risk -> Satisfaction

H4: The risk related with using e-service platform is negative hypothesized relationship with user satisfaction on e-service platform.

The fourth hypothetical relationship is between risk and satisfaction, which described as probability of e-service related risks negatively, affects citizen's satisfaction on e-service platforms. However, this research finding on the compiled e-Trade portal user's dataset revealed that the assumption not supported among the studied population of the current study. The relationship between risk and the users satisfaction was characterized by $\beta = 0.10$ and no significant at p value of 0.05. However, the related researcher done by (Osman, et al., 2014) have found (-0.04) negative relation between risk and the satisfaction.

Finally, three items in the cost, opportunity, and benefit dimensions significantly explain the variance of the three constructs toward e-service user's satisfaction. Hypotheses, H1, confirmed as cost have a significant positive effect on user's satisfaction based on the e-Trade portal user's data. This means that cost are significant predictors of user's satisfaction. Similarly, H2 and H3

also confirmed the hypothesis that benefit and opportunity have a significant, positive effect on user's satisfaction. The positive, significant relationships between benefit and opportunity suggest that both benefit and opportunity are important predictors of user satisfaction. However, opportunity was a slightly stronger predictor of satisfaction ($\beta = 0.35$) than benefit ($\beta = 0.33$). The risk dimension in this study cannot gain significance support to explain user's satisfaction.

Goodness-of-Fit (GOF)

GOF used as an index for the complete model fit to test that the model sufficiently explains the empirical data (Henseler, Ringle, & Sinkovics, 2009). According to (Hair, et al., 2017)The GOF values lie between 0 and 1, where values of 0.10 (small), 0.25 (medium), and 0.36 (large) shows the global validation of the path model. A good model fit shows that a model is parsimonious and plausible (Henseler, Ringle, & Sinkovics, 2009). The GOF calculated by using the geometric mean value of the average communality (AVE values) and the average R^2 value, and the GOF of the model is calculated by the following equation (Henseler, Ringle, & Sinkovics, 2009).

$$GOF = \sqrt{\text{Average } R^2} * \text{Average communality (AVE)}$$

The GOF index for this study model measured as 0.73, which indicates that empirical data fits the model satisfactory and has substantial predictive power in comparison with baseline values.

4.7 Analysis on Moderators' Effect

Testing for moderators' effect is not the intention of this study; however, we extended the analysis to verify the moderating effects of age and gender on our model to indicate the possibility of further modification of the COBRA model in future works. In COBRA, the relation between opportunity and satisfaction was stronger. The suggested dimension by (Henseler, Ringle, & Sinkovics, 2009) the non-parametric approach to measure the moderator effect is by performing a different PLS test for different group. PLS multi-group analysis (PLS-MGA) technique has used. This approach (Hair, Black, Babin, & Anderson, 2009) recommended, as it is much suitable for testing categorical moderator variables. Since, gender is purely categorical, and age represented as categorical variable using pre-defined age ranges, MGA approach used for testing such effects.

To apply PLS-MGA on gender as moderating variable, the pooled dataset split in to two groups for 'female' and 'male' using SPSS case-based selection. Likewise, the dataset also split in to two

groups based on age groups as the first group whose age were below 40 years and the second group whose age value were above 41 years. Before doing the actual MGA, all measurement tests conducted using the SmartPLS on separate dataset. These test results were acceptable as (Hair, Black, Babin, & Anderson, 2009)recommended that each dataset must be meet rule of thumb for sample size and meet the threshold values for reliability and validity.

Once the measurement tests granted, the standard inner model assessment and bootstrapping applied to test moderation effects on each sub-group datasets. As a result, gender found, as it has no significant moderating effect on supported positive relation of the refined model. However, age has a dim significant moderating effect for opportunity on satisfaction in which opportunity has a slightly stronger effect on the younger group. Regarding to the new R^2 values, though the specific group R^2 values in general are larger than the results found before the dataset split, but slight difference exhibited among the two gender groups. The R^2 for satisfaction became 81% and 76% respectively for the male group and for the female group.

Table 4.12 Change on R^2 values per gender group

Dependent Variable	The whole group (before splitting per gender)	Male group	Female group
Satisfaction (R^2 Values)	79%	81%	76%

However, these R^2 values had noticeable differences between the two age-based groups. R^2 for satisfaction became 83% and 71% respectively for the older group and for the younger group.

Table 4.13 Change on R^2 values per age group

Dependent Variable	The whole group (before splitting per Age)	Age group below 40 years	Age group above 40 years
Satisfaction (R^2 Values)	79%	83%	71%

4.8 Discussions on Findings of the Study

The path modelling has tested in e-Trade user's dataset. SmartPLS procedure and COBRA model has used for analysing the results and interoperate the findings. For both models structural model and measurement model, repeated tests have made to see how the proposed model fits to the sample dataset. For the measurement model assessment reliability tests IR and ICR have been found acceptable results for e-Trade portal user's dataset as suggested by (Henseler, Ringle, &

Sinkovics, 2009) and (Wong, 2013). Convergent and discriminant validity assessed to check how well the indicators were converged to their construct and at the same time not indicating something else. Discriminant validity assessed and the result meet the requirement by comparing the square roots of AVE values with the corresponding paired correlation values. AVE values dominantly used to check these validities and almost in all cases, the results were satisfactory. Cross-loadings used to check whether the perfect diagonal has occurred that high discriminant validity.

The structural model assessment conducted through R^2, f^2 and Q^2 tests and path coefficient analysis. Table 4.14 shows that the compiled result for structural model assessment. Regarding to the structural model assessment in e-Trade users dataset, (R^2) coefficient of determination is nearly 79% for explaining the variance in satisfaction. The degree of explained variance (R^2) strong for endogenous variables on e-Trade portal user's dataset. From prior works, we can found almost similar findings and results. According to (Osman, et al., 2014)works shows the explained variance is 67% it is strongly confirms this work finding. This indicates that the model is fit. Moreover, the (Q^2) which is predictive relevance of the model is substantially high (0.48) this indicates the model is capable to predict unknown indicators of the independent variables. The Cohen's effect size (f^2) has weak to slightly moderate impact due to very small change in adjusted R^2 values. The summary of structure model assessment described in table 4.14.

Table 4.14 the structural model assessment compiled result for the study

Model Constructs	**Path coefficients(β)**	**R Square(R^2)**	**Q square (Q^2)**	**F Square (f^2)**	**Adjusted R^2**	**GoF**
Cost	0.25			0.03		
Opportunity	0.35			0.15		
Benefit	0.33			0.08		
Risk	0.10			0.05		
Satisfaction		0.79	0.48	0.03	0.38	0.73

On other hand, the path coefficient measurement conducted in e-Trade user's dataset has shown confirmation/rejection of the initial assumptions of all four hypotheses. The significance of path coefficient loads tasted by the bootstrap technique with the same number of cases in the sample. The result of the test of significance of the theoretical model (p value) revealed the need to remove

the risk construct, since its relationship with the variable satisfaction was not significant (p value <0.05). With the removal of this variable, the final model obtained see Figure 4.2. The path coefficient analysis indicates that, out of the four assumed hypothetical tests, three of them confirmed and one rejected. In addition, the satisfaction of the e-service user according with the e-Trade portal user's opportunity found as the high influential factor next benefit is influential factor and then cost. The risk dimension is not significant and removed from the model for current users and from the current case.

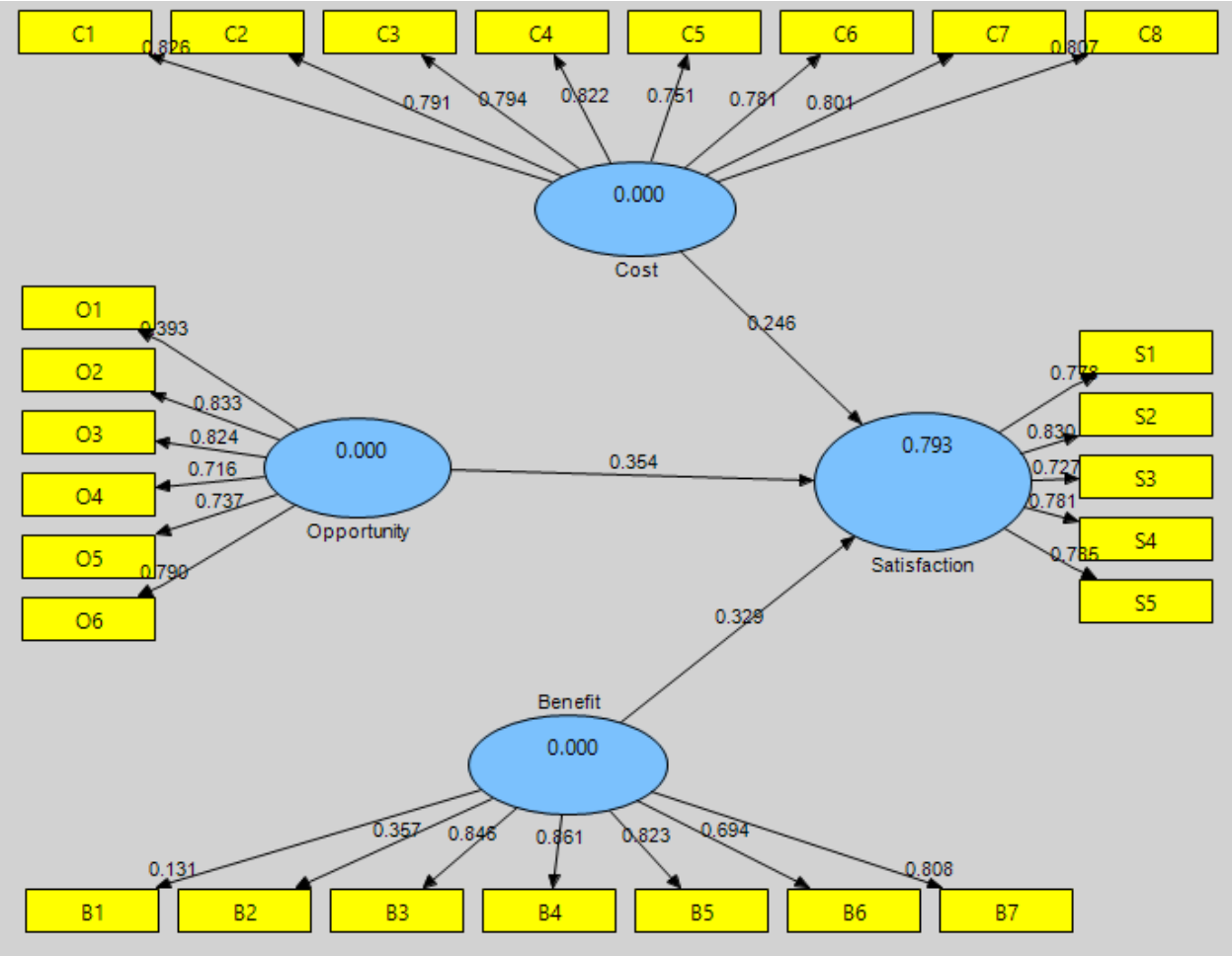


Figure 4.2 the updated model based on the e-Trade users data (author)

