Global Scientific JOURNALS
GSJ: Volume 10, Issue 2, February 2022, Online: ISSN 2320-9186
www.globalscientificjournal.com

Chongqing University of Posts and Telecommunications

Thesis for Master's Degree

TITLE	**Citizen Satisfaction of E- government Services Quality in Liberia**
COLLEGE	**School of Economics and Management**
AUTHOR	**Name:** Kadiatu. K. Kamara
STUDENT NUMBER	**L201820036**
DEGREE CATEGORY	**Master of Management**
MAJOR	**Management Sciences and Engineering**
SUPERVISOR	**Liu Fen, Professor**
SUBMISSION DATE	**October 30, 2021**

DECLARATION OF ORIGINALITY

I declare that this thesis/dissertation is the result of an independent research I have made under the supervision of my supervisor. It does not contain any published or unpublished works or research results by other individuals or institutions apart from those that have been referenced in the form of references or notes. All individuals and institutions that have made contributions to my research have been acknowledged in the Acknowledgements. I am fully aware that I myself will bear all the legal responsibility arising from violation of the above declaration.

Signature of Author: **Kadiatu K Kamara**  **Date:** **Novermber 30, 2021**

COPYRIGHT PERMISSION LETTER

I hereby authorize Chongqing University of Posts and Telecommunications (CQUPT) to use my thesis to be submitted to the CQUPT, namely I grant an irrevocable and perpetual license that includes nonexclusive world rights for the reproduction, distribution, and storage of my thesis in both print and electronic formats to CQUPT and to the relevant governmentalagencies or institutes to reproduce my thesis. I also extend this authorization to CQUPT, for the purposes of reproducing and distributing single microform, digital, or printed copies of the thesis or dissertation on demand for scholarly uses.

Signature of Author: **Kadiatu K Kamara**  **Date:** **November 30, 2021**

Signature of Supervisor: **Prof. Lui Fen**  **Date:** **November 30, 2021**

ABSTRACT

There are many studies that have investigated the role of e-Government and its service quality utilizing many different approaches and methods. However, there are few studies that have explored e-Government service quality from a citizen's perspective. Therefore, this research is seeking a more efficient and accurate method for the evaluation of e-Government service quality. It seeks to provide insight into and validates the usefulness of e-Government Citizen Satisfaction Index (g-CSIs) in e-government evaluation especially in Liberia. The study offers recommendations to enhance the overall satisfaction of citizens with e-government portals.

Among the five factors tested, all are important determinants of citizen satisfaction; namely, citizen expectation, perceived quality, and citizen trust, citizen complaint handling and citizen satisfaction. To further enhance the satisfaction level of citizens in e governance; e-government portals should provide web navigation, menus, icons, and buttons that are consistent, friendly, and easy to use.

There are also practical contributions of this research, as it would help African Countries identify if their citizens are satisfied with the e-government services being provided and the factors affecting them. This will help to improve the quality of e-government services provided to meet the needs of the citizens and to make e-government more user friend

Keywords*: e-government; good governance; quality of services; citizen satisfaction, user friendly*

CONTENTS

List of Figures

错误！未找到图形项目表。错误！未找到图形项目表。

List of Tables

Chapter 1Introduction

1.1 Background

E-government has already arrived in Africa, though it is fundamentally an imported concept based on imported designs. There are growing numbers of e-government projects, some of which are contributing to public sector reform and delivering gains of efficiency and/or effectiveness across a broad agenda. (Richard, 2006). In this study, e-government services hosted on the Liberian government portals will be evaluated. The research will focus on key government Ministries, Agencies, Commissions (MACs) in Liberia. Liberia, a country on the West Coast of Africa situated within borders with Guinea, Ivory Coast, Sierra Leone and the Atlantic Ocean. Liberia has population of approximately 4.8 million (LISGIS 2010).

Electronic goivernance or e-governance is the application of information and communication technology (ICT) for delivering government services, exchange of information, communication transactions, integration of various stand-alone systems between government to citizen (G2C), government-to-business (G2B), government-to-government (G2G), government-to-employees (G2E) as well as back-office processes and interactions within the entire government framework (Garson, D.G. (2012).[1] In e-governance, there are no distinct boundaries. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions.

Over the years, Liberia has made strides in every sector especially in the area of Information and Communication Technology industry. As a result of these advances, they have adopted comprehensive e-government and open government programs that involve the use of the internet and its technologies to enable traditional government processes and practices for enhancement of democracy.

1.1.1 ICT Systems Used in Liberia

The Government of Liberia has over the years embarked on several information systems as a way to effectively and efficiently improve its services to businesses, employees, and other government spending entities. In June 2010, the government introduced its Government Resource Planning (GRP) platform--the "Integrated Financial Management Information System (**IFMIS**)". Other mission critical electronic systems currently being used include: Automated System for Customs Data (**ASYCUDA**), Automated Tax Administration System (**ATAS**).

1.1.2 Integration Financial Management Information System (IFMIS)

Integrated Financial Management Systems (IFMIS) is one computerized application systems recently implemented at the Ministry of Finance. IFMIS underlining objective is to Transform Public Financial Management through the use of Information Communication Technology. The major objective of the system is to ensure efficiency, transparency and accountability in the public financial management processes of the Government of Liberia. IFMIS ensures timely, more accurate reports, better decision making, and ease of consolidated of information—it improves Public Expenditure Management processes; enhances greater accountability and transparency across Ministries and Agencies. The Government of Liberia IFMIS solution is the latest version of the Free Balance Accountability suite comprising the following modules; Performance Management, Public Financial Management, Treasury Management, Public Expenditure Management, Receipts Management and Civil Service Management

1.1.3 Automated System for Customs Data (ASYCUDA)

ASYCUDA is actually an internationally acclaimed custom's automated systems used by many other countries. The system automates the processes of collection of data, detects frauds, and makes the clearing of goods easy for business institutions and individuals involved with clearing goods at the ports of entries in the country. The systems are built to allow for modification for national characteristics such as national tariff and legislation. (Eleanor 2012). Some of the key features of ASYCUDA:

- Full Automated clearance process; System available 24/7
- Manifests will be electronically transferred to ASYCUDA World.
- Direct Trader Input of customs declarations (entries) from the importers/exporters/brokers premises.
- Self-Assessment of duty and taxes.
- Efficient Payment Schemes available such as online payment to banks and pre-payment facilities.

1.1.4 Automated Tax Administration System (ATAS)

ATAS which provide a better platform for tax payers. ATAS is an automated tax administration system (ATAS) has been installed which takes five minutes to process transaction. The Bank Payment Slip Section (BPSS) is the unit responsible for the Verification of tax payers. In the process, tax payers are responsible to take their bills to this unit to be access and afterward process through this automated tax administration system which takes five minutes and after that it is printed and sign by BPS Clerk for upward transmission to the Central Bank Tellers (CBT) who then print out the treasury receipts and deliver to the taxpayers (Augustus, 2011).

Investigation confirms that the ministry of Planning and Economic Affairs is making extensive use of ICT. The ministry has employed a staff recording systems where staff by biometric means records their entrance and exit from the office.

1.2 The Significance of the Study

Almost all countries around the world, including Liberia, have introduced e-government services, but at different levels (Lamine 2016). Individual e-governments in Africa have been evaluated, for example, Tanzania (Kaaya, 2014), Zambia (Coates and Nikolaus, 2017), Angola (Meerman, 2015) and South Africa (Kaisara and Pather, 2018). This study provides insight into and validates the usefulness of Citizen Satisfaction Index (CSIs) in e-government evaluation especially in Liberia. There are also practical contributions of this research, as it

would help African Countries identify if their citizens are satisfied with the e-government services being provided and the factors affecting them. This will help to improve the quality of e-government services provided to meet the needs of the citizens and to make e-government more user friendly.

1.3 Statement of the problem

The citizens of a country can choose how they want to interact with government (Finger and Pecoud, 2013). There are, however, contradictions as to how citizens feel about using e-government services (Kunstelj, Jukic and Vintar, 2015; Kaisara and Pather, 2017). Kaisara and Pather (2019) found that citizens prefer to choose e-government rather than visit physical offices. On the contrary, Kunstelj, Jukic and Vintar, (2014) found that e-government is being enhanced, but citizens do not expect much from it and they do not show interest in e-government which indicates that e-government has not added much value to their lives. According to research, there continues to be high expectations of governments in respect of improved delivery of services and of close consultation with citizens. Such expectations a re not unique to one country (Kaisara and Pather, 2016). This indicates a possibility of malfunctioning e-government services making continuous citizen satisfaction evaluation important. Technology is also advancing and satisfying citizens with e-government information services will continue to be difficult as the expectations of citizen's change. The continuous evaluation of the present e-government systems is therefore necessary with the aim of improving these systems and indirectly satisfying citizens and gaining citizen buy-in for improved access to e-government information services.

1.4 Research questions

Below are the questions that this research sought to find answers to:

1 What set of criteria will be suitable to evaluate citizen satisfaction in the usage of e-government system in Liberia?

2 What critical factors affect the satisfaction of citizens with e-government services?

3 Is the service available upon request?

1.5 Research objectives

a) To discover a set of suitable criteria to evaluate the satisfaction of citizens with e government information services provided by the Liberian government,

b) To discover the criteria that contribute most to citizen satisfaction with e-government services provided by the Liberian Government and,

c) To identify the factors that could improve of e-government services provided to meet needs.