Hypotheses, H1, cost have a significant positive effect on user's satisfaction based on the e-Trade portal user's data. This means that cost is significant predictors of user's satisfaction. This done through by accepting the alternative hypothesis rejecting the null one. Similarly, H2 and H4 also confirmed the hypothesis that opportunity and benefit have a significant, positive effect on user's

satisfaction. The positive, significant relationships between opportunity and benefit and suggest that variables are important predictors of user satisfaction. However, opportunity was a slightly stronger predictor of satisfaction ($\beta = 0.35$), benefit ($\beta = 0.33$), and cost ($\beta = 0.25$). The significance of risk not confirmed may be due to the perception of risk in present case not gain great emphasis by users of the portal they give great emphasis for benefits and related cost not for security related portal issues. What must take into consideration is that e-service is in an initiation phase and still unavailable in large scale in Ethiopia, beside that the participants do not have perception about online transaction and payment risks (Zhang, Zhu, & Liu, 2012). On this, it suggested to maintain the risk in the e-service value assessment to adopt model in future work fully, given the importance of this variable, which shown in use experiences.

The results of the study in light of research questions, which intended to answer, explained accordingly. The first research question raised at onset of the study was, "How e-services creates value for users?" In relation to this research question by performing PLS algorithm using structural model assessment opportunity, benefit, cost, and risk, constructs of the study expressed path coefficient of 35%, 33%, 25%, and 10% respectively on customer satisfaction points toward. The result shows that customer satisfaction is highly dependent on e-service opportunities, benefits, and related cost. The risk variable removed from the model for the current study because cannot gain significance. For e-service, users providing benefit and reducing cost show that economic theory (cost–benefit) is a useful tool to determine user satisfaction. Furthermore, using the opportunity analysis provides boosting opportunity create additional insight on maximizing of user satisfaction. Therefore, from this e-service can create value for citizens by boosting opportunities, providing benefits, and reducing cost of the e-service.

The second research question was, "What are the KPIs that influence e-services satisfaction?" In relation to this, in the COBRA model assessment the R^2 value of prediction by the –SEM-PLS path model found to be 79% of the customer satisfaction, which is substantial value. This shows that, statistically, there is a positive and strong correlation between model constructs and citizen's satisfaction. Hence, opportunity, benefit, and cost has high influence on citizen's satisfaction. Opportunity, benefit, and cost are KPIs that influence e-services satisfaction from citizen's perspective. The related studies also shows the fact (Osman, et al., 2014) that accounts 76% from Turkey e-service user's context.

The third and last research question was, “How do we assess the value of e-service?” e- service have many important aspects to users it is obvious. The technological advancements coupled with delivering quality e-services, facilitated tasks like trade registration and licencing, paying taxes. These operations are often the most tangible interactions citizens have with their government. This phenomenon occurs in worldwide and provides individuals more flexibility and convenience in carrying out their daily activities. However, it is still unable to meet the public’s expectations. The problem is that despite their best initiatives, the government continues to model and provide services based on their own requirements and processes instead of the needs of the people they serve. Citizen centricity is about shifting the focus of government around and designing portals from the viewpoint of the citizen requirements, satisfaction and their business success (Rowley, 2011). The e-service portals should take care of the needs of the citizen and business rather than operational or other related issues inside the government e-service delivery. To restore this citizen centricity e-service delivery assessing the value of e-service on citizen’s perspective is not necessary it is urgent issue. Evaluating the level of the user’s satisfaction on e-service able to assess the value of e-service.

4.9 Summary on Evaluation of Measurement and Structural Model

The overall model validating process done on e-Trade portal user’s dataset. The e-Trade portal users’ dataset (n=290) was used for further analysis purpose. From this IR and ICR has been met 0.7 for reliability measures, convergent validity were met 0.5, and discriminant validity achieved.

The structural model measurement indicates high level determination coefficient in which R^2 measures found to be 79% to explain the variance in satisfaction by other exogenous LVs. The predictive relevance of the model evaluated by Q^2 in which strong predictive relevance gained for the applied model on e-trade user’s dataset, which is 48%. Moreover, the path coefficient analysis indicates that, out of the four assumed hypothetical tests, three of them confirmed. One cannot gain support due to its significance in the current study. The supported hypotheses are:

H1: E-service cost has a negative relationship with user satisfaction on e-services platform.

H2: The opportunities created by using e-service is positive hypothesized relationship with user satisfaction on e-service platform.

H3: There is positive relationship between e-service benefits and the higher user satisfaction.

Based on their beta coefficient value, these factors arranged from the highest to the lowest as: opportunity, benefit, cost, and risk, respectively on determining customers' satisfaction on e-services in Ethiopian context. Moreover, the satisfaction of the e-service user according with the e-Trade portal user's opportunity found as the high influential factor next benefit is influential factor and cost influential factor relatively. The findings of this study almost confirms the findings of the related study done by (Osman, et al., 2014) in Turkey e-service user's context.

4.10 Generalizability and Replication of the Study Model

This study applied the COBRA model and the proposed scale with various sample to apply in developing country like Ethiopia. Almost the same results gained from the e-Trade portal user's dataset. From this, we can generalize the COBRA framework is best alternative model to evaluate the satisfaction of users on e-services. While we used general e-services, users sample respondents from government agencies, which is MOTI to assess COBRA's generalizability and applicability to specific e-services users. Data from e-Trade users used for the study that included 290 valid responses. In particular, the analysis, tested, and validated results indicates general applicability of the framework the relative significance of the cost, benefit, and opportunity dimensions, lack of support for the risk dimensions. Overall, we expected that the adopted study model to be generally applicable to multiple levels as the model and measures designed to provide this generality. This prediction examined through several indicators tests and analysis.

- Tested path coefficients (β values) are all positive and three LVs become significant and in the predicted directions results indicated that the three model's path coefficient was significant and in the predicted direction one LV which is risk is not significant.
- The model's ability to explain the importance of LVs in the model, especially overall user satisfaction. The tested model explained a considerable proportion of the variance for overall user satisfaction on e-service platform, R^2 measures scores 0.79 which is substantial value related works were achieved relatively same result.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1 Introduction

This is the last chapter of this study. It tried to present the conclusions of the research findings with their contribution, limitations of the study, recommendations derived from the data analysis and discussion, and future research directions.

5.2 Conclusion

E-service involves many participants each of them has different interests and aims that would have an effect on the success of e-services. Citizens/users are the main and most important stakeholder of e-government activities. Accordingly, their satisfaction level plays a great role in e-service success. Evaluating user satisfaction revived from e-service has been the intention of many researches that proposed different frameworks and models. Although each of them focused on specific aspects of assessment and used different assessment models, they succeeded in identifying some of KPIs that influence user's satisfaction.

This study aims to complement ongoing government initiatives in the field e-service, looking from a perspective of the citizen, thus providing a closer fit to the citizens' needs to develop and provide tools for its assessment. In this study, the COBRA model validated to that factors affecting the satisfaction of users based on various constructs that are necessary to understand to improve the value of e-service and its outcomes. The e-service initiatives and user satisfaction related factors observed to be the most dominant and significant constructs. Therefore, the government organization especially the case ministry should pay more attention for these three constructs with a high beta coefficient as they were imperative constructs of the user satisfaction on e-service that should focused on. Moreover, the opportunity, benefit, and cost related factors also found to have a strong and positive effect on user satisfaction. The research attempted to assess e-service value using COBRA model with insights and critical assessment into citizen's satisfaction. Reconstructing user benefit and adding user cost show that economic theory (cost–benefit) is a useful dimension to determine citizen satisfaction. However, using the risk–opportunity analysis provides additional insight on evaluation of user satisfaction. Hence, the adopted model COBRA designed, in particular, to focus analysis on the cost, opportunity, benefit and risk baseline.

To evaluate e-services using the COBRA model that developed, tested, and validated on a sample of e-services users in Turkey. Thus, we can use the model and assess the impacts of e-service from the user perspective in Ethiopia and elsewhere. It is worth noting that the COBRA model does have a counterpart in other frameworks and approaches for evaluating the success of e-services. The study stressed that the adopted model provides a comprehensive assessment for any e-service, since it encompasses features that evaluate e-services' value, quality, and opportunity. Finally, although there is no previous study in our country that directly applied the suggested framework, but the results of this study are consistent with those reported by previous studies in different countries such as (Zahir, 2008) and (Osman, et al., 2014). The main purpose of the study is to identify the success factors in e-service MOTI Ethiopian .The results of study achieve by identifying the factors and validating the adopted model.

In general, the user satisfaction on e-service launched by MOTI influenced by three constructs, these constructs explained 79.3% of the variance in satisfaction with a significant relationship explained by beta values. The GOF of the model was 0.73. In this paper COBRA model adopted, analysed, and validated in Ethiopia context from e-Trade portal user's dataset. From this predictive relevance of the model was tested by using predictive relevance Q^2 value by performing blindfolding algorithm with an arbitrary setting of omission distance 7, Q^2 has been found 0.48 for satisfaction that indicates high degree of predictive relevance according to (Garson, 2016). The study enhanced the expansion of research in the area of e-service assessment and helped gain a better understanding of the user satisfaction on e-services.

5.3 Contribution of the Study

This study, attempts to fill the gap in regards to concerns, which have not addressed in previous research works. On top of this, the research model COBRA highlighted the relationship between e-service values on user satisfaction. Based on that, the theoretical and practical contribution of this work described in the list below.

Theoretical Contribution

- This study contributes to the existing literature by testing and validating the COBRA model with data from developing country sample. An important theoretical contribution of this research is testing the model in Ethiopian context that has different cultural context.

However, the model tested in different countries dominantly in Asia, and some in Europe, it not well tested in least developed countries. The research extends the applicability of the original model in one more country, which has diversified culture and society.

- Another important contribution of this study originates from the confirmed findings of the study from related works. Almost in all previously made researches, opportunity has found as strong determinant factor of the citizen's satisfaction. However, the confirmed result calls the researchers to use the COBRA model in different situations. The study contributes to the foundational theoretical framework it can be used in future empirical researches for researchers who might be interested to work in a related topic. The ability to apply such tools in the field of e-government would assist in the development and maturity of citizen-centric view of future e-government efforts. Thus, it is the first study in our country in e-service satisfaction scale development. Results show that COBRA is stable across e-government service groups and user traits, demonstrating strong generalizability except the risk construct that not gain support in current situations of e-service users of MOTI.
- It empirically tests a cost, opportunity, benefit, risk, analysis (COBRAs) framework for assessing e-service value from citizen's perspective. Using deductive methods, this study contributes theoretically to the e-service evaluation domain by adopting a conceptual model from related studies by doing empirical findings the result of the study confirms the related study findings. Compared to past studies, current results offer more complete coverage and understanding of e-government service success in Ethiopian context. This shows the model is confirms for any other country with different use background and cultural difference and e-service maturity level.

Practical Contribution

Policy makers have a responsibility to provide e-government services that engage and satisfy users. In our country one of the challenging tasks that policy makers face is how to enhance user satisfaction this study helps them and makes the following managerial contributions:

- It provides for ICT directors and organization managers with new insights that might enable them to use COBRA model as corporate strategic positions for better organizational e-service assessment and gain competitive advantage. As the study conducted on the case of

MOTI can use the findings of this research study as an input to appreciate its best practices and restructure its provision of e-service delivery. The insight analysis shows how such satisfaction reached through a balance between the three e-service dimensions: cost, benefit, and opportunity offers a practical means for policy makers to evaluate the success of e-government services; and such analysis allows managers to identify problem areas and concentrate resources on improving those areas. Based on these capabilities, better policies developed for unsuccessful e-government services in our country. For the risk construct must follow their e-service maturity level and the country context.

- In recent years, number of e-service initiatives instantiated by government of Ethiopia. However, new form of service delivery by government should be assesses whether satisfy the stakeholders or not. Hence, the inputs that can be found from this study, while the study remains to be done on the already existing and relatively easier to use and it is all about recently inaugurated e-Trade portal. The study can be relevant and informative for the decision-making process of any other e-service yet to open in the future, in e- service value evaluation. Referring the findings of the model test on the e-Trade portal user's data, the confirmed relations between four exogenous and one endogenous variables helps the practitioners to visualize the relations in the domain of e-service strategic plan formulation.
- According to (Bezu, 2019) Ethiopia scores a low EGDI value since 2003 to 2012 and make a good progress after 2014 up to 2018 become middle level EGDI country. The outcomes of this study may contribute by putting empirical result of satisfaction on e-service. Based on this the research also has significant practical contribution for ministries and organizations in Ethiopia. The most valuable contribution from this research is the evidence of hypothetical relationships between different LVs for organizations to review and redesign their e-service platform to grow the country EGDI in good progress.

5.4 Limitations of the Study

This study has some limitations, which also offer directions for future research. First, the COBRA framework tested and validated in Turkey by (Osman, et al., 2014). The same model used for our country case but there is not that much worrying results outputted but another researcher should be cautious in its application. Due to using international variation to validate further, any framework has limitations user satisfaction related to other unobserved country-factors, such as

general cultural issues or e-government services development strategies and levels, organizational difference and their adoption level. Because in this study case risk cannot gain support in current e-service maturity level. Second, in the COBRA model, the some construct is tangible and can able to measure easily. However, due to technical problems with the e-trade portal we were unable to collect the data by addressing the users easily using online survey. An extension to the current study carried out using online survey with different organization and different users.

Lastly, since the area of the study somehow complex and needs, a serious attention to draw findings it only focuses on the MOTI from Addis Ababa and round areas and type "A" taxpayers that use the portal to perform different business related activities that the portal provides. However, the portal giving service and available at all nation-wide level. The next study will address all regional users and all company representative samples. To overcome this issue the longitudinal survey recommended. Language by which the instrument designed restrain the user who have inability of reading and writing Amharic and/or English, these follows took the questionnaire and honestly explained that they cannot read and write both Amharic and English.

5.5 Recommendations

The recommendation obtained from this study conclusion report shows the initiatives that indicate the situation of e-government services of the public organization is so important and demand to be grown. However, the initiatives provided there should assist the customer and accomplish their expectations. These expectations were the delivery of quality public service, the effectiveness of the public organization, and socially desirable outcomes form e-service. The primary dimensions were measured through the perceptible variables confirmed that the demanded result was accomplished according to the empirical findings of the study on e-government services evaluation of the e-service value. This study initiated recognizing a need for research into an area. The government e-service portals have offered citizens what technology has made possible to deliver, rather than first asking what is it the citizens want delivered to them. Therefore, we have stressed the need to focus on what makes the citizen as a customer satisfied in obtaining the service, and the need to measure such satisfaction. From these it deduced:

- The adopted COBRA framework confirmed as an important model for evaluating the value and/or success of e-services from the users' perspective in Ethiopian context.

- The results of this study indicates that e-service opportunity and benefit are key antecedent to user satisfaction whereas e-service related cost and risk also another dimension that determine citizen satisfaction. Therefore recommended that boosting e-services opportunities and benefits together with reduced e-service costs and risks to maximize user satisfaction. To grow e-service maturity level and to evaluate the value of e-service on user satisfaction making trade-off among opportunity, benefit, cost, and risk is necessary.
- The last recommendation this study for the future research is to conduct the longitudinal research on the E-service value assessment. The findings in this research based on the cross-sectional study that conducted within specified area at a time. However, the perspective of the citizen about the e-service and their satisfaction level is highly influenced by time variation and level of their company that requires conducting similar researches in time interval and in different regions of the country.

5.6 Future Research Directions

The Evaluation of e-government service value assessment is a comprehensive adaptive system, which should include both government and citizen actions and their feedbacks for continual improvement. To overcome the separated and isolated evaluation studies and practices in Ethiopia, this study recommends a holistic view of e-service value to use a comprehensive framework for evaluating the performance of e-services. This study is limited to in one ministry, one group and one-region users of the e-service provided by government the whole justification study done by total surveys discussed in another study.

Utilization of research finding on e-service area not addressed well in least developed countries like Ethiopia. Hence, more research recommended conducting in the area. The last, but not the least recommendation is to encourage e-service assessment researches. It is obvious that different technologies introduced in our day-to-day activities. However, their value on user's satisfaction and modernizing our country not well assessed to make significant enhancements on quality public service delivery. Hence, both academicians and practitioners advised to conduct studies in e-service user's satisfaction level, success, and its maturity for different organizations and agencies by using different models and frameworks.

REFERENCES

Alanezi, M., Kamil, A., & Basri, S. (2010). A proposed instrument dimensions for measuring e-government service quality. *International Journal of u- and e- Service, Science and Technology*.

Anteneh, S., Belachew, M., & Lessa, L. (2011). Sustainability of E-Government project Success: Cases from Ethiopia. *AMCIS 2011 Proceedings - All Submissions*.

Balog, A., Bàdulescu, G., Bàdulescu, R., & Petrescu, F. (2008). E-ServEval: a system for quality evaluation of the on-line public services. *Revista Informatica Economică, 2(46),*, 18-21.

Barbarian, Filgueiras, L., Jr., P. A., Tokairim, V., Torres, C., & Iara. (2006). Usability Evaluation As Quality Assurance Of E-Government Services. *University of São Paulo*.

Belachew, M. (2010). E-Government Initiatives in Ethiopia. *ICEGOV2010, October 25-28,*. Beijing, China: ACM.

Beynon-Davies, P. (2005). Constructing Electronic Government: The Case of the UK Inland Revenue. *International Journal of Information Management (25:1),* , 3-20.

Bezu, A. H. (2019). E-government in Ethiopia. *Near East University*.

Blau, P. (1964). Exchange and power in social life. *New York: John Wiley & Sons.*

Chen, Y.-C. (2010). Citizen-centric E-government Services: Understanding Integrated Citizen Service Information Systems . *Social Science Computer Review, 28 (4)* , 427-442.

Colesca, S. (2009). Understanding Trust in e-Government. *Inzinerine Ekonomika-Engineering Economics, (3)*, 7-15.

DeLone, W., & McLean, E. (2003). The DeLone and McLean model of information systems success: A ten year update. *Journal of Mnagement Information Systems, Vol. 19 No. 4*, 9-30.

Deng, H., & Kanishka, K. (2010). Testing and Validating a Conceptual Framework for Evaluating the Public Value of e-Government using Structural Equation Modelling. *21st Australasian Conference on Information Systems.* Brisbane.

Eshetu, S. T. (2015). The Practice, Challenges and Prospects of e-Government:The case of Ethiopian Revenue and Customs Authority (ERCA) Large Taxpayers Office (LTO). . *Unpublished Thesis*.

FDRE, G. (2016). Growth and Transformation Plan II. *FDRE, Addis Ababa, Ethiopia.*

FDRE, M. (2019). Introducing fundamental change in trade registration and licensing services:.

Floropoulos, J., Spathis, C., Halvatzis, D., & Tsipouridou, M. (2010). Measuring the success of the Greek Taxation Information System. *International Journal of Information Management, 30 (1)*, 47-56.

Foley, P., & Alfonso, X. (2009). e-Government and the Transformation Agenda. *Public Administration, 87 (2)*, 371-396.

Fornell, C., Johnson, M., Anderson, E., Cha, J., & Bryant, B. (1996). The American Customer Satisfaction Index: Nature, Purpose, and Findings. *The Journal of Marketing 60 (4)*, 7-18.

Garson, G. D. (2016). *Partial least squares: Regression and structural equation models.* . Statistical Associates Blue Book Series.

Golubeva, A. (2007). Evaluation of Regional Government Portal on the Basis of Public Value Concept: Case Study from Russian Federationpp 394-397. Study from Russian Federation, . *International Conference Proceeding Series, (232),* (pp. 394-397.). ACM.