1.6 Innovation

This discussion highlights the significance of citizen satisfaction with e-government. Citizen satisfaction is defined in many ways, but, for the purposes of this study, citizen satisfaction can be defined as the level of satisfaction of the citizen in relation to the expectations of the citizen being met and exceeded after e-government service delivery. There are many citizen satisfaction models that can be used to measure the quality of e-government services and each one of these models is unique in its own way. The researcher will be able to select a set of suitable criteria evaluation criterion for evaluating citizen satisfaction with the quality of e-government services in Liberia by considering the level of e-government usage and stage of e-government development in the region.

Chapter 2 Literature Review

2.1 Literature Review

This chapter provides a comprehensive review of the research domains that are relevant to this study. This review includes theories, concepts, models and factors of citizen satisfaction with e-government information services. The aim is to systematically guide the process of solving the research question and to achieve the objectives specified in this research. Citizen satisfaction with e-government information services measurement is to introduce the theory and methods of e-government performance as a way of measuring the state of e-government performance and construction.

2.2 E-Government

E-government is defined as the delivery of government-oriented information and services online through the internet or by other digital means to citizens, business partners, employees and other government entities (Zhao, 2019; Abhichandani and Horan, 2017). E government concentrates on information, transaction processes and interactive items mainly provided on government portals (Yao and Zhao, 2016). The final goal of every government is to provide citizens with more complete and convenient services. This can only be effectively accomplished by assessing the level of e-government services from the citizens' point of view. In doing so, it is believed that e-government might transform the relationship between citizens and government (Zhao, 2010).

2.3 Functions of E-Government

As discussed above, e-Government is defined by various sources and aspects, and consists of numerous functions and possibilities. Many previous studies have addressed the various functions of e-Government, such as paying taxes and fees, making transactions, or connecting to government portals to deal with simple services. In an effort to understand the diverse functions of e-Government, this research employs two kinds of models to identify and summarize the functions of e-Government.

In 2003, Koh and Prybutok proposed the Three Ring Model for showing the functions of e-Government. Based on this model, three primary functions of e-Government

areidentified: (1) Informational uses, (2) Transactional uses and (3) Operational uses (Koh and Prybutok, 2003).

Informational uses: the use of the Internet in an organization to deliver information and services to customers; this function can be used to explain the transparency characteristic of e-Government. Transactional uses: represents customer activities when making payments or conducting some transactional processes through the Internet. Operational uses: the operational function is divided into internal and external processes. This aspect is also related to the use of applications like workflow management, project management and customer relations management.

Tony Carrizales (2008) defined e-Government as having four distinct functions: (1) E-organization: internal government efficiency and effectiveness; (2) E-Services: external efficiency and effectiveness in providing services; (3) E-partnering: external efficiency and effectiveness in working with public and private organizations; and (4) E-democracy: citizen participation in government decision-making.

E-organization refers to the use of ICT in an organization as an element of infrastructure, such as using local network area, email, and web services, and more recently using Cloud computing in administrative tasks by sharing information and services to citizens or among organizations. It also refers to the integration of technologies for horizontal and vertical communication between agencies and departments via the Internet.

E-Service can be defined as web-based service (Reynolds, 2000) or interactive services that are delivered via the Internet. Various authors have conceptualized e-Service as an information service, or as a self-service mechanism. E-Service is a citizen experience and perception of a new system used by the public sector. E-Service quality can be understood as the evaluation of the efficiency and effectiveness of online actions.

E-partnering is defined here as the use of technology for external government efficiency and effectiveness when working with public and private organizations, including businesses (Tony Carrizales, 2008) -E-democracy seeks to increase participation in government. According to OECD, there are three types of e-democracy interaction – one-way information provision; a two-way relationship where citizens have opportunity to give feedback on issues; and, finally, a partnership relationship whereby citizens are actively engaged in policymaking. From an information point of view, e-democracy is the use of ICT for increasing citizen participation in government decision-making.

2.4 Benefits and Roles of e-Government

E-Government refers to the delivery of information and services through the Internet to citizens, businesses, and government. E-Government services are described as government-to-government, government-to-businesses, and government-to-citizens. Therefore, to consider the benefits of e-Government, the benefits of e-Government to government, businesses and citizens must also be considered. The applications of ICT in public management include improving the quality of government services; therefore, from the perspective of this research, the primary benefit of e-Government is to improve service quality.

E-Government improves service quality: The aim of the transition from traditional government to e-Government is to improve service quality. By transforming the model, governments can integrate services and information easily and offer the vast majority of required services. Based on Hodgkinson's model, e-Government capabilities include the ability to share data and information across government units and reduce process times through workflow and Enterprise Resource Planning systems (Robert et al., 2005). Besides improving service quality, the OECD report (2003) indicated that the benefits of e-Government are described as follows:

E-Government improves efficiency: E-Government results in the improvement of ICT use in the public sector, enhancing government performance in terms of managing society, saving costs, disseminating public information, and providing services in more efficient and effective ways than were previously possible. By applying e-Government, improving efficiency in mass processing tasks and public administration operations is possible.

E-Government increases policy effectiveness: After adopting e-Government, governments can easily enact policies for citizens, businesses, and other governmental agencies. It also increases the effectiveness of these policies by updating information quickly and conveniently, while also minimizing risks when implementing and issuing policies. E-Government enables information and data management easier and more standardized. It helps citizen access information safer and easier, along with helping citizens reduce their costs in communicating with government.

2.5 Customers Satisfaction

Customer satisfaction is defined as a measurement that determines how happy customers are with a company's products, services, and capabilities. Customer satisfaction information, including surveys and ratings, can help a company determine how to best improve or changes its products and services. (R.L. Pobl 2011). Customer satisfaction can also be terms as citizens' satisfaction in that satisfaction is a person's feeling of pleasure or disappointment resulting from the performance of a service in relation to expectations (Albert, Njanike and Mukuch, 2018). Hence, evaluating citizen satisfaction with e-government information services has become a popular topic of research (Hao, 2011; Alanezi, Mahmood and Basri, 2017; Horan and Abhichandani, 2016).

2.6 Service Quality

Service quality is a concept that has attracted considerable interest and debate in the marketing literature because of the difficulties in both defining it and measuring it with no overall consensus emerging on either (Wisniewski, 2001). One that is commonly used defines service quality as the ability of the organization to meet or exceed customer expectations. It is the result of the comparison that customers make between their expectations about a service and their perception of the way the service has been performed (Zeithaml et al. 1990). If expectations are greater than performance, then perceived quality is less than satisfactory and hence customer dissatisfaction occurs (Parasuraman, Zeithaml & Berry, 1985). Most of the recent work on service quality in marketing can be credited to the pioneering and continuing work of Parasuraman, Berry and Zeithaml (Fisk, Brown & Jo, 1993). In a seminal research study, Parasuraman, Zeithaml, and Berry (1985

2.7 Citizens Satisfaction with e-government Service

In order to measure citizen satisfaction, there must be the inclusion of the quality factor to provide important information regarding the quality of services (Wilkin and Hewett, 2019). This makes e-government and e-service quality a key to the success or failure of online organisations and institutions (Alanazi and Basri, 2016; Kim, Im and Park, 2015). Research

on e-government service quality is still limited and at an early stage in its development (Yao and Zhao, 2017; Kasubiene and Vanagas, 2017). For this reason, research on factors related to an e-government evaluation index is still minimal. E-government services can be evaluated depending on the level of development they attain, publish, interact or transact, which can be found in the different stages of e-government development, especially on the World Wide Web (Kenstelj and Vintar, 2017).

Besides the key areas of e-government service quality evaluation stated above, Halaris, Mogoutas and Papadomihelaki, (2017).

a) Customer satisfaction – deals with quality issues as perceived by citizens compared to their expectations;

b) Site quality – deals with the website usability and interface characteristics;

c) technical performance – technical aspects of the web site; and

d) Process performance – quality aspects typically related to traditional government services.

Layers of quality assessment adapted from (Halaris, Mogoutas and Papadomechelaki, 2017)

2.8 EGOVSAT

The EGOVSAT model is used to evaluate government to citizen web-based initiatives in terms of satisfaction derived by users (Abhichandani, Horan and Rayalu, 2015). This model consists of features which promote confidence, trust, openness and citizen–centric delivery derived from other perspectives of e-government evaluation from other researchers such as West (2014); Wang Bretschneider and Gant (2016); Eschenfelder and Miller (2015). Emotional responses of users are the dependent variable in this model, (Horan, Abhichandani and Rayalu, 2016; Abhichandani and Horan, 2016).

In this model, satisfaction has other affective responses of varying intensity which signifies various emotional responses. Abhichandani and Horan (2016) extended emotional factors to include frustration, pleasantness and confidence. The construct of "utility" refers to the usefulness of the website, "reliability" refers to websites functioning well in terms of

technology and accuracy of content, "efficiency" refers to the accessibility, availability on information and organization of website features, "customization or personalization" refers to the website ability to change so as to meet the needs of the users and "flexibility" and "customization" cater for the digital aspect of the website so that the website is user-centric (Abhichandani and Horan, 2016).

Factors in the EGOVASAT model were expanded by Sheibani and Fariborzi (2017) to include performance features of e-government efficiency, reliability, accessibility, completeness, customization and usability. Results show that customization, reliability and accessibility have slight influence on overall satisfaction, but all the other factors have moderate to high influence on satisfaction. The data collected also shows that perceived completeness was low whilst efficiency and usability were high. Horan and Abichandani (2016) used the EGOVSAT model to evaluate citizen satisfaction with e-government. They collected data from 401 citizens using Advanced Transportation Information Systems (ATIS), an online service delivery offered by the government. Data analysis was done using structural equation modelling (SEM) and the overall results indicate there is value in utilizing a robust measure of citizen satisfaction such as EGOVSAT.

2.9 Citizen Satisfaction Index (CSI)

There are many methodologies and models designed to measure citizen satisfaction, as explained in the above sections and CSI is one of them. According to Halaris, Mogoutas and Papadomechelaki (2017), the idea of CSI was introduced in the offline world and then migrated to the online world. The structure and setup of CSI has been changing over the years based upon established theories, approaches, customer behavior, customer satisfaction and service quality (Fornell, 2012). CSI is a customer evaluation that cannot be measured directly as an overall measure; it does not look at consumption experience, but is forward looking (Anderson and Fornell, 2015). CSIs are multidimensional; the indexes consist of manifest variables (those that measured the survey) and latent variables (inferred by manifest variables) (IDeA and LGA Publications, 2016). In addition customer satisfaction represents a global satisfaction, which is an indicator of past, present and future performance of an organization (Duarte, Raposo and Alves, 2012) and has been identified in the marketing industry. CSI

methodologies identify key drivers of satisfaction and sum up their relationship to come up with overall satisfaction.

2.1.10 Citizen Satisfaction Index Factors

Citizen satisfaction indexes for e-government service evaluation consist of latent variables such as citizen expectation, perceived quality, citizen satisfaction, government trust, citizen trust and citizen complaint handling (Alanezi Mahmood and Basri, 2016; Yao and Zhao, 2017; Kim, Im and Park, 2015). The inclusion or exclusion of these or other factors depends on the authors. Yao and Zhao (2018) constructed a satisfaction index system with the following factors: citizen expectation, perceived ease of use, perceived usefulness, perceived quality and perceived ability to use, citizen satisfaction, government image, citizen reliability and citizen participation.

2.10 E-government Citizen Satisfaction Index (g-CSI)

The g-CSI was specifically designed for evaluating e-government service quality satisfaction as a means of overcoming the shortfalls of the original CSI for e-government (Kim, Im and Park, 2015). Customer satisfaction has been introduced at a national level with the development of National Satisfaction Barometers and indices in countries such as Sweden (2015), Norway (2016) and USA (2016). The constructs used for measuring customer satisfaction continue to be adapted and improved over time. The introduction of g-CSI was a solution to the problems of the original CSIs not concretely fitting to e-government (Kim, Im and Park, 2017). It is also called the Korean g-CSI and was developed on the ACSI model and therefore, has many similarities. The ACSI model could not cater for or consider the internet environment. The introduction of g-CSI was for e-government evaluation to produce results that would expand the mind of management to offer citizen-oriented services and enable management to provide competitive service quality.

2.11.1 Citizen Expectations

An expectation is the level of e-government service quality that citizens expect to receive before citizens use the services (Di Nisio and Di Battista, 2017; Yao and Zhao, 2018). It evaluates the citizen expectations for the overall quality, for service quality and fulfilment of personal needs. Citizens' confidence in their expectations with regard to a service will have much impact on satisfaction (Spreng and Page, 2016). Wirtz and Bateson (2016) illustrated that the uncertainty and ambiguity of expectations strongly influence the satisfaction process. According to research, there continues to be high expectations of government in most countries in terms of improved delivery of service and citizen participation (Kaisara and Pather, 2019).

2.11.2 Perceived quality

Perceived service quality is the overall evaluation of online service quality after citizens have used government e-services and also measure the reliability of a service (Yao and Zhao, 2016; Zalm *et al.,* 2015). Perceived quality also refers to citizens' judgments of a service against their expectations. Perceived quality is the citizens' judgments about an entity's overall 29 excellence or superiority (Zeithaml, 2015), and is the evaluation of recent consumption experience of services such as access to information accuracy of information, and citizen service (Kim, Im and Park, 2015; Loughlin and Coenders, 2012). Most of these quality factors are summarised in Table 2.3 above. Quality also evaluates customization and reliability of service (Kim, Im and Park, 2005). Customization refers to the degree that a service meets citizen requirements and reliability accesses, whether an organisation is offering services that are reliable, standardized and free from deficiencies (Turkyilmaz and Ozkan, 2012). It is the citizens who provide a service quality measure by expressing their views about a service by providing judgments of some service aspects (Eboli and Mazzulla, 2017). The quality factor for evaluating e-government citizen satisfaction differs from one model to another.

2.11.3 Citizen Complaint Handling

Citizen complaint handling refers to the intensity of complaints and the way in which government manages these complaints (Turkyilmaz and Ozkan, 2012; Di Nisio and Di Battista, 2017). Generally, defining customer complaint is the disagreement between an organization and their customers (Fornell *et al*., 2018). The government must be responsive to the needs and queries of citizens and that service quality is satisfactory. The relationship between citizen trust and citizen complaint handling level depends on the government's efficiency in handling complaints and if a government agent handles complaints effectively, it will be able to turn dissatisfied citizens to loyal ones (Fornell, 2018). If the government puts more effort to reduce citizen complaints, the level of citizen satisfaction will rise and in turn, the government will realize a citizen-participated e-government (Kim, Im and Park, 2014).

2.11.4 Citizen Satisfaction

Citizen satisfaction indicates how many citizens are satisfied and how well their expectations are met (Zalm *et al*., 2016). It is an estimation of a customer, supported by previous experiences with the use of services (Howard and Sheth, 2014). It evaluates whether the performance of e-government services is meeting the ideal and overall citizen satisfaction (Hafeez and Hasnu, 2010; Kim, Im and Park, 2016). Citizen satisfaction is the latent variable that is at the centre of the model, between the cause-and-effect variables. Customer 30 satisfaction with e-services is related to citizen perception of e-services that are convenience in terms of transaction, transparency, and interactivity (Saha, 2017).

2.11.5 Citizen Trust

In the private sector, maintaining customer loyalty and reducing customer complaints are the main goals with the final gain of increased profits. Yet, in e-government, the main aim of citizen satisfaction is to gain citizen trust (Hao, 2016). The results of trust in e-government are reusability, assistance, justice and encouragement (Kim, Im and Park, 2015). Satisfied citizens are also identified by returning to use the same e-government services and refusing to switch on to other alternative methods (Di Nisio and Di Battista, 2017; Hsu, 2018; Anderson and Sullivan, 2013). Previous research on citizen trust indicates that when citizens

are satisfied they continue to use the e-government services, recommend to friends and relatives and use the e-government services as their primary source. For example, in a research study conducted by Freed (2015) on e-government citizen satisfaction evaluation, it was discovered that the likelihood of using the site as a primary source ranked low, which means citizens were still using other sources/channels to assess government services. In other research by Freed (2019) on e-government citizen satisfaction, the study findings were that when citizens are satisfied, 50% are likely to return to the website and 79% will recommend it to their friends, family and colleagues. When compared to those who are dissatisfied, highly satisfied website visitors report being 80% more likely to return to the website and 79% more likely to recommend it to others (Mich, 2017). Citizen trust is an antecedent of citizen satisfaction and citizen complaint.

Chapter 3 Research Methodology

3.1 Research Design

The use of questionnaires is one of the most widely used methods adopted for gathering information and are an easy way to rapidly gain users' demographic information and experience. This data collection method was chosen for this study, as recommended 295 Satisfaction Levels with E-Government Services in Saudi Arabia by (Preece et al, 2009). The questions should be short, leading and easy to answer, so participants are encouraged to respond to all questions and provide true values. Questionnaires could help researchers to obtain the required demographic information about visitors to the Website under study (Brinck et al, 2010), they the perfect tool to include different kinds of participants from various age groups and genders, taking into account the variety in educational qualifications, careers and information technology skills. This questionnaire is widely adopted among information systems developers in order to enrich the study outcomes. The time span requested to fill out online questionnaire is shorter than other traditional research methods. The research is conducted for Liberian citizens by means of a questionnaire which is developed based on previous researches and theories as well as interviews with citizens and is modified according to a pilot study applied to three citizens.

3.2 Questionaire Design

The questionnaire includes seven sections and a total of 22 questions. First seven questions are for obtaining respondent's background data, one question is about internet usage areas, one question is about the usage of e-government services, twelve questions are about e-government citizen satisfaction items grouped under five factors as hypothesized in the research model and the last one to determine the level of e government satisfaction of the citizen. The last thirteen questions are measured using a 5-point Likert scale where (1) is strongly disagree, (2) is disagree, (3) is neutral, (4) is agree and (5) is strongly agree.

The questionnaire was distributed to a convenience sample over internet to capture data from different locations of Liberia. Number of respondents was 316 and since 35 of them did

not use e government, they were eliminated from the analyses. The data related to the remaining 281 respondents were analyzed using IBM SPSS Statistics software.

Table 3.1 Questionnaire Design

	First Phase	Second phase
Overall Construct	Usability	Satisfaction
Key Measures	Platforms Usability Scale (SUS System Recommended features	Utility Reliability Efficiency Customization Flexibility Privacy

The overall study consists of two phases, as showin in the Figure above. Phase I considers usability as its main construct. Usability – System Usability Scale (SUS) and Syatem features qualities were identified as key measures for this phase. In phase II, a more elaborative construct is considered Citizen Satisfaction. In this phase, utility, reliability, efficiency, customization, flexibility and privacy are considered as its key measures.