Gorla, N., Somers, T., & Wong, B. (2010). Organizational impact of system quality, information quality, and service quality. *Journal of Strategic Information Systems, 19,*, 207–228.

Grimsley, M., & Meehan, A. (2007). e-Government information systems: Evaluation-led design for public value and client trust. European Journal of Information Systems. *An Official Journal of the Operational Research Society 16(2)*, 134–148.

Ha, H.-Y., Swinder, J., & Muthaly, S. K. (2010). A new understanding of satisfaction model in e-re-purchase situation. *European Journal of Marketing*.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). Multivariate Data Analysis. *Pearson*.

Hair, J. F., Hult, G., M., T., Ringle, M., C., & Sarstedt, M. (2017). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM),. *Sage: Thousand Oaks.*

Hamed, T. (2016). Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research. *International Journal of Academic Research in Management (IJARM) Vol. 5, No. 2, ISSN: 2296-1747*, 18-27.

Heeks, R. (2008). Benchmarking e-Government: Improving the national and international measurement evaluation and comparison of e-Government. *Evaluation of Infromation Systems*.

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modelling in international marketing. *Advances in International Marketing, 20, doi:10.1108/S1474-7979(2009)0000020014*, 277-319.

Hoffman, K. (2003). Marketing + Mis = E-Service. . *Communications of the ACM 46(6)*, 53–55.

Irani, Z., Weerakkody, V., Kamal, M., Hindi, N., Osman, I., Anouze, A., . . . Al-Ayoubi, B. (2012). An analysis of methodologies utilised in e-government research: A user satisfaction perspective. *Journal of Enterprise Information Management, 25 (3)*, 298 -313.

Jackson, E. S., Joshi, A., & Erhardt, N. L. (2003). Recent Research on Team and Organizational Diversity: SWOT Analysis and Implications. *Journal of Management 29(6)*, 801–830.

Jaeger, P., & Bertot, J. (2010). Designing, Implementing, and Evaluating User-centered and Citizen centered E-government. *nternational Journal of Electronic Government Research, 6(2)*, 1-17.

Jang, C.-L. (2010). Measuring Electronic Government Procurement Success and Testing for the Moderating Effect of Computer Self-efficacy. *International Journal of Digital Content Technology and its Applications, 4 (3)*, 224-232.

Kearns, I. (2004). Public Value and E-Government. *Institute for Public Policy Research www.ippr.org*.

Kelly, M. (2003). Creating Public Value, Strategy Unit,. p.11.

Ken, B. (2004). *Business Statistics for Contemporary Decision Making* . Wiley-India: (Fourth (Wiley Student Edition for India).

Khayri, O., Scheepers, H., & Stockdale, R. (2011). eGovernment Service Quality Assessed through the Public Value Lens. *IFIP International Federation for Information Processing 2011 EGOV 2011*, 431–440.

Kothari, C. R. (2014). *Research Methodology: Methods and Techniques.* New Delhi India: New Age International Publishers.

Lessa, L. (2015). Sustainability Framework for E-Government Success: Case of WoredaNet Services in Ethiopia. *Unpublished Thesis*.

Lessa, L., & Tsegaye, A. (2019). Evaluation of the Public Value of E-Government Services in Ethiopia: Case of Court Case Management System. *International Conference on Theory and Practice of Electronic Governance (ICEGOV)*.

Lessa, L., Negash, S., & Amoroso, D. L. (2011). Acceptance of WoredaNet E-Government Services in Ethiopia: Applying the UTAUT Model. *AMCIS 2011 Proceedings (p. Paper 112)*.

Lincoln, K., & Wilson, A. (2017). A review of citizen-centric models for evaluating e-government services: A Kenyan perspective. *International Journal of Latest Research in Engineering and Technology (IJLRET)*, 148-154.

Lowery, P. B., & Gaskin, J. (2014). Partial least squares (PLS) structural equation modeling (SEM) for Building and Testing Behavioral Causal Theory: When to choose it and how to use it. *IEEE Transactions on Professional Communication, 57(2)*, 123-146.

Magoutas, B., & Mentzas, G. (2010). SALT: A semantic adaptive framework for monitoring citizen satisfaction from e-government services. *Expert Systems with Applications, 37 (6)*, 4292-4300.

Magoutas, B., Chalaris, C., & Mentza, G. (2009). A semantically adaptive interface for measuring portal quality in e-government. Adaptation and Personalization Systems and Technologies . *Information Science Reference*, 147–166.

McLean, E., & DeLone, W. (1992). Information Systems Success: The Quest for the Dependent Variable. *Information Systems Research 3(1)*, 60-95.

Mehdi, A. (2005). The Effectiveness of e-Service in Local Government: A Case Study. *Faculty of Commerce, C.P.I.T., Christchurch, New Zealand* .

Mengesha, G., & Common, R. (2007). Civil Service Reform in Ethiopia: Success in two ministries. *public administration and development*.

Mentzas, G., & Papadomichelaki, X. (2009). A Multiple-Item Scale for Assessing E- Government Service Quality. *Springer Verlag Berlin Heidelberg LNCS 5693*, 63–175.

MoTI. (2021). Online Trade Registration and Licensing System. *www.motin.gov.et*.

MoTI, F. (2019). Introducing fundamental change in trade registration and licensing services:.

Oliver, R. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research, 17 (11)*, 460-469.

Osman, I. H., Abdel Latef Anouze, Irani, Z., Habin Lee, Asım Balcı, Medeni, T. D., & Weerakkody, V. (2011). A new COBRAS framework to evaluate e-government services: a citizen centric perspective. *tGov Workshop'11 (1GOV11) Brunel University, West London,*.

Osman, I., Anouze, A. L., Irani, Z., Al-Ayoubi, B., Lee, H., Balcı, A., . . . Weerakkody, V. (2014). COBRA Framework to Evaluate E-Government Services: A Citizen-Centric Perspective. *Government Information Quarterly*.

Papadomichelaki, X., & G, M. (2012). e-GovQual: A multiple-item scale for assessing e government service quality. *Government Information Quarterly 29*, 98-109.

Parasuraman, A. V., Zeithaml, A., & Malhotra, A. (2005). E-S-QUAL: A Multiple-Item Scale for Assessing Electronic Service Quality. *Journal of Service research 7*, 213–234.

Parasuraman, V., Zeithaml, A., & Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing, 64 (1)*, 12-40.

Petter, S., & McLean, E. R. (2009). A meta-analytic assessment of the DeLone and McLean IS success model: An examination of IS success at the individual level. *Inf. Manag., vol. 46, no. 3*, 159–166.

Piotr, Z., Doligalski, T., & Sylwia, S.-R. (2013). Value Creation in E-Business and Financial Performance: Researching Polish Online Companies with Amit and Zott's Model. *4th EMAC Regional Conference*, (pp. 25-27). Petersburg.

Rasyid, A., & Alfina, I. (2017). E-Service Quality Evaluation on E-Government Website: Case Study BPJS Kesehatan Indonesia. *Journal of Physics: Conference Series.*

Raus, M., Liu, J., & Kipp, A. (2010). Evaluating IT innovations in a business-to-government context: A framework and its applications . *Government Information Quarterly 27(2)*, 122–133.

Rotchanakitumnuai, S. (2008). Measuring e-government service value with the E-GOVSQUAL-RISK model. *Business Process Management Journal, 14(5)*, 724-737.

Rowley, J. (2011). e-Government stakeholders- Who are they and what do they want? *International Journal of Information Management, doi:10.1016/j.ijinfomgt.2010.05.005*.

Sakowicz, M. (2003). Electronic Promise for Local and Regional Communities. *LGB Brief, Winter*, 24-28 .

Saunders, M., Lewis, P., & Thornhill, A. (2016). *Research Methods for Business Students.* London: Pearson Education Limited.

Sharma, S., Al-Shihi, H., & Govindaluri, S. (2013). Exploring quality of e-Government services in Oman Education. *Business and Society: Contemporary Middle Eastern Issues 6*, 87-100.

Stephanie, G. (2021, February). *Systematic Sampling: Definition & Examples + Repeated.* Retrieved from StatisticsHowTo.com: https://www.statisticshowto.com/systematic-sampling/

Sulieman, I., Shelash, A.-H., & Saleh, M. A.-M. (2016). The Quality of E-Government Services and its Role on Achieving Beneficiaries Satisfaction. *Global Journal of Management and Business Research: A Administration and Management Volume 16 Issue 11 Version 1.0.*

Udo, G., Bagchi, K., & Kirs, P. (2008). Assessing Web Service Quality Dimensions: The E- Service Approach. *Issues in Information Systems, 11(2),* 313-322.

UN. (2018). *United Nations E-Government Survey.* New York: UN Public Administration.

Urbach, N., & Ahlemann, F. (2010). Structural equation modeling in information systems research using partial least squares. *Journal of Information Technology Theory and Application, 11(2),* 5-40.

Van Ryzin, G., Muzzio, D., Immerwahr, S., Gulick, L., & Martinez, E. (2004). Drivers and Consequences of Citizen Satisfaction: An Application of the American Customer Satisfaction Index Model to New York City. *Public Administration Review, 64 (3),* 331-341.

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly, 36(1),* 157-178.

Verdegem, P., & Verleye, G. (2009). User-centered E-Government in practice: A comprehensive model for measuring user satisfaction. *Government Information Quarterly, 26 (3),* 487-497.

Wang, Y.-S., & Liao, Y.-W. (2008). Assessing eGovernment systems success: A validation of the DeLone and McLean model of information systems success. *Government Information Quarterly 25(4),* 717–733.

Weerakkody, V., Irani, Z., Lee, H., Osman, I., & Hindi, N. (2013). E-Government Implementation: A Bird's Eye View of Issues Relating to Costs, Opportunities, Benefits and Risks. *Information Systems Frontiers*, 1-27.

Wong, K. K. (2013). Partial least squares structural equation modeling (PLS-SEM) techniques using SmartPLS. *Marketing Bulletin, 24(1),* 1-32.

WorldBank. (2009). World e- government Indicators.

Zahir, I. (2008). COBRAS Framework to Evaluate E=government Services: A Citizen Centric. *Brunel Business School, Brunel University, UK*.

Zeglat, Dia, & Sara, T. (2014). Assessing the Importance of E-SQ Dimensions and Attributes: Perspective of Facebook's Users. *International Business Research; Vol. 7, No. 7*.