3.3 Sample Size Determination

The use of large sample is recommended by the literature. This implies that the Sample should be representative of the larger population. There is a consensus within the literature that larger the size of sample the more the sample is representative. In the absence of a solid sample frame together with time and resource limitations, the researcher decided to determine the sample size on the basis of two important aspects:

Firstly, considering the requirements of employing different statistical tests to meet the aims and objectives of this research. For example, Hair (2003) suggests that sample size of more than 100 is decent for factor analysis while McDaniel and Gates (1999) state that there should be a minimum sample size of 100 to run a regression model. Hair et al., (1998) further

proposed that the sample size should be five times greater or equal to the number of items (variables) in the questionnaire. The number of measures used in this research is 27 meaning that the sample size of More than 135 can be considered as appropriate.

Secondly, reviewing the sample size used by similar researches in this field of research. For example, Ja-Shen Chen (2007) distributed a total of 280 questionnaires to customers for investigating customers'purchase intention Taiwan. Rex P. Bringula (2018) had investigated Factors influencing online purchase intention of Philippines customers by using a sample size of 230. Also, Yu-Ting Hung-Joubert, (2019) surveyed 123 customers in South Africa. In a study by Marcelo de-Oliveira (2019), 345 online customers were surveyed in Brazil. Melinda L. Korzaan (2003) conducted a similar type of research by using a total sample size of 342.

The determination of the sample size for this research is also affected by the fact that the minimum sample size for a consumer survey ranges from 300 to 500 (Crouch, 1984). Moreover, the two points have been considered in prior to the determination of sample size for the current research. First, the higher the size of sample is more representatives the sample to population (Saunders et al., 2009). Second, the size of sample should meet the requirement of deploying statistical tests the research requires to answer the research questions.

On the basis of the above discussion, it could be argued that determining the sample size is a trade-off between time and cost and desired degree of precision. In essence, there is no optimal size of sample that needs to be achieved in research. On the basis of the above argument, the researcher considered a sample size of more than 400 as suitable and appropriate for answering the formulated research questions. After initial screening and checking, a sample size of 281 will found to be suitable for the current research.

Several factors such as money, time, statistical methods, population size and so on depends upon the question of sample size. For this thesis, as per the research convenience, two hundred and eight one (281) random citizen have been chosen as the sample for this study.

3.4 Conceptual Framework and Hypotheses

The conceptual framework taken to achieve the objectives of this research is summarized as follows:

a) An e-government citizen satisfaction index and e-government satisfaction evaluation criteria were selected based on literature, as lucidly described in this study. The aim was to discover a suitable set of evaluation criteria to evaluate citizen satisfaction with e-government information services;

b) A logical procedure, based on structural equation modelling and e govermnment citizen satisfaction index, as described in this study. This was to identify a set of criteria that contributes more to citizen satisfaction with e-government information services; and

3.5 Definition of Dimensions

Below is a brief description of the dimensions used in this research to evaluation citizen satisfaction in e-government.

Table 3.2

Definitions of dimensions

Dimensions	Definition	References
Citizen expectations	Citizen expectation, in this study, describes the outcome of prior experience with e-government information services satisfaction. It measures the expectation of the citizens for e-government services, meeting their needs, being reliable and overall quality of e-government information services	(Di Nisio and Di Battista, 2010; Yao and Zhao, 2010). (Kunstelj, Jukic and Vintar, 2010; Zalm *et al.*, 2010).
Perceived service quality	Perceived service quality is the overall evaluation of online service quality after citizens have used government e-services. It measures perceived guidelines, the simplicity of using e-government services	(Yao and Zhao, 2010) (Turkyilmaz and Ozkan, 2012).

	and timely response to citizens' request during a service transaction. It evaluates customization and reliability of service	
Citizen complaint handling	Citizen complaint handling refers to intensity of complaints and the way in which the government manages these complaints. It is measured in terms of ease of lodging complaints, response time to complaints lodged, and how well the complaints are handled	(Turkyilmaz and Ozkan, 2012; Di Nisio and Di Battista, 2010). (Chen, Huang and Hsiao, 2006).
Citizen satisfaction	Citizen satisfaction indicates how many citizens are satisfied and how well their expectations are met. It evaluates whether e-government performance is meeting the ideals of e-government, fulfilment of expectations and overall citizen satisfaction	(Zalm *et al.*, 2010). (Hafeez and Hasnu, 2010).
Citizen trust	Citizen trust measures the level of experience the citizen has in relation to the e-government service transaction from the time of accessing it up to the last stage of service interaction. This also involves trustworthiness of the government and that the citizens will not feel betrayed.	(Radcmie Ja 2016)

Table 3.3

Conceptual measures of citizen satisfaction

Citizen Expectation	
CE1	Expectation of e-government service meeting my personal needs

CE2	Expectation of e-government service reliability
CE3	Expectation of overall e-government service quality
Perceived Quality	
PQ1	Perceived guidelines to access e-government service
PQ2	Perceived simplicity of completing e-government service transactions
PQ3	Perceived timely response in e-government service transactions
Citizen Complaint Handling	
CC1	Complaints on e-government service are well handled
CC2	Lodging a complaint with e-government service is easy
CC3	Rate of e-government complaint is low
Citizen Satisfaction	
CS1	Satisfaction with e-government service fulfilling expectations
CS2	Satisfaction with e-government service compared to ideal government service
CS3	Overall satisfaction
Citizen Trust	
CT1	Increase participation in accessing e-government service
CT2	Continuous participation in accessing e-government service
CT3	Participation in recommending e-government service to others

3.6 Research hypothesis

Hypothesis of directly influencing factors

3.6.1 Perceived quality

Perceived service quality is the overall evaluation of online service quality after citizens have used government e-services. Several prior research studies strongly validated the theme that perceived value contributes to citizen's satisfaction.

Customer value comes from performance outcome and reflects customer behaviors. Perceived quality is a construct representing how consumers judge "what was received to acquisitioncosts (e.g., financial, psychological, effort)" (Oliver 1997). Zeithaml (1988) defines value as"the consumer's overall assessment of the utility of a product based on perceptions of what isreceived and what is given." Customer value isa customer-perceived preference for andassessment of product attributes, attributes performance, and consequences arising from usethat facilitate achieving customer objectives and purposes in use situations (Woodruff 1977). This definition links perceived customer value to product or service use, and attributesperceived value to the perceived difference between what a consumer perceives and what theypay in exchange for what they receive (Woodruff 1977). Behavioral intentions representvarious consumer responses such as intention to use a product or service, and complaintintention (Shank 2002). Perceived quality isa consumer's perception of "the totality offeatures and characteristics of a product or service that bear on its ability to satisfy stated orimplied requirements" (Oliver 1997). Service quality is closely correlated with usersatisfaction, in which satisfaction is defined as the gap between expectations and the perception of service rendered (Pitt, Watson and Kavan 2012)

H1: There is a positive and direct relationship between perceived quality and customer satisfaction.

The following three dimensions can be used to describe the Citizens Perceived Quality:

Response timeliness – This is how fast a service request can be completed. It is measured by the speed a task is completed, by response time and execution time.

Ease of use – The usability of the website during citizen navigation. This reduces customer frustration and results in citizen satisfaction.

Perceived guidelines – Help provided by government when citizen are searching for information or doing transaction

3.6.2 Citizen Expectations

Citizen expectation, in this study, describes the outcome of prior experience with e-government information services satisfaction. This is another important antecedent to citizen satisfaction with egovernment portals. According to MIS literature, content citizen expectation is concerned with measuring the yield of the system which includes the dimensions of accessibility, relevancy, timeliness, understandability, appropriate amount, objectivity, security, completeness, free of error, and concise presentation (DeLone & McLean, 1992). In the e-government context, Chutimaskul, Funikul, and Chongsuphajaisiddhi (2008) viewed citizen expectation as having the dimensions of accuracy, timeliness, relevance, precision, and completeness, which is positively related to user satisfaction. Wang and Liao (2008) found information quality of the e-government site as the most important antecedent to citizen satisfaction, ahead of system quality and service quality

H2: There is a positive and direct relationship between perceived quality and customer satisfaction.

The following three dimensions can be used to describe the Citizens Perceived Quality:

Meeting personal needs – This measures the expectations of citizens on e-government services to meet their personal needs when doing a transaction.

Reliability – This measures citizens' expectation of e-government to deliver services consistently, producing, meeting and exceeding service specifications and also the availability of the services.

Overall quality – this measures the citizens' expectation of e-government to meet the overall quality expected.

3.6.3 Citizen Complaint Handling

Citizen complaint handling refers to intensity of complaints and the way in which the government manages these complaints. Citizen complaint handling refers to the intensity of complaints and the way in which government manages these complaints (Turkyilmaz and Ozkan, 2012; Di Nisio and Di Battista, 2017). Generally, defining customer complaint is the disagreement between an organization and their customers (Fornell *et al*., 2018). The government must be responsive to the needs and queries of citizens and that service quality is satisfactory. The relationship between citizen trust and citizen complaint handling level depends on the government's efficiency in handling complaints and if a government agent handles complaints effectively, it will be able to turn dissatisfied citizens to loyal ones (Fornell, 2018). If the government puts more effort to reduce citizen complaints, the level of citizen satisfaction will rise and in turn the government will realize a citizen-participated e-government (Kim, Im and Park, 2014).

H3: There is a positive and direct relationship between citizens' complaint handling and customer satisfaction.

The following three dimensions can be used to describe the citizens' complaint handling:

Complaint's handling – How fast and well citizen complaints are handled.

Easy lodging of complaints – How easy citizens finds it to lodge a complaint with government and the response time taken by government to resolve the complaints.

Rate of complaining – How often citizens lodge complaints with government.

3.6.4 Citizen Trust

Citizen trust measures the level of experience the citizen has in relation to the e-government service transaction from the time of accessing it up to the last stage of service interaction. This also involves trustworthiness of the government and that the citizens will not feel betrayed. Although there is little agreement in the literature about how to define citizen trust in government or how it is gained and lost, most writers agree that it is an important determinant of public action and cooperation (Ruscio 1996; Thomas 1998). As discussed, above, citizen trust in government is built upon expectations conditioned by some type of social context or interaction. Thomas identifies three broad conceptions of trust: ''(a) fiduciary trust, which is notable for asymmetric relationships and attendant opportunities

for malfeasance; (b) mutual trust, which develops between individuals who repeatedly interact with one another; and (c) social trust, which is embedded within institutions we know in common and take for granted'' (1998, 170).

H4: There is a positive and direct relationship between citizen trust and customer satisfaction.

The following three dimensions can be used to describe the citizens' trust:

Continuous participation – This evaluates if citizens are going to continue using e-government services and not switch to other resources.

Increase participation – This evaluates if citizens are going to increase the rate at which they use e-government services.

Participation in recommending e-government – This evaluates if citizens are going to recommend the use of e-government services to their families, friends and co-workers

3.6.5 Citizen satisfaction

Citizen satisfaction indicates how many citizens are satisfied and how well their expectations are met. Customer satisfaction has been recognized as one of the most important elements of contemporary marketing thought, particularly in the case of service sectors (Bejou, Ennew & Palmer, 1998) and one of the main goals in marketing (Erevelles & Leavitt, 1992). Because satisfied customers tend to maintain their consumption pattern or consume more of the same product or service, customer satisfaction has become an important indicator of the future behavior (McQuitty, Finn & Willey, 2000). Due to its centrality, various theories and models ave been developed in an effort to define the construct and explain satisfaction in different products/services and consumption stages (for a review, see Erevelles & Leavitt, 1992).

Marketing scholars are divided over the antecedents of service quality and satisfaction (Ting, 2004). Some researchers believe that service quality leads to satisfaction (Parasuraman et al. 1998; Bitner, 1990) while others think otherwise. Empirical studies regarding this issue

support the assertion that service quality is the antecedent of satisfaction (e.g. de Ruyter, Bloemer & Pascal, 1997; Brady & Robertson, 2001; Sureshchandar, Rajendran & Kamalanabhan, 2002). Within this causal ordering, satisfaction is described as a "post-consumption evaluation of perceived quality" (Anderson & Fornell, 1994). It is an emotional state that results from experiencing a service quality encounter and comparing that encounter with what was expected (Oliver, 1980). Rust and Oliver (1994) offer support for this position in their suggestion that quality is "one of the service dimensions factored into the consumers' satisfaction judgment". As consumer perceive a widening gap between expected and desired levels of service, feeling of dissatisfaction will increasingly develop. The review of the literature so far has provided support for the idea that there is a strong direct link between service quality and satisfaction. In this paper, we analyze the relationship between components of municipal service quality and citizen satisfaction. The study fills the gap in the literature by focusing on a setting previously overlooked by researcher

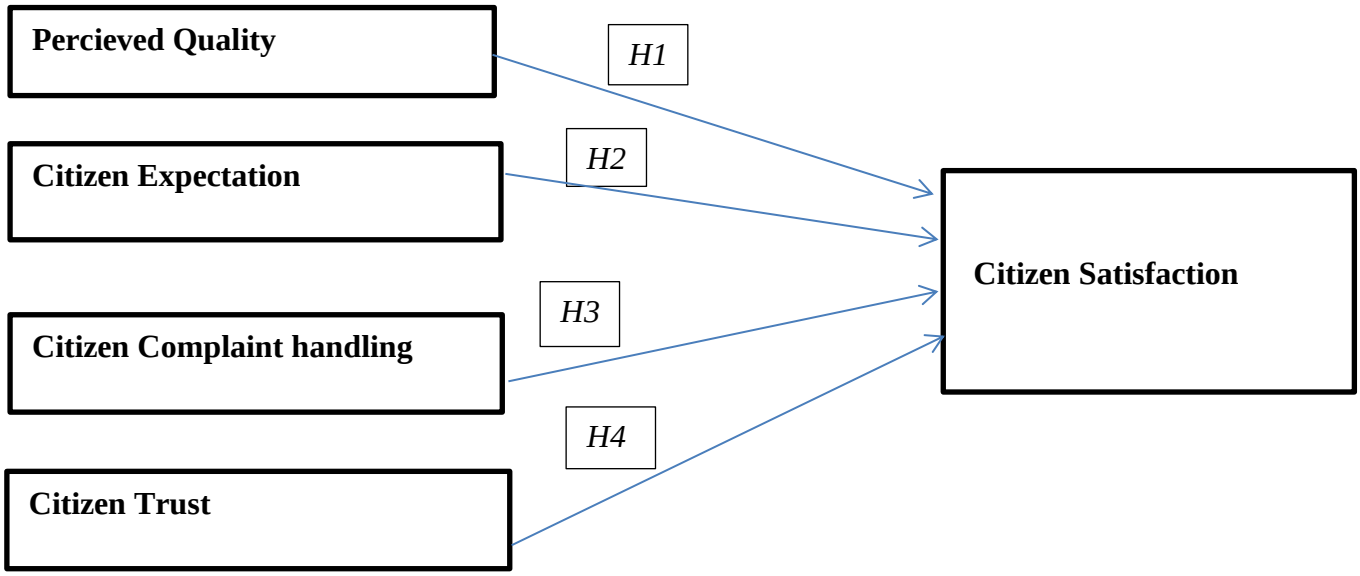
There is a positive and direct relationship between citizen satisfaction e-government performances.

The following three dimensions can be used to describe the citizen's satisfaction:

Overall satisfaction – This measures overall citizen satisfaction with e-government information services.

Meeting ideal e-government – This measures whether e-government services provided are meeting the ideal e-government expected by citizens.

Fulfilling expectations – This measures whether e-government is fulfilling the expectations of the citizens.



3.7 Variables

In this study, the researcher will examine how independent variables affect the dependent variable. Hence the dependent variable is Citizen Satisfaction and the independent variables are Percieved Quality (PQ), Citizen Expectation (CE), Citizen Trust (CT), Citizen Complaint Handling (CC)

3.7.1 Dependent variable

The variable that depends on other factors that are measured. These variables are expected to change as a result of an experimental manipulation of the independent variable or variables. It is the presumed effect. In this research, Citizen Satisfaction (CS) is our dependent variable.

3.7.2 Independent variable

A completely independent variable is a variable you have control over, what you can select and manipulate. It is commonly what you consider will simulate the dependent variable. In some

instances, you might not exactly be able to manipulate the independent variable. It could be something that is already there and is fixed, something you would like to assess with favor to how it affects something else. In this study, we have four independent variables Percieved Quality (PQ), Citizen Expectation (CE), Citizen Trust (CT), and Citizen Complaint Handling (CC).

3.7.3 Control Variable

The variable that is placed frequently in order to determine or elaborate on the relationship between two other variables that is control variable. Control variable should not be confused with the controlled variable, which is definitely an alternative term for the independent variable. That is the Age, Gender, Marital Status etc

3.8 Data Analysis

The data collection procedure used for this study was questionnaire designed. The use of questionnaire is perhaps the most convenient manner of collecting the relevant information for research. In so doing the researcher will administer questionnaire containing close-ended and predetermined questions to selected respondents. The questionnaire will be as simple as possible so that the respondents could provide the appreciated answer for each question.

The questionnaire includes seven sections and a total of 22 questions. First **7** questions are for obtaining respondent's background data, 1 question is about internet usage areas, 1 question is about the usage of e-government services, 12 questions are about e-government citizen satisfaction items grouped under four factors as hypothesized in the research model and the last 1 to determine the level of E-government satisfaction of the citizen. The last 13 questions are measured using a 5-point Likert scale where (1) is strongly disagree, (2) is disagree, (3) is neutral, (4) is agree and (5) is strongly agree. The questionnaire was distributed to a convenience sample over internet. Google Forms was used to capture data from different locations of Liberia. Number of respondents was 316 and since 35 of them did not use E government, they were eliminated from the analyses. The data related to the remaining 281 respondents were analyzed using IBM SPSS Statistics software.

Chapter 4 Research Analysis

4.1 Descriptive Statistics

The first step was to assess the reliability of the questionnaire using Cronbach's alpha test. The reliability values are presented in Table 3 and they show that the reliability of the questionnaire is high since all of them are greater than 0.7 which is the minimum acceptable value for internal consistency of items**.**

The results for the background data of the respondents are summarized in Table 4. According to Table 4, there is an equivalent distribution between males (47.3%) and females (52.7%) in the sample and similarly between marital status of the respondents where percentage of single ones is 54.4 and married ones is 45.6. The respondents can be specified as young and middle-aged and mostly working. A total of 281 respondents participated in this study with regard to the factors influencing their satisfaction with e-government portals in Liberia. The characteristics of the sample are shown in Table IV. Slightly more than half of the respondents (50%) were between the ages of 18 and 34 years. Male respondents represented about a third of the respondents and female respondents represented two-thirds. Most of the respondents were highly educated, with more than half (40.2%) holding a bachelor's degree, followed by High School (35.9%), graduate degree (23.8%). In terms of occupation, government employees (22.4%), Unemployed (30.2%) represented the largest groups, followed by private sector employee respondents (40.9%).