Zeithaml, V., Parasurarnan, A., & Malhotra, A. (2002). Service quality delivery through websites: a critical review of extant knowledge. *Journal of the Academy of Marketing Science 30(4), 362*.

Zeleke, Y. (2018). Usability and Accessibility Model for E-Government Websites in Ethiopia. *Addis Ababa University theis* .

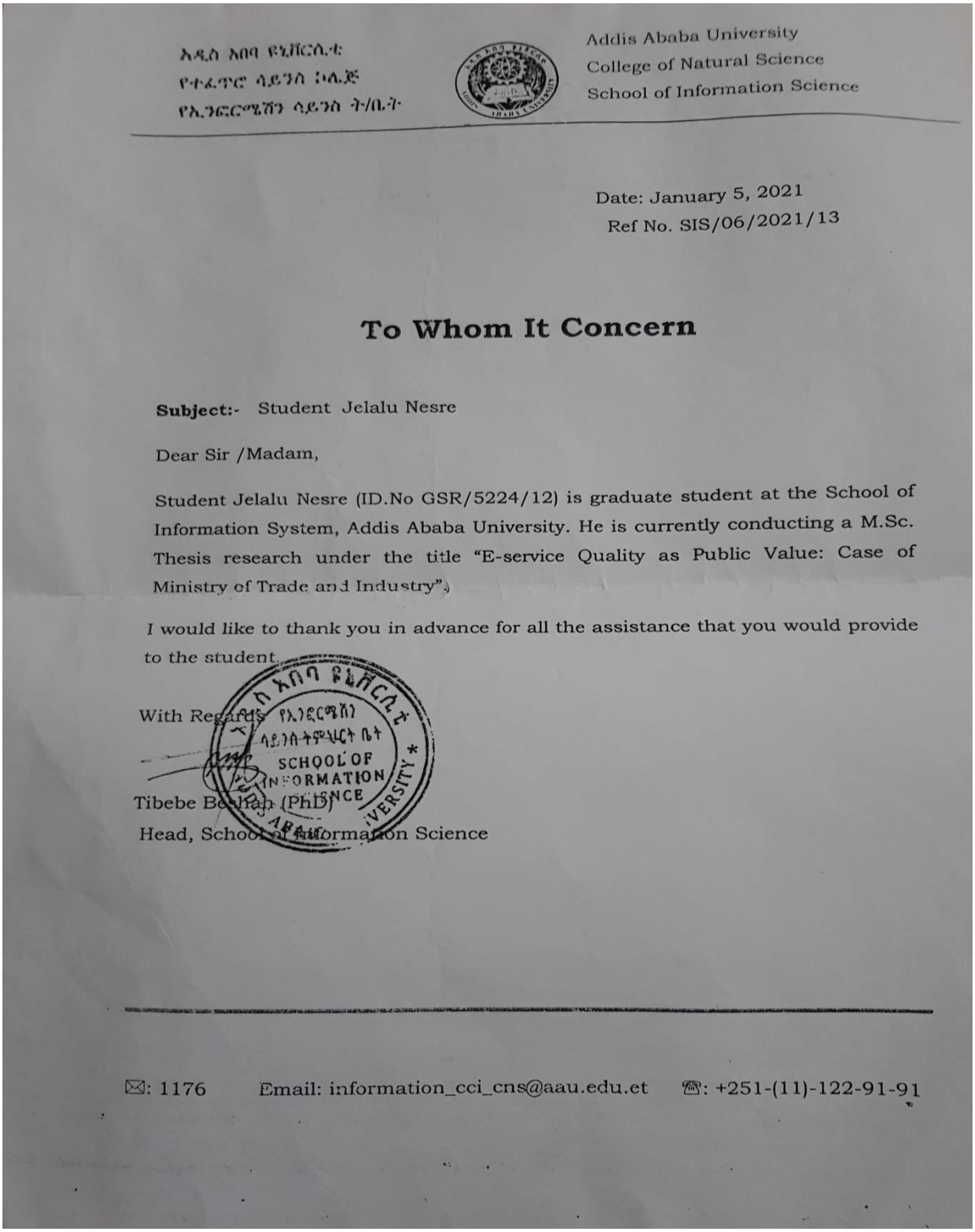
Zhang, L., Zhu, J., & Liu, Q. (2012). A meta-analysis of mobile commerce adoption and the moderating effect of culture. *Computers in Human Behavior 28(5)*, 1902–1911.

Zhang, X., & Prybutok, V. (2005). A Consumer Perspective of E-service Quality. *IEEE Transactions on Engineering Management, 52(4)*, 461-477.

Zolkiewski, J., Story, V., Burton, J., Chan, P., Gomes, A., Hunter-Jones, P., . . . Robinson, W. (2017). Strategic B2B customer experience management: the importance of outcomes-based measures. *Journal of Services Marketing*, 172-184.

APPENDICES

Appendix A. Support Letter from School of Information Science



አዲስ አበባ ዩኒቨርሲቲ
የተፈጥሮ ሳይንስ ኮሌጅ
የኢንፎርሜሽን ሳይንስ ት/ቤት

Addis Ababa University
College of Natural Science
School of Information Science

Date: January 5, 2021
Ref No. SIS/06/2021/13

To Whom It Concern

Subject:- Student Jelalu Nesre

Dear Sir /Madam,

Student Jelalu Nesre (ID.No GSR/5224/12) is graduate student at the School of Information System, Addis Ababa University. He is currently conducting a M.Sc. Thesis research under the title "E-service Quality as Public Value: Case of Ministry of Trade and Industry".

I would like to thank you in advance for all the assistance that you would provide to the student.

With Regards

Tibebe Beshah (PhD)
Head, School of Information Science

✉: 1176 Email: information_cci_cns@aau.edu.et ☎: +251-(11)-122-91-91

Appendix B. The English Version of the Survey Questionnaires

Addis Ababa University

School of Graduate Studies

College of Natural and Computational Science

School of Information Science (SIS)

Questionnaire Filled by Users/Customers of Ministry of Trade and Industry Portal (OTRLS)

Dear Respondent,

This is Jelalu Nesre, who is a Master's student of Information Science (Information Systems Specialization) at Addis Ababa University, in School of Information Science. Currently, am undertaking a research project entitled "**E-Service Value Assessment: Case of Ministry of Trade and Industry Portal OTRLS**". You are one of the accredited respondents selected to participate for this study. I understand that your time is valuable, while for the successful accomplishment of the study is rely on your honesty and kindness cooperation, genuine and loyal information response of this questionnaire. That have vital role will used as valuable input for the study. Therefore, I kindly request you to genuinely fill and return this questionnaire.

I assure you that your participation in this study is voluntary, all information you provide and results will be record anonymously, and confidentiality is maintain. It is for only academic purpose. At last, if you have face any problems in filling this questionnaire, you can reach and communicate me via the following addresses anytime.

Jelalu Nesre

+251920959352

Jellyhny.46@gmail.com

General Directions:

1. No need of writing your name and address on the questionnaire
2. For multiple choice questions, please encircle your responses from alternatives
3. For Likert scale type statement use symbol mark of **(X)** or **(√)** in the appropriate space
4. Feel free & attempt all questions please!

Part I, Background Information of Respondents

1. Gender:

   A. Male **B.** Female

2. Age category:

   A. Between 20-30 **B.** between 31-40 **C.** between 41- 50 **D.** Above 51

3. Educational qualification:

   A. MA/MSc Degree and above **B.** BA/BSc Degree **C.** Diploma

   D. TVET certificated **E.** Secondary School complete **F.** Others

4. What is your company mainly operating now:

   A. Trading **B.** Service giving **C.** Manufacturing

   D. Educational sector **E.** Others

5. How do you express your Computer knowledge?

   A. Very Good **B.** Good **C.** Moderate **D.** Poor

6. How do you evaluate your Internet usage skill?

   A. Very Good **B.** Good **C.** Moderate **D.** Poor

7. How often do you visit **www.eTrade.gov.et** ?

   A. Always **B.** Frequently **C.** Sometimes **D.** Never yet visit

Part II, E-government platforms and services usage experience related questions

Based on your experience with the government website **www.eTrade.gov.et** , this section will ask you to indicate to what extent you agree or disagree with the following statements. If you strongly agree with the statement, choose **5** and if you strongly disagree with the statement, choose **1**. No right or wrong answer and the main aim is to know your answer that best reflects your opinion. **1 = Strongly-disagree, 2 = Disagree, 3 = Neutral or no Opinion, 4 = Agree, 5 = Strongly agree.**

S. No	Lists of questions	(1) Strongly Disagree	(2) Disagree	(3) Neutral	(4) Agree	(5) Strongly Agree
Cost Related Questions						
1.	Using the e-service saved me time**.**	**1**	**2**	**3**	**4**	**5**
2.	Using the e-service saved me money**.**	**1**	**2**	**3**	**4**	**5**
3.	The e-service reduces the bureaucratic process**.**	**1**	**2**	**3**	**4**	**5**
4.	The internet subscription cost is reasonable.	**1**	**2**	**3**	**4**	**5**
5.	The e-service reduces my travel costs to get the service	**1**	**2**	**3**	**4**	**5**
6.	It takes a long-time to find my needed information.	**1**	**2**	**3**	**4**	**5**
7.	It takes several attempts to complete the service due to system breakdowns.	**1**	**2**	**3**	**4**	**5**
8.	It takes a long-time to acknowledge the completion of e-service.	**1**	**2**	**3**	**4**	**5**
Opportunity Related Questions						
1.	The Frequently Asked Questions (FAQs) are relevant.	**1**	**2**	**3**	**4**	**5**
2.	The e-service can accessed at any time and where.	**1**	**2**	**3**	**4**	**5**
3.	The e-service allows me to update my records online.	**1**	**2**	**3**	**4**	**5**
4.	The e-service offers tools for users with special needs.	**1**	**2**	**3**	**4**	**5**
5.	The information provided in different languages.	**1**	**2**	**3**	**4**	**5**
6.	There is a strong incentive for using e-service.	**1**	**2**	**3**	**4**	**5**
Benefit Related Questions						
1.	The e-service is easy to navigate.	**1**	**2**	**3**	**4**	**5**
2.	The e-service requires no technical knowledge.	**1**	**2**	**3**	**4**	**5**