In addition to analyzing the background data of the respondents, their usage habits for internet and e-government services were also investigated. According to the results, respondents mostly use internet for social media (91%), communication (88%), banking (80%), e-commerce (72%) and education services (71%) whereas they use e-government portal mostly for judicial record (58%), residence (48%) and official document inquiries (42%), social security services (48%), tax transactions (43%), and Government Information searches (42%). On the other hand, to determine the satisfaction level of citizens from e-government services, the mean of the e-government citizen satisfaction values of the respondents was calculated.

Table 4.1 Background data of the respondents (n=281)

Characteristics	Frequency	%
Gender		
Male	133	47.3
Female	148	52.7
Age		
18-24	92	32.7
25-34	53	18.9
35-44	43	15.3
45-54	63	22.4
55-64	26	9.3
64 and over	4	1.4
Marital Status		
Single	153	54.4
Married	128	45.6
Educational Level		
High School	101	35.9
Bachelor's Degree	113	40.2
Graduate Degree	67	23.8
Monthly Income (USD)		
Under 100	72	25.6
100 – 500	65	23.1
500 – 1000	76 21	27.0
1,,000 -2,000	28	10.0
Over 2,000	40	14.2
Occupation		
Unemployed	85	30.2
Self employed	18	6.4
Government Employee	63	22.4
Private Sector Employee	115	40.9

4.2 Reliability Results

The first step was to assess the reliability of the questionnaire using Cronbach's alpha test. The reliability values are presented in Table 2 and they show that the reliability of the questionnaire is high since all of them are greater than 0.7 which is the minimum acceptable value for internal consistency of items.

Table 4.2 Reliability Results

Factor	**Number of items**	**Cronbach's Alpha Value**	**Mean**
Perceived Quality	3	0.753	3.868
Citizen Expectation	3	0.766	3.977
Citizen Complaint handling	3	0.867	3.863
Citizen trust	3	0.782	3.887

To check multidimensionality of prercieved quality, coefficient alpha was computed separately for all variables identified. The reliability of each construct is: Percieved quality 0.753; Citixen expectation 0.766; Citizen complaint handling 0.867; Citizen Trust 0.782; Customer service 0.739; Information quality 0.762; Trust 0.727 and the table shows the score of constructs reliability are ranging from 0.753 to 0.867; the highest reliability of the constructs was 0.8142 (Citizen complaint handling) and the lowest reliability was 0.707 (Perceived quality). In the present study, overall alpha coefficients value was 0.766, which is higher than 0.7, indicating good consistency among the item's variables and for a measure to be acceptable, coefficient alpha should be above 0.7 (Nunnally,1978).

4.3 Validity Analysis

Factor analysis and scale reliabilities Factor analysis and reliability analysis were used in order to determine the data reliability for the Quality of e-Government services and citizen Satisfaction within factor, factor analysis was performed to assess convergent validity. All individual loadings were above the minimum of 0.5 recommended by Hair et al. (1998). The results of the factor analysis and reliability tests of Quality of e-Government services are presented in Table (7).

Table 4.3 Validity Results

Variables	**M**	**Loadings**	**Reliability**
Percieved Quality	3.8688		**0.731**
PQ1		0.634	
PQ2		0.677	
PQ3		0.542	
PQ4		0.568	
PQ5		0.661	
PQ6		0.679	
Citizen Expectation	3.9777		**0.695**
CE1		0.714	
CE2		0.658	
CE3		0.627	
CE4		0.691	
CE5		0.735	
CE6		0.667	
Citizen Complaint Handling	3.863		**0.796**
CCH1		0.567	
CCH2		0.624	
CCH3		0.589	
CCH4		0.716	
CCH5		0.543	
CCH6		0.657	
Citizen Trust	3.8875		**0.783**
CT1		0.729	
CT2		0.568	
CT3		0.574	
CT4		0.632	
CT5		0.643	
CT6		0.686	
Variables	**M**	**Loadings**	**Reliablity**
Citizen Satisfaction	**3.9407**		**0.778**

CS1		0.567	
CS2		0.628	
CS3		0.647	
CS4		0.591	
CS5		0.6432	
CS6		0.677	

4.3 Regression Model

Multiple Regression Analysis Multiple regression analysis was employed to test the hypotheses. It is a useful technique that can be used to analyze the relationship between a single dependent variable and several independent variables (Hair et al., 1998). Before employing the multiple regression test, Variance Inflationary Factor (VIF) test and Tolerance test were used to test the relationships between independent variables, taking into account that VIF should not exceed the value of 10 and Tolerance value should exceed the value of 0.05. The results can be seen in Table (6). The results shown in Table (6) © 2016 Global Journals Inc. (US) indicate that VIF values for all variables were less than 10 (1.338-2.902), and values of Tolerance for all variables were greater than 0.05 (0.345-0.747). Therefore, there is no multicolleniarity between independent variables, which means that the model used in this study is correct. Based on this method, the four main independent variables (quality of e-Government services) and dependent variable (Citizen Satisfaction) were entered together. Histogram and Normal P-P plot of standardize residual that were conducted also indicate normality of the error term while scatter plot shows consistent variance of error terms (Homoscedasticity). The partial regression plot indicates positive linearity of the relationship between the independent (quality of e-Government services) variables and dependent variable (Citizen Satisfaction). From these analyses, it can be concluded that multiple regression model of this study meets the four assumptions required to ensure validity of its significance test. This indicates that there is a statistically significant relationship between quality of e-Government services and Citizen Satisfaction. As depicted in Table (6), the coefficient of determination (R 2) was 0.879, representing that 87.9 percent of Citizen Satisfaction can be explained by the six model variables. The proposed model was adequate as the F-statistics was significant at less than 1 percent level ($p < 0.01$). The individual model variables revealed that Citizen Trust (which got the highest effect) ($t = 9.263$, $p < 0.05$),

followed by Citizen Expectation (t = 8.383, p< 0.01), Citizen complaint Handling (t = 5.794, p < 0.01), and Percieved Quality (which got the lowest effect t = 3.651, p < 0.01) were found to have a significant and positive effect on Citizen Satisfaction. Therefore**, the hypotheses H1, H2, H3, H4, were supported.**

Table 4.5 Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.7.96[a]	.725	. 450	1.5643

The table has shown that R-value is 0.71 this value indicates that there is strong impact of these four independent variables on citizen satisfaction. This means there is an associative relation exists between citizen satisfaction and the selected independent variables. It can also be observed that the coefficient of determination i.e. the R-square (R^2) value is 0.621 which represents that 80% variation of the dependent variable overall Citizen satisfaction can be explained by the independent variables. This also indicates that the strength of the associative relationship between citizen satisfaction and the selected four independent variables is good.

Table 4.6 ANOVA table

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	2647.124	11	246.668	135.783	.000[b]
Residual	1452.336	451	2.603		
Total	4099.46	473			

a. Dependent Variable: CS

b. Predictors: (Constant), Gender, Occupation, Monthly Salary, PQ, CE, CT CC,

From this table, it has been founded that, the value of F-statistics is 102.562 and the level of significance is 0.000. It indicates that the overall model was a reasonable fit and there was a statistically significant association between citizen satisfaction and selected independent variables. It can be concluded that there is a strong associative relationship exists between citizen satisfaction and selected independent variable.

4.4 The Regression Result

Table: 9: Regression Summary of Quality of e-Government services on beneficiaries Satisfaction (N=281)

MODEL		B Coefficient	Beta (β)	**T**	**SIG**	**COLLINEARITY STATISTICS**	
						Tolerance	VIF
1	Percieved Quality	1.96	.597	3.651	0.000	0.644	1.553
	Citizen Expectation	1.38		8.383	0.002	0.607	1.648
2	Citizen Complaint Handling	1.13		5.794	0.006	0.352	2.838
	Citizen Trust	1.066	.331	9.263	0.002	0.747	1.338
Notes: Adj. R 2 = 0.879; Sig. F = 0.000; F-value = 390.917; dependent variable, Citizen Satisfaction $p < 0.01$							

4.5 Summary result of Hypothesis test

Items	Hypothesis	Results
H1	***There is a positive and direct relationship between perceived quality and customer satisfaction.***	Supported
H2	***There is a positive and direct relationship between citizen Expectation and customer satisfaction.***	
H3	***There is a positive and direct relationship between perceived quality and customer satisfaction.***	
H4	***There is a positive and direct relationship between citizen trust and customer satisfaction***	

.

Chapter 5 Conclusion

5.1 Conclusions

Liberia is implementing an action plan to enhance its e-government system. This study is done to measure the satisfaction level of Liberian citizens from e-governmentservices and to determine the effects of four factors; ease of use, savings, trust and service quality on this satisfaction. For this purpose, a questionnaire was prepared, sent to citizens via internet and a total of 281 valid responses were collected to validate the model. The results support all four hypotheses stated in the model indicating that ease of use, savings, trust and service quality are significant predictors of citizen satisfaction with e-government system where the overall satisfaction of the e-government portal is 3.89. Although the empirical findings of the study seem useful, the limited size and the nationality of the dataset makes difficult to draw any generalized conclusions. Therefore, as future study, considering that this study is concentrated on population of Turkey which is a developing country, this research can also be undertaken in other countries in order to provide a more representative sample size. Overall, besides its limitations, it can be concluded that the model of this study can assist e-government designers and developers for enhancing their understanding of e-government citizen satisfaction and for improving their e-government services.Liberia is implementing an action plan to enhance its e -government system. This study was done to measure the level of satisfaction of Liberian citizens from e-government Services and to determine the effects of four factors; perceived quality, citizen satisfaction, citizen trust and citizen expectation and citizen complaint handling on this satisfaction. Practically, the results of this study have at least two policy implications. First, because the study finds (a) that service quality is a powerful driver of e government service quality and (b) that perception of service value depends significantly on how well e-government systems promote efficiency, democracy, and inclusiveness, one implication is that to enhance citizens' perceptions of service value, e-government policymakers and website designers must take comprehensive measures to improve service quality along all four dimensions of Perceived quality, Citizen Expectation, Citizen Trust, Citizen Complaint handling and citizen satisfaction. Second, the results of this study suggest that g-CSI is the most suitable criteria to follow when measuring citizen satisfaction in e government service quality Therefore, e-government value creation efforts should focus on service improvements such as providing citizens with precise and

prompt information, convenient one-stop service delivery, and a secure online service environment, which, in turn, indirectly encourage citizens to reuse e-government services and will ultimately raise the e-government utilization rate.

5.2 Recommendation

In light of the study results, the researchers recommend the following:

1. Working on increasing the awareness of the importance of transforming all services provided by the government to electronic services. Generalizing the experience of government e-Government platforms in those services to the rest of the ministries in the Liberia.

2. Improving the capabilities of the employees in solving the problems of platforms to enhance the electronic services. It is important to response to the needs and requirements of the Users, and in addition, to answering the users' questions and enquires as fast as possible.

3. Working on improving the website design will decrease the download time also the pressure on the beneficiaries. Thus, they will reach the information in a smooth easy way.

4. Solving all criticism that is facing the electronic business specially the ones related to privacy and to the beneficiaries. This is done by ensuring the user that the platforms are safe and has the programs needed to prohibit any eligible access. The information of the customers will be used only on the service requested by them.

5. Providing the electronic website with all technical support; either the audio or visual in local delect or in English. This took into consideration that number of high school student in the Liberia exceeds the number of employees (citizens) according to the latest statistics.

6. Expanding the electronic services provided by governmentr in order to include all services of all ministries and angencies such as: identity, social number and other information that takes long time to finish their procedure.

5.3 Contribution of the Study

The findings of this study provide important implications for government policy makers and administrators to identify important determinants of citizen satisfaction with e-government portals. In addition, the study offers recommendations to enhance the overall satisfaction of citizens with e-government portals. Among the five factors tested, all are important

determinants of citizen satisfaction; namely, citizen expectation, perceived quality, and citizen trust, citizen complaint handling and citizen satisfaction. To further enhance the satisfaction level of citizens in e governance; e-government portals should provide web navigation, menus, icons, and buttons that are consistent, friendly, and easy to use. Online assistance such as online tutorials and video clips using caricatures and illustrations should be made available to help citizens use e government portals more effectively. The government also should enhance the technical aspects and functionality of e-government portals by, for example, introducing live chat, which has been a common feature of e-commerce sites. A live chat provides real-time interaction with citizens who face problems or have inquiries about e-government portals. Government departments and agencies should continue to ensure that the content on their portals is of good quality in terms of accuracy, sufficiency, and currency. Government departments and agencies should also have designated personnel to monitor and advise citizens on the technical and functionality aspects of e government portals. It is important for government portals to provide quality content and services that satisfy the citizens by meeting their needs. All these recommendations are to ensure the sustainability of government initiatives and to increase the level of citizen satisfaction over time. On the other hand, the study did not find citizen trust to be a significant determinant of citizen satisfaction with e-government portals. Government departments and agencies need to ensure that the operations and functionality of their portals continue to perform so as to meet the expectation of citizens in order to garner their continuous use of the portals.

5.4 Limitations

Although the empirical findings of the study seem useful, the limited size and the nationality of the dataset makes it difficult to draw any generalized conclusions. Therefore, as future study, considering that this study is concentrated on population of Liberia which is a developing country, this research can also be undertaken in other countries in order to provide a more representative sample size. Overall, besides its limitations, it can be concluded that the model of this study can assist e-government designers and developers for enhancing their understanding of e-government citizen satisfaction

References

[1]. Aibinu, A. A. and Al-Lawati, A. M. 2010. Using PLS-SEM technique to model construction organizations' willingness to participate in e-bidding. Automation in construction, 19(6): 714-724.

[2]. Abhichandani, T. and Horan, T. A. 2006. Towards a new evaluation model of egovernment satisfaction: results of structural equation modelling. Proceedings of the twelfth Americans conference on information systems, Acupulco, Mexico, August 4-6. Adeyemo, A. B. 2011. E-government in Nigeria: an assessment of Nigeria's global e-government ranking. Journal of internet and information system, 2(1): 11-19. Abhichandani, T., Horan, T. A. and Rayalu, R. 2005.

[3]. Measure of E-Government Service Satisfaction in Transportation. In Proceedings of theinternational conference on e-government (ICEG 2005) (p. 1). Academic Conferences Limited.

[4]. Alwin, D. F. and Hauser, R. M. 1975. The decomposition of effects in path analysis. American sociological review, 40(1): 37-47. Albert, M., Njanike, K. and Mukuch, P. 2011.

[5]. Gender effects on customer satisfaction in banking industry: a case of commercial banks in Bindura, Zimbabwe. E3 Journal of business management and economics, 2(1): 40-44. Alanezi, M. A. and Basri, A. K. S. 2010.

[6]. A proposed instrument dimensions for measuring e-government service quality. International journal of u- and e- service, science and technology, 3(4): 1-18. Alanezi, A. M., Mahmood, A. K. and Basri, S. 2011. Conceptual model for measuring e-government service quality. IEEE conference on open systems, September 25-28, Malaysia. Anderson, E. W. and Sullivan, M. W. 1993.

[7]. The antecedents and consequences of customer satisfaction for firms. Journal of marketing science. 12(2): 125-143. Al-Shehry, M. A. 2008. Transformation towards e-government in the Kingdom of Saudi Arabia: technological and organisational perspectives. Doctoral thesis, De Montfort University.

[8]. Alshawi, S., Alahmary, A. and Alalwany, H. 2007. E-government evaluation factors: citizen's perspective. In: Proceedings of the. European and Mediterranean conference on information systems (EMCIS 2007). Polytechnic University of Valencia, Spain, June 24-26. American Customer Satisfaction Index. 2006.

[9]. The American Customer Satisfaction Index: the voice of the nation's customer (online). Available: http://www.theacsi.org. (Accessed 12 December 2006) Anderson, E. W. and Fornell, C. 2000. Foundations of the American Customer Satisfaction Index. Total quality management, 11(7): 869-882. Al-Tarawneh, K. A. 2012. Measuring e-service quality from the customers' perspective: an empirical study on banking services.

[10]. International research journal of finance and economics, 91: 123. Bayol, M., Foye, A., Tellier, C. and Tenenhaus, M. 2000. Use of PLS Modelling to estimate the European Customer Satisfaction Index (ECSI) model. Statistica application, 12(3): 361-375. Barnes, S. J. and Vidgen, R. T. 2006. Data triangulation and web quality metrics: a case study in e-government.

[11]. Information and management, 43(6): 767-777. Bhattacherjee, A. and Sanford, C. 2009. The intention-behaviour gap in technology usage: the moderating role of attitude strength. Behaviour and information technology, 28(4): 389-401. Bollen, K. A. 1989.

[12]. Structural equations with latent variables. New York, NY: Wiley and Sons, 20. Buckley, L. 2003. E-service quality in public sector. Managing service quality, 13(6): 453-463. Bwalya, K. J. 2009. Factors affecting adoption of e-government in Zambia. Electronic journal of information systems in developing countries, 38(4): 1-13. Bwalya, J. M. and Healy, M. 2010. Harnessing e-government adoption in SADC region. A journal of e-government (online), 8(1), 23-32. Available: www.ejeg.com/ Carter, L. and Belenger, F. 2005.

[13]. The utilization of e-government services: citizen trust, innovation and acceptance factors. Information systems, 15(5): 25. Centre for Digital Government. 2005. An introduction to citizen service technologies and 3-1-1: hello – the first world in reinvigorating the relationship between citizens and their government – a strategy guide for local government (online). Available: http://centredititalgov.com.

[14]. Rodríguez, P. G., Burguete, J. L. V., Vaughan, R. & Edwards, J. (2009). Quality dimensions in the public sector: municipal services and citizen's perception. Journal of International Review on Public and Nonprofit Marketing, 6(1), 75-90. Sachdev, S. B. & Verma, H. V. (2004). Relative importance of service quality dimensions: a multisectoral study.

[15]. Journal of Services Research, 4(1), 93-116. Scott, D. & Shieff, D. (1993). Service quality components and group criteria in local government. International Journal of Service Industrial Management, 4(4), 42-53. Sivadas, E. & Baker-Prewitt, J. L. (2000). An examination of the relationship between service quality, customer satisfaction, and store loyalty. International Journal of Retail & Distribution Management, 28(2), 73-82. Sureshchandar, G. S., Rajendran, C. & Kamalanabhan, T. J. (2001).

[16]. Customer perceptions of service quality: A critique. Total Quality Management, 12(1), 111-124. Tan, K. C. & Kek, S. W. (2004). Service quality in higher education using an enhanced SERVQUAL approach. Quality in Higher Education, 10(1), 17-24. Van Ryzin G. G. (2004). The measurement of overall citizen satisfaction. Public Performance and Management Review, 27(3), 9-28. Wan Yusoff, W. Z., Ismail, M. & Newell, G. (2008). FM-SERVQUAL: a new approach of service quality measurement framework in local authorities.