3.	The instructions are easy to understand.	**1**	**2**	**3**	**4**	**5**
4.	The information is relevant to my service.	**1**	**2**	**3**	**4**	**5**
5.	The e-service information is accurate.	**1**	**2**	**3**	**4**	**5**
6.	The e-service operations are well integrated.	**1**	**2**	**3**	**4**	**5**
7.	The instructions on performing e-service are helpful.	**1**	**2**	**3**	**4**	**5**
Risk Related Questions						
1.	I am afraid my personal data may use for other purposes.	**1**	**2**	**3**	**4**	**5**
2.	E-service obliges me to keep a record of documents in case of future audit.	**1**	**2**	**3**	**4**	**5**
3.	The e-service may lead to a wrong payment that needs further correction.	**1**	**2**	**3**	**4**	**5**
4.	I worry about conducting transactions online requiring personal financial information.	**1**	**2**	**3**	**4**	**5**
5.	Using e-service leads to fewer interactions with people.	**1**	**2**	**3**	**4**	**5**
Satisfaction Related Question						
1.	I am satisfied with the e-Trade portal characteristics in terms of money and time.	**1**	**2**	**3**	**4**	**5**
2.	I am satisfied with the e-Trade portal related to tangible and intangible benefits.	**1**	**2**	**3**	**4**	**5**
3.	I am satisfied with the e-Trade portal related to e-service opportunities.	**1**	**2**	**3**	**4**	**5**
4.	I am satisfied with the e-Trade portal related to e-service risks.	**1**	**2**	**3**	**4**	**5**
5.	Overall, I am satisfied with the e-Trade portal services.	**1**	**2**	**3**	**4**	**5**

Appendix C. The Amharic Translated Version Constructs and their Indicator Items

አዲስ አበባ ዩኒቨርሲቲ

የድህረ ምረቃ ትምህርት ቤት

የተፈጥሮና ቀመር ሳይንስ ኮሌጅ

የኢንፎርሜሽን ሳይንስ ትምህርት ቤት (SIS)

<u>በኤሌክትሮኒክ መንግስት (ኢ-መንግስት) አገልግሎቶች የተገኘ እርካታን የሚዳስስ ጥናት ለማካሄድ የታዘጋጀ መጠይቅ</u>

<u>ውድ የጥናቱ ተሳታፊ!</u>

እኔ ጀላሉ ነስሬ በአዲስ አበባ ዩኒቨርስቲ በኢንፎርሜሽን ሳይንስ ትምህርት ቤት ውስጥ የመረጃ ሳይንስ (ኢንፎርሜሽን ሲስተምስ ስፔሻላይዜሽን) ማስተርስ ዲግሪ ተማሪ ስሆን፤ በአሁኑ ወቅት "የኢ-ሰርቪስ ዋጋ የተገልጋይ እርካታ ምዘና በንግድና ኢንዱስትሪ ፖርታል ጉዳይ" በሚል ርዕስ የምርምር ፕሮጀክት እያከናወንኩ ነው ። እርስዎ ለዚህ ጥናት እንዲሳተፉ ከተመረጡ የጥናቱ ተሳታፊ ምላሽ ሰጪዎች አንዱ ነዎት ። ጊዜዎ ዋጋ እንዳለው አውቃለሁ ቢሆንም ለጥናቱ ስኬታማነት በሀቀኝነትዎ ላይ የሚመረኮዝ ምላሽ ያስፈልጋል። በዚህ ጥናት ውስጥ ያለዎት ተሳትፎ በፈቃደኝነት መሆኑን አረጋግጥልዎታለሁ ፣ እርስዎ የሚሰጡት መረጃ እና ውጤት ማንነቶን በማያሳውቅ ሁኔታ ይመዘገባል፣ ሚስጥራዊነቱ እንደተጠበቀ ነው፣ ለትምህርታዊ እና ጥናታዊ ዓላማ ብቻ ጥቅም ላይ ይውላል ። በመጨረሻም፣ ይህን መጠይቅ በመሙላት ላይ ችግር ካጋጠሙዎት በማንኛውም ጊዜ በሚከተሉት አድራሻዎች እኔን ማግኘት ይችላሉ።

ጀላሉ ነስሬ

+251920959352

Jellyhny.46@gmail.com

<u>አጠቃላይ አቅጣጫዎች</u>

1. መጠይቁ ላይ ስሞን እና አድራሻዎን መጻፍ አያስፈልግም

2. ለብዙ ምርጫ ጥያቄዎች እባክዎን ምላሾን ከአማራጮቹ ይክበቡ

3. ለ Likert ልኬት አይነት መግለጫ ጥያቄዎች ምላሾን በ (X) ምልክት ወይም (√)ምልክት በተገቢው ቦታ ላይ ያሳዩ

4. ነፃነት ይሰማዎት !

ክፍል I ፣ የጥናቱ ተሳታፊ መነሻ መረጃ

1. ጾታ

ሀ/ ወንድ ለ/ ሴት

2. የዕድሜ ምድብ

ሀ/ ከ 20-30 ለ/ በ 31-40 መካከል ሐ/ በ 41- 50-መካከል መ/ 51 በላይ

3. የትምህርት ደረጃ

ሀ/ ኤም.ኤስ. ዲግሪ እና ከዚያ በላይ ለ/ ቢኤ/ቢኤስሲ ዲግሪ ሐ/ ዲፕሎማ መ/ ቴክኒክና ሙያ ትምህርትና ሥልጠና ሠ/ ሁለተኛ ደረጃ ትምህርት ረ/ ሌሎች

4. ኩባንያዎ በዋናነት አሁን የሚሠራው ምንድነው?

ሀ/ ንግድ ለ/ አገልግሎት መስጠት ሐ/ ማኑፋክቸሪንግ መ/ ት/ቤት ሠ/ሌሎች

5. የእርስዎን የኮምፒተር እውቀት እንዴት ይገልፁታል?

ሀ/ በጣም ጥሩ ለ/ ጥሩ ሐ/ መካከለኛ መ/ዝቅተኛ

6. የእርስዎን ኢንተርኔት አጠቃቀም እውቀት እንዴት ይገመግማሉ?

ሀ/ በጣም ጥሩ ለ/ ጥሩ ሐ/ መካከለኛ መ/ዝቅተኛ

7. www.eTrade.gov.etን በስንት ጊዜ ይጎበኛሉ?

ሀ/ ሁል ጊዜ ለ/ በተደጋጋሚነት ሐ/ አንዳንድ ጊዜ መ/ በጭራሽ አልጎበኝም

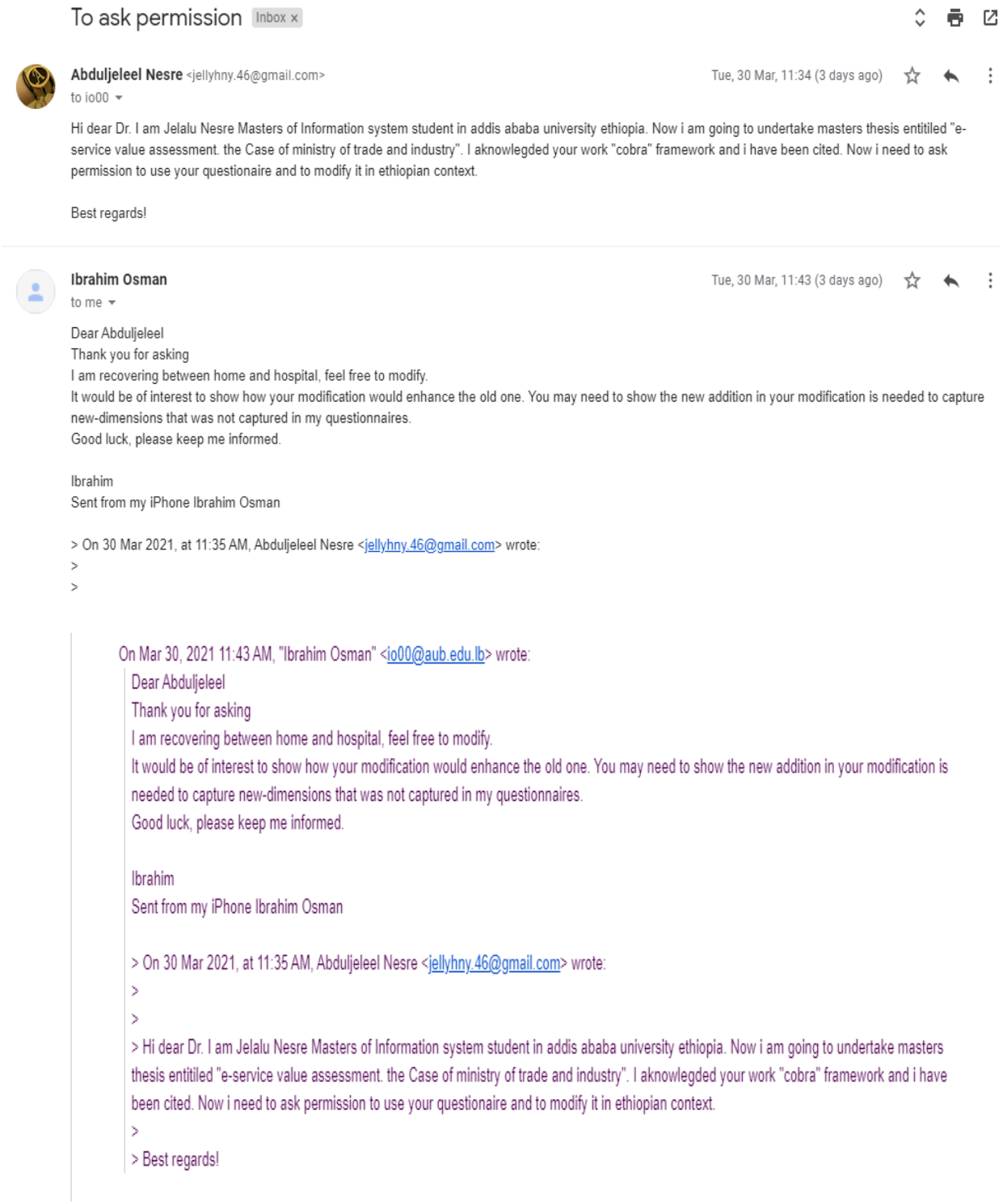
ክፍል II ፣ ኢ-አስተዳደር መድረኮች እና ኢ-አገልግሎት ጋር የተያያዙ ጥያቄዎች