[17]. Journal of Corporate Real Estate, 10(2), 130-144. Wisniewski, M. (2001). Using SERVQUAL to assess customer satisfaction with public sector services. Managing Service Quality, 11(6), 380-388. Wisniewski, M. (2001). Assessing customer satisfaction with local authority services using SERVQUAL.

[18]. Total Quality Management & Business Excellence, 12(7&8), 995-1002. Wisniewski, M. & Donnelly, M. (1996). Measuring service quality in the public sector: the potential for SERVQUAL. Total Quality Management, 7(4), 357-365. Zeithaml, V. A., Parasuraman, A. & Berry, L. L. (1990). Delivering Quality Service. New York: The Free Press. Zisis, P., Garefalakis, A. & Sariannidis, N. (2009). The application of performance measurement in the service quality concept: the case of a Greek service organisation. Journal

[19]. Rodríguez, P. G., Burguete, J. L. V., Vaughan, R. & Edwards, J. (2009). Quality

dimensions in the public sector: municipal services and citizen's perception. Journal of International Review on Public and Nonprofit Marketing, 6(1), 75-90.

[20]. Sachdev, S. B. & Verma, H. V. (2004). Relative importance of service quality dimensions: a multisectoral study. Journal of Services Research, 4(1), 93-116. Scott, D. & Shieff, D. (1993). Service quality components and group criteria in local government. International Journal of Service Industrial Management, 4(4), 42-53. Sivadas, E. & Baker-Prewitt, J. L. (2000).

[21]. An examination of the relationship between service quality, customer satisfaction, and store loyalty. International Journal of Retail & Distribution Management, 28(2), 73-82. Sureshchandar, G. S., Rajendran, C. & Kamalanabhan, T. J. (2001). Customer perceptions of service quality: A critique. Total Quality Management, 12(1), 111-124. Tan, K. C. & Kek, S. W. (2004). Service quality in higher education using an enhanced SERVQUAL approach. Quality in Higher Education, 10(1), 17-24. Van Ryzin G. G. (2004).

[22]. The measurement of overall citizen satisfaction. Public Performance and Management Review, 27(3), 9-28. Wan Yusoff, W. Z., Ismail, M. & Newell, G. (2008). FM-SERVQUAL: a new approach of service quality measurement framework in local authorities. Journal of Corporate Real Estate, 10(2), 130-144. Wisniewski, M. (2001). Using SERVQUAL to assess customer satisfaction with public sector services. Managing Service Quality, 11(6), 380-388. Wisniewski, M. (2001).

[23]. Assessing customer satisfaction with local authority services using SERVQUAL. Total Quality Management & Business Excellence, 12(7&8), 995-1002. Wisniewski, M. & Donnelly, M. (1996). Measuring service quality in the public sector: the potential for SERVQUAL. Total Quality Management, 7(4), 357-365. Zeithaml, V. A., Parasuraman, A. & Berry, L. L. (1990).

[24]. Delivering Quality Service. New York: The Free Press. Zisis, P., Garefalakis, A. & Sariannidis, N. (2009). The application of performance measurement in the service quality concept: the case of a Greek service organisation. Journal of Money, Investment and Banking, 9, 21-47.

[25]. Agarwal, R. and Karahanna, E., (2000), ―Time flies when you're having fun: cognitive absorption and beliefs about information technology usage,‖ MIS Quarterly, Vol.24, No.4, pp. 665-94.

[26]. Bagozzi, R. P., & Yi, Y. (1988), ―On the evaluation of structural equation models‖, Journal of the Academy of Marketing Science, 16(1), pp. 74-94.

[27]. Bank, J. (2000), ―The essence of Total Quality Management‖, FT/Prentice-Hall, Harlow.

[28]. Banker, R.D., Kauffman, R.J., Morey, R.C., (1990), ―Measuring gains in operational efficiency from information technology: a study of position deployment at Hardee's Inc.‖ Journal of Management Information Systems 7, pp. 29–54
.

[29]. Barbara R. Lewis, Vincent W. Mitchell, (1990) ―Defining and Measuring the Quality of Customer Service‖, Marketing Intelligence & Planning, Vol. 8, Iss: 6, pp11 – 17.

[30]. Barnes, S.J., Vidgen, R.T., (2002), ―An integrative approach to the assessment of E-commerce quality‖, Journal of Electronic Commerce Research 3 (3), pp.114–127.

[31]. Baum, C., & Di Maio, A. (2000), ―Gartner's four phases of e-government model‖. Gartner Group.

[32]. Berkley, B.J. and Gupta, A. (1994), ―Improving service quality with information technology‖, International Journal of Information Management, Vol. 14, pp.109-21.

[33]. Boyer, K.K., Hallowell, R. and Roth, A.V. (2002), ―E-services: operations strategy – a case study and a method for analyzing operational benefits‖, Journal of Operations Management, Vol. 20 No. 2, pp. 175-88.

[34]. Brogowicz, A.A., Delene, L.M. and Lyth, D.M. (1990), ―A synthesised service quality model with managerial implications‖,International Journal of Service Industry Management, Vol. 1 No. 1, pp. 27-44.

[35]. Brynjolfsson, E., Hitt, L., (1996). ―Paradox lost? Firm-level evidence on the returns to information systems spending.‖ Management Science 42, pp. 541–558.

[36]. BuddComm Research Report (2012), ―Vietnam – Broadband Market and Forecasts‖, available online at http://www.budde.com.au/Research/Vietnam-Broadband-Market-and- Forecasts.html

[37]. Cai Shaohan, Jun Minjoon, (2003), ―Internet users' perceptions of online service

Acknowledgements

Master's research study has been a very interesting journey of learning and hardworking, where received inspirations from various people such as family, teachers, friends, which supported in distinct way. Thank all those people at this very moment.

Firstly, deepest gratitude to supervisors Prof Lui Fen I am very grateful to Prof Lui Fen for providing me this opportunity to carry out my research study and for her guidance and support throughput my Master's study. I also want to thank all my teachers, colleagues here at the CQUPT Key Lab Management Science and Engernning for their encouragement and support over the past years.

Most importantly I would like to thank my parents for their constant love and support.

Appendix

Questionnaire

Survey on citizen satisfaction in E Government information services quality in Liberia

Dear Respondent,

I am a student of Masters in department of Management science & Engineering of **Chongqing University of posts and telecommunications.** I have undertaken academic research on citizen satisfaction on E government information service quality in Liberia. For this I need your sincere participation in filling the following questionnaire. I assure the information what you provide will be kept secure and used only for academic purpose.

Sincerely thank for your precious cooperation!

When responding to available questions with an answer, please select the appropriate answer by marking in the corresponding box. You only choose one of the answer.

If you have any question, please contact with me via e-mail: kadiekdk@gmail.com

1. Gender

1. Male 2. Female

2. Age

1. 18-24 2. 25-34 3. 35-44 4. 45-54 5. 55-64 6. Over 64

3. Marital Status

1. Single 2. Married

4. Educational Level

1. High School 2. Bachelor's Degree 3. Graduate Degree

5. Monthly Income

1. Under 100 2. 100-500 3. 500-1000 4. 1000-2000 5. Over 2000

6. Occupation

1. Unemployed
2. Self Employed
3. Government Employee
4. Private Sector Employee

The following question aims to assess the degree of influencing factors of online purchasing intention by professionals. Please indicate your opinion by the appropriate number using the scale below.

32

1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree.

Influencing Factors		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Percieved Quality	PQ1.Guidelines are available to help you access E Gov't Portals	1	2	3	4	5
	PQ2. E Gov't Platforms are easy to use	1	2	3	4	5
	PQ3. Transaction on E Gov't Platforms are done in time	1	2	3	4	5
Citizen Expectation	CE1. My personal needs are met with importance	1	2	3	4	5
	CE2. E Gov't portals are very reliable.	1	2	3	4	5
	CE3. Interactions on E Gov't Platforms is highly efficient	1	2	3	4	5
Citizen Complaint Handling	CC1. Complaint on E Gov't Platforms are well handled	1	2	3	4	5

33

	CC2. Lodging a complaint is easy	1	2	3	4	5
	CC3. Rate of complaint on E Gov't platforms are low	1	2	3	4	5
Citizen Trust	CT1. Increasing in Participation on E Gov't platforms	1	2	3	4	5
	CT2.Continuous participation on E Gov't Platforms	1	2	3	4	5
	CT3.Recommending E Government Platforms to others	1	2	3	4	5
Citizen Satisfaction	CS1. Using E Gov't Platforms saves money	1	2	3	4	5
	CS2. Using E Gov't Platforms saves time	1	2	3	4	5
	CS3. Will choose E Gov't platforms over the Physical location	1	2	3	4	5

ACRONYMS ABBREVIATIONS

MACs	Ministries, Agencies and Commissions
LISGIS	Liberia Institute of Statistics and Geo- Information Services
ICT	Information Communication Technology
G2C	Government to Citizen
G2B	Government to Business
G2E	Government to Employees
IFMIS	Integrated Financial Management Information System
ASYSUDA	Automated System for Customs Data
ATAS	Automated Tax Administration System
CSI	Citizen Satisfaction Index
G-CIS	E Government Citizen Satisfaction Index
CE	Citizen Expectation
PQ	Perceived Quality
CC	Citizen Complaint Handling
CT	Citizen Trust
CS	Citizen Satisfaction