ይህ ክፍል በኤሌክትሮኒክ የመንግስት አገልግሎት አጠቃቀም www.eTrade.gov.et ላይ ባጋጠሙዎት ተሞክሮ መሠረት በሚከተሉት መግለጫዎች ምን ያህል እንደሚስማሙ ወይም እንደማይስማሙ እንዲያመለክቱ ይጠይቃል። የእርስዎን ምላሽ ትክክለኛ ወይም የተሳሳተ መልስ ነው ማለት ሳይሆን ዋናው ዓላማው የእርስዎን አስተያየት በተሻለ ሁኔታ የሚያንፀባርቅ መልስዎን ማወቅ ብቻ ነው ። 1 = በጣም አልስማማም ፣ 2 = አልስማማም ፣ 3 = ገለልተኛ ወይም አስተያየት የለም ፣ 4 = እስማማለሁ ፣ 5 = በጣም እስማማለሁ።

ሀ/ የኢ.አገልግሎት ወጪ ተዛማጅ ጥያቄዎች፤ ይህ ክፍል የገንዘብ እና የጊዜ ወጪን በሚመለከት						
ተ.ቁ.	የጥያቄዎች ዝርዝር	1 በጥም አልስማማም	2 አልስማማም	3 ገለልተኛ	4 እስማማለሁ	5 በጥም እስማማለሁ
1.	የኤሌክትሮኒክ አገልግሎቱን መጠቀሜ ጊዜዬን ቆጥቦልኛል።	1	2	3	4	5
2.	የኤሌክትሮኒክ አገልግሎቱን መጠቀሜ ገንዘቤን ቆጥቦልኛል።	1	2	3	4	5
3.	የኤሌክትሮኒክ አገልግሎት የቢሮክራሲያዊውን ሂደት ይቀንሰዋል።	1	2	3	4	5
4.	ለኢንተርኔት ምዝገባ የሚከፈለው ዋጋ ተመጣጠኝ ነው።	1	2	3	4	5
5.	የኤሌክትሮኒክ አገልግሎት መጠቀሜ አገልግሎቱን ለማግኘት የነበረውን የጉዞ ወጪዬን ቀንሶልኛል።	1	2	3	4	5
6.	አገልግሎቱን ስጠቀም የሚያስፈልገኝን መረጃ ለማግኘት ረጅም ጊዜ ይወስዳል።	1	2	3	4	5
7.	በሲስተም ብልሽት ምክንያት አገልግሎቱን ለማጠናቀቅ ብዙ ሙከራዎችን ይጠይቃል።	1	2	3	4	5
8.	የኢ-አገልግሎት ስራዬን መጠናቀቄን ለመቀበል ረጅም ጊዜ ይወስዳል ።	1	2	3	4	5
ለ/ ከዕድል ጋር ተዛማጅ የሆኑ ጥያቄዎች፤ ከዕድል ጋር ተያያዥነት ያላቸው ሀሳቦችን በተመለከተ						
1.	ኢንተርኔት ላይ በተደጋጋሚ የሚጠየቁ ጥያቄዎች ዝርዝር ተገቢነት አላቸው።	1	2	3	4	5
2.	የኤሌክትሮኒክ አገልግሎትን በማንኛውም ጊዜ እና ቦታ ማግኘት ይቻላል።	1	2	3	4	5
3.	የኤሌክትሮኒክ አገልግሎት መጠቀሜ በየ ጊዜው ማህደሬን እንዳዘምን ያስችለኛል።	1	2	3	4	5
4.	የኤሌክትሮኒክ አገልግሎቱ ልዩ ፍላጎት ላላቸው ተጠቃሚዎች መሣሪያዎችን ይሰጣል።	1	2	3	4	5
5.	ኢንተርኔት ላይ መረጃን በተለያዩ ቋንቋዎች ማግኘት ይቻላል።	1	2	3	4	5
6.	የኤሌክትሮኒክ አገልግሎት እንድጠቀም ጠንካራ ማበረታቻ አለው።	1	2	3	4	5

ሐ/ ከጥቅም ጋር የተያያዙ ጥያቄዎች፤ የሚዳሰሱ እና የማይዳሰሱ ጥቅማጥቅሞች በተመለከተ						
1.	የኤሌክትሮኒክ አገልግሎት ለማሰስ ቀላል እና ምቹ ነው።	1	2	3	4	5
2.	የኤሌክትሮኒክ አገልግሎት ምንም ዓይነት የቴክኒክ ዕውቀት አያስፈልገውም።	1	2	3	4	5
3.	በኢንተርኔት ላይ ያሉ መመሪያዎቹ ለመረዳት ቀላል ናቸው።	1	2	3	4	5
4.	በኢንተርኔት ላይ ያለው መረጃው ለአገልግሎቴ ጠቃሚ ነው።	1	2	3	4	5
5.	የኤሌክትሮኒክ አገልግሎት መረጃው ትክክለኛ ነው።	1	2	3	4	5
6.	የኤሌክትሮኒክ አገልግሎት ሥራዎች በደንብ የተዋሃዱ ናቸው።	1	2	3	4	5
7.	የኤሌክትሮኒክ አገልግሎት ላይ የሚሰጡት መመሪያዎች ጠቃሚ ናቸው።	1	2	3	4	5
መ/ ከኤሌክትሮኒክ አገልግሎት ስጋት ጋር የተያያዙ ጥያቄዎች						
1.	በኢንተርኔት ላይ የግል መረጃዬ ለሌሎች ዓላማዎች እንዳይውል እሰጋለሁ።	1	2	3	4	5
2.	ለወደፊቱ የኦዲት ምርመራ በሚደረግበት ጊዜ የሰነዶች ሪኮርድን እንድይዝ ኤሌክትሮኒክ አገልግሎት ያስገድደኛል።	1	2	3	4	5
3.	የኤሌክትሮኒክ አገልግሎት ስጠቀም ተጨማሪ እርማት ወደሚያስፈልገው የተሳሳተ ክፍያ ሊያመራኝ ይችላል።	1	2	3	4	5
4.	የግል የገንዘብ መረጃን በመጠየቅ በኢንተርኔት ላይ ግብይቶችን ማከናወን ያሳስበኛል።	1	2	3	4	5
5.	የኤሌክትሮኒክ አገልግሎትን መጠቀም ከሰዎች ጋር ወደ አነስተኛ ግንኙነቶች ይመራል።	1	2	3	4	5
ሠ/ ከእርካታ ተዛማጅ የሆኑ ጥያቄዎች፤ የኤሌክትሮኒክ አገልግሎት እርካታ ላይ ያሉት አስተያየት						
1.	በገንዘብ እና በጊዜ ረገድ በኤሌክትሮኒክ የንግድ መተላለፊያ ባሉት ባህሪዎች ረክቻለሁ።	1	2	3	4	5
2.	ከሚዳሰሱ እና ከማይዳሰሱ ጥቅሞች ጋር በተገናኘ የኤሌክትሮኒክ አገልግሎት በመጠቀሜ እርካታ አግኝቻለሁ።	1	2	3	4	5
3.	ከኤሌክትሮኒክስ አገልግሎት ዕድሎች ጋር በተዛመደ የኢ-ንግድ በር / መተላለፊያ በጣም አርክቶኛል።	1	2	3	4	5
4.	ከኤሌክትሮኒክስ አገልግሎት አደጋዎች ጋር በተዛመደ የኢ-ንግድ መተላለፊያውን በመጠቀሜ ምንም ስጋት አይሰማኝም ።	1	2	3	4	5
5.	በአጠቃላይ ፣ በኤሌክትሮኒክስ ንግድ መተላለፊያ አገልግሎቶች በመጠቀሜ በጣም ረክቻልሁ።	1	2	3	4	5

Appendix D. Request for Adopt the Questionnaire and Conceptual Framework



To ask permission Inbox ×

Abduljeleel Nesre <jellyhny.46@gmail.com> Tue, 30 Mar, 11:34 (3 days ago)
to io00

Hi dear Dr. I am Jelalu Nesre Masters of Information system student in addis ababa university ethiopia. Now i am going to undertake masters thesis entitiled "e-service value assessment. the Case of ministry of trade and industry". I aknowlegded your work "cobra" framework and i have been cited. Now i need to ask permission to use your questionaire and to modify it in ethiopian context.

Best regards!

Ibrahim Osman Tue, 30 Mar, 11:43 (3 days ago)
to me

Dear Abduljeleel
Thank you for asking
I am recovering between home and hospital, feel free to modify.
It would be of interest to show how your modification would enhance the old one. You may need to show the new addition in your modification is needed to capture new-dimensions that was not captured in my questionnaires.
Good luck, please keep me informed.

Ibrahim
Sent from my iPhone Ibrahim Osman

> On 30 Mar 2021, at 11:35 AM, Abduljeleel Nesre <jellyhny.46@gmail.com> wrote:
>
>

On Mar 30, 2021 11:43 AM, "Ibrahim Osman" <io00@aub.edu.lb> wrote:

Dear Abduljeleel
Thank you for asking
I am recovering between home and hospital, feel free to modify.
It would be of interest to show how your modification would enhance the old one. You may need to show the new addition in your modification is needed to capture new-dimensions that was not captured in my questionnaires.
Good luck, please keep me informed.

Ibrahim
Sent from my iPhone Ibrahim Osman

> On 30 Mar 2021, at 11:35 AM, Abduljeleel Nesre <jellyhny.46@gmail.com> wrote:
>
>
> Hi dear Dr. I am Jelalu Nesre Masters of Information system student in addis ababa university ethiopia. Now i am going to undertake masters thesis entitiled "e-service value assessment. the Case of ministry of trade and industry". I aknowlegded your work "cobra" framework and i have been cited. Now i need to ask permission to use your questionaire and to modify it in ethiopian context.
>
> Best regards!

Appendix E. Amharic Language Advisor Translation Confirmation

አዲስ አበባ ዩኒቨርሲቲ ADDIS ABABA UNIVERSITY

የሂዩማኒቲስ፣ የቋንቋዎች ጥናት፣ ጆርናሊዝምና ኮሚዩኒኬሽን Humanities, Lang. Studies, Journalism & Com

የአማርኛ ቋንቋ ሥነ ጽሑፍና ፎክሎር Department of Amharic Lang. Lite. & Folklore

☎ +251-11-123-98-00 Ext. 127 E-mail: dtell@ils.aau.edu.et

+251-11-123-97-02 ✉ 1176

http://www.aau.edu.et/index.php/ethiopian-languages-and-literature

ቀን፡- ሚያዝያ 28 ቀን 2013 ዓ.ም.

ቁጥር፡- ቋጥፋ/አከት/216/2013

ለ መረጃ ሳይንስ ትምህርት ቤት

የአዲስ አበባ ዩኒቨርስቲ

ከ ግርማ ገብሬ (ዶ/ር)

የአማርኛ ቋንቋ፣ ስነጽሑፍና ፎክሎር ክ/ትምህርት ተጠሪ

ጉዳዩ፣ **በጽሑፍ መጠይቅ ትርጉም ላይ አስተያየት ስለመስጠት**

ጅላሎ ነስሬ የመረጃ ሳይንስ ኤም ኤ ተማሪ ለጥናቱ መረጃ ለመሰብሰብ የሚጠቀምበትን ከእንግሊዝኛ ወደ አማርኛ የተተረጎመ መጠይቅ ለትምህርት ክፍላችን አቅርቦ በትርጉሙ ላይ አስተያየት እንድነሰጥ ጠይቆናል ፡፡ ከእንግሊዝኛ ወደ አማርኛ የተተረጎመው የእንግሊዝኛውን ሀሳብ ያለቀቀና ባግባቡ የተተረጎመ መሆኑን በመግለጽ ይህን ደብዳቤ ጽፈንለታል፡፡

ከሰላምታ ጋር !

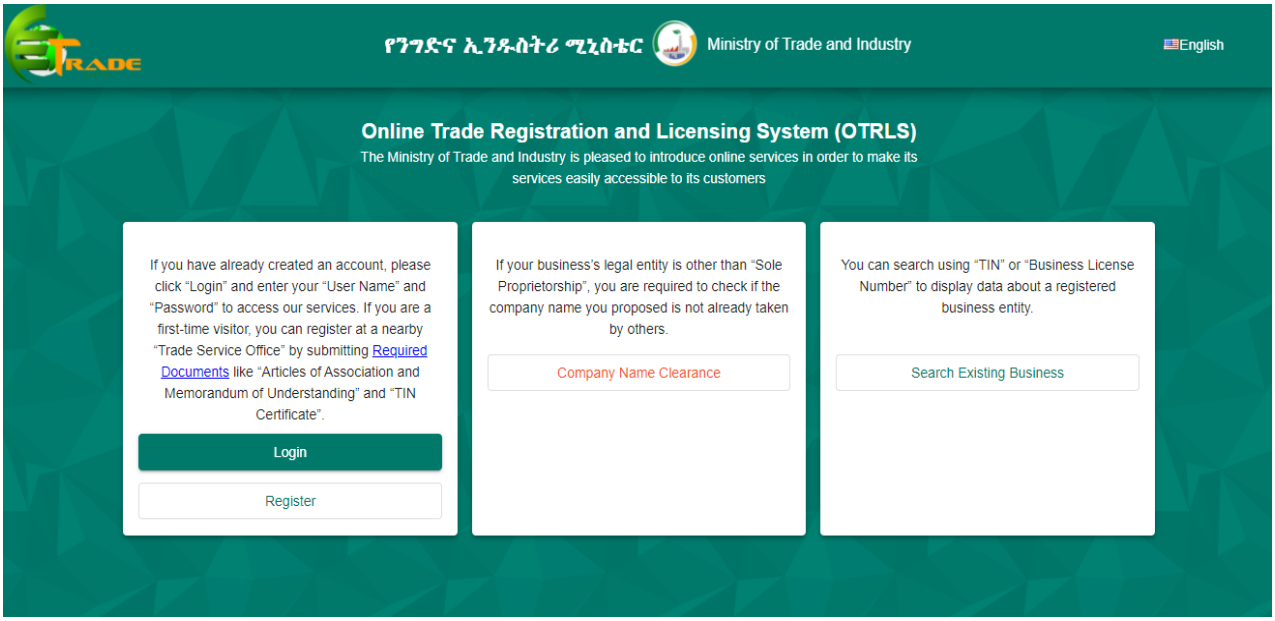
Appendix F. Construct Indicators and the Corresponding Questionnaire Items

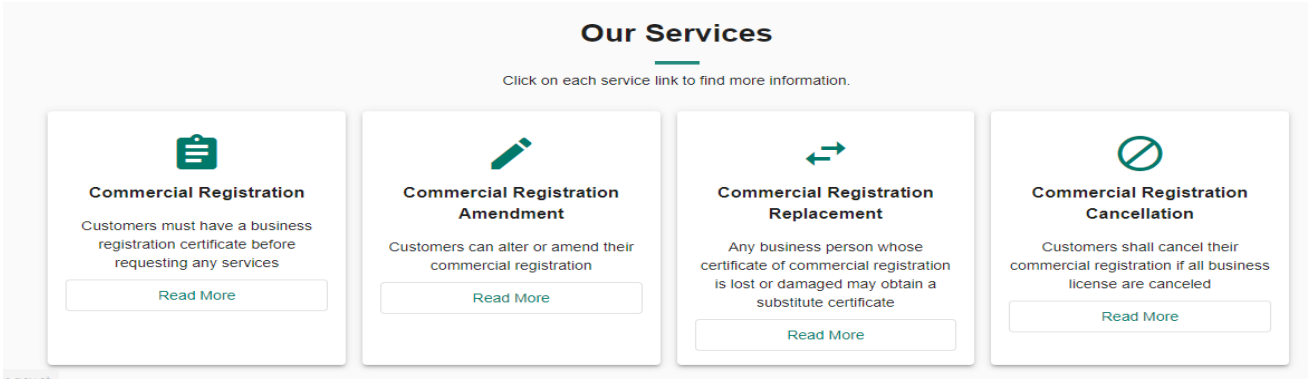
S.No	Lists of questions	Indicator Representation
Cost Related Questions		
1.	Using the e-service saved me time**.**	C1
2.	Using the e-service saved me money**.**	C2
3.	The e-service reduces the bureaucratic process**.**	C3
4.	The internet subscription cost is reasonable.	C4
5.	The e-service reduces my travel costs to get the service	C5
6.	It takes a long-time to find my needed information.	C6
7.	It takes several attempts to complete the service due to system breakdowns.	C7
8.	It takes a long-time to acknowledge the completion of e-service.	C8
Opportunity Related Questions		
1.	The Frequently Asked Questions (FAQs) are relevant.	O1
2.	The e-service can accessed at any time and where.	O2
3.	The e-service allows me to update my records online.	O3
4.	The e-service offers tools for users with special needs.	O4
5.	The information provided in different languages.	O5
6.	There is a strong incentive for using e-service.	O6
Benefit Related Questions		
1.	The e-service is easy to navigate.	B1
2.	The e-service requires no technical knowledge.	B2
3.	The instructions are easy to understand.	B3
4.	The information is relevant to my service.	B4

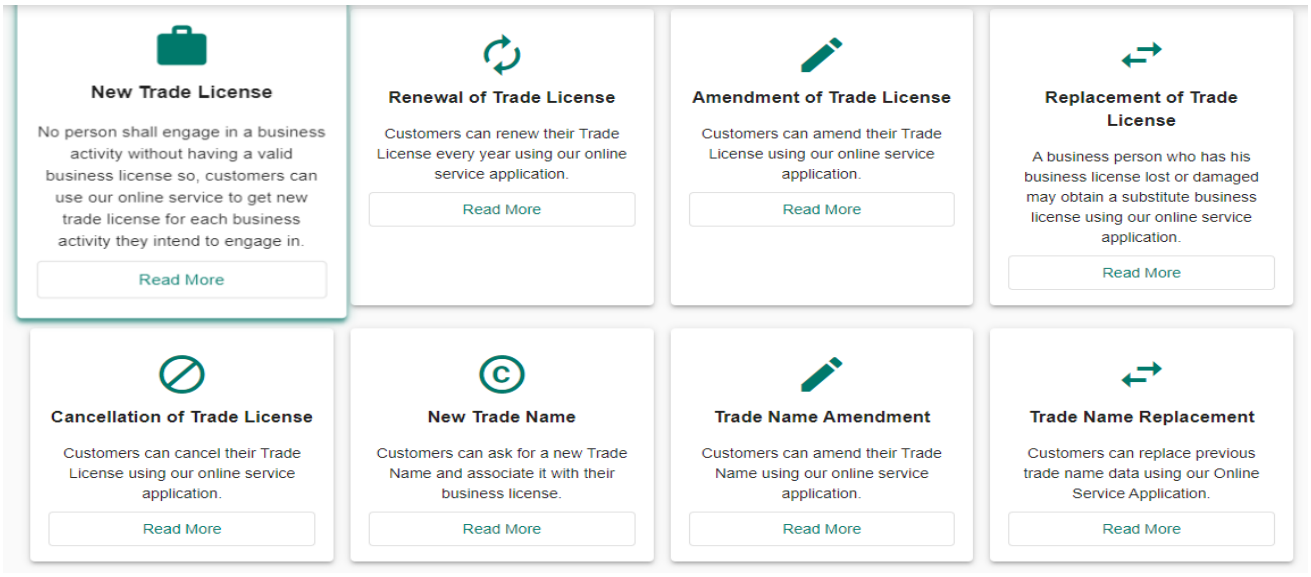
5.	The e-service information is accurate.	B5
6.	The e-service operations are well integrated.	B6
7.	The instructions on performing e-service are helpful.	B7
Risk Related Questions		
	I am afraid my personal data may use for other purposes.	R1
	E-service obliges me to keep a record of documents in case of future audit.	R2
	The e-service may lead to a wrong payment that needs further correction.	R3
	I worry about conducting transactions online requiring personal financial information.	R4
	Using e-service leads to fewer interactions with people.	R5
Satisfaction Related Question		
1.	I am satisfied with the e-Trade portal characteristics in terms of money and time.	S1
2.	I am satisfied with the e-Trade portal related to tangible and intangible benefits.	S2
3.	I am satisfied with the e-Trade portal related to e-service opportunities.	S3
4.	I am satisfied with the e-Trade portal related to e-service risks.	S4
5	Overall, I am satisfied with the e-Trade portal services.	S5

Appendix G. Features of the OTRLS Portal in English and Amharic Version

The e-Trade portal feature in English language







The E-trade portal in Amharic language