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A REVIEW IN E-GOVERNMENT SERVICE QUALITY MEASUREMENT

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Article Info	ABSTRACT
	Governments are responsible for providing services to the public easily, efficiently, therefore they introduced electronic government as a way to minimize costs, enhance services, save time and augment performance and efficacy in the public sector. E-service Quality is one of the critical issues in the failure or success of e-government projects. It promotes the efficiency and effectiveness of governments and the relationships with users and enhances their satisfactions. Measurement of e-service quality is a complex process because it depends on citizens' perception that is difficult to be realized and measured. This paper aims to review scales measurement of e-government services quality that providing an evaluating scale based on defining the significant e- service quality dimensions. These dimensions cover important e-services requirements to enhance e-service quality.

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1.   INTRODUCTION

This paper has conducted a review of a critical assessment of broad research and theory relating to e-government services, its quality and means of assessing the quality. Several studies are compiled and analyzed in order to summarize knowledge and provide an insight into the background and context of e-government studies [1].

In delivering the review of this paper, it is presented into five main sections. The first one is related to the e-government concept including definition and types. The second section addresses e-government implementation covering barriers and benefits. The third section presented a sound overview of quality e-government services and their dimensions and measures. The fourth section introduces the proposed dimension for e-services quality while the conclusion is in section five. Generally, this paper summarizes the literature and provides a theoretical foundation for scales measurement of e- government services quality, which can help to address all the important issues that give a clear vision on the reality and ambition of e-government services and their quality.

2.   E-GOVERNMENT CONCEPT

E-government has become one of the significant and effective means to increases the interaction between governments and stakeholders. It has the ability to increase efficiency and reduce costs, facilitate transparency and accountability, thus contribute to the total development of a country [2],[3].

2.1   E-Government Definition

There are several e-government definitions in literatures; however, there is no commonly accepted definition [4]. Some of them focus only on using the information communications technology (ICT), especially the Internet to deliver better and more efficient government services. Others indicate that e-government is the best efforts to transform governance and government [4]. Hereafter, some of these definitions:

1. E-government refers to "government owned or operated systems of information and communication technologies that transform relations with citizens, the private sector and other government agencies so as to promote citizen empowerment, improve government efficiency and service delivery, strengthen accountability and increase transparency" [6].
2. The World Bank defines e-government as "the use by government agencies of ICT like wide area network, the internet and mobile computing that have the ability to transform relations with citizens, businesses, and other arms of government"[7],[8],[9].
3. UNESCO defines it as, "E-governance is the public sector's use of information and communication technologies with the aim of improving information and   service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective" [8].
4. The e-government common definition means using ICTs to boost and facilitate the government business, like enhancing public services or managing government internal processes [10].
5. Most researchers agreed that e-government is the utilization of ICTs by government to perform business to and interact with citizens and businesses by using the Internet and another different electronic mediums [11].
6. E-government is the capacity of various sectors of government to provide information and services to citizens electronically in quick and accurate way, with less costs and effort any time via a single website [12].
7. E-government is "the use of information technology (especially the internet) to support government operations, engage citizens, and provide government services" [13].
8. According to the united nation, e-government is the Internet and World Wide Web use for providing government information and services to citizens [14] .

2.2   E-government Types

Based on the ICT use to smooth relations between government and other parties, several types of e-government are formulated [5],[15],[16],[12], [17]

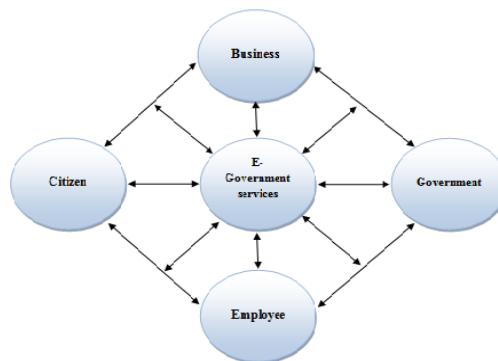The following Figureure 1 depicts the type and relationship of E-Government [18].[19].

Figure 1. E-government components [19]

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

c. Government-to-Employee (G2E)
    In this e-government type, the focus is on relations among employees within government to manage internal processes and enhance the business processes internal adequacy.
d. Government-to-Government (G2G)
    This type concentrates on providing services to other governments' entities. This comprises managing activities with stakeholders from national and local government as in humanitarian or crisis response case.

3   E-GOVERNMENT IMPLEMENTATION

Governments all over the world are seeking to prepare the resources required to implement e-government projects and provide efficient processes and better services. Implementing e-government should consider all the benefits and barriers.

3.1   E-Government Benefits and Barriers

The growing need to expand and speed up the application and development of e-government projects needs to put and propose practical solutions to overcome the obstacles that impede the implementation of these projects. Meanwhile, in e-government development and implementation, researchers have reported several benefits and challenges. The following sub sections discussed the benefits and challenges.

3.1.1   Benefits

Governments seek to use e-government to convey services to citizens and businesses. Therefore, e-Government is relied upon to assume a basic part out in governance and public administration currently. It will aid the change of administration forms and enhance government competence while additionally giving more participative chances to citizens. A definitive objective is the change of government to be completely citizen centric.

Generally, the benefits of e-government are more than expected. Researchers mentioned many benefits. The most common benefits are [20],[21],[22],[23],[24],[10],[9].
a. Easier and cheaper information delivery, knowledge and services to stakeholders.
b. Cost reductions.
c. Promote interactions among various units of government and with citizens.
d. Improve government agencies productivity and efficiency.
e. Improve service delivery and satisfaction of citizens.
f. Improves transparency.
g. Less corruption.
h. Improve government management.
i. Improved quality of life.
j. Help to build trust between governments and citizens.

3.1.2   Barriers to E-Government

Even e-government is a powerful driver of economic and social growth; many countries especially developing countries are still not able to take its full advantage due to many obstacles and barriers that hinder these initiatives. [12] developed a common framework for opportunities and challenges that face the e-government implementation programs in developing countries as shown below.
a. IT Infrastructure
b. Managerial Issues
c. Digital Cultural
d. Laws and Legislation
e. Budgeting

4   CONCLUSION (10 PT)

It is difficult to define service quality because it is not a tangible component, yet is a performance or a work expended where it is delivered and served [25]. Service quality can be reviewed as the difference between customers' expectation and their perceived performance of a service. Service quality is based on comparing customers' expectations of how an organization ought to perform and the customers' perception on service performance [26].

4.1   Traditional Service Quality

4.1.1　Definition

Traditional service quality is a service that is presented face to face, where the clients can see and perceive issues such as familiarity, purity, and physical appearance directly. Various researchers have tried to identify features that clients utilize to evaluate the quality of service they obtain [27]. In the following, some of these definitions:

a. Service quality is the variance between customers' expectation and perception of a service. Service quality is the comparison between customers' expectations of how an organization ought to perform and the performance of service that customers sense [26].
b. Service quality is the variance between customers' perceptions of the obtained service and their expectations on service performance before providing the service [28].
c. Service quality is the comparison between customers' expectations of the service before receiving, with their perceptions of the service after receiving [27].

4.1.2　Dimensions and Measure

The service quality researches led to two scales SERVQUAL and SERVPERF. The SERVQUAL is the dominant common and vastly used scale for evaluating service quality developed by Parasuraman, Berry and Zeithaml in 1985. In this scale, the service quality is measured by comparing the client perceptions of the received service with his expectation. It includes ten service quality dimensions with 97 items. Later, in the early of 1988, the authors minimized the dimensions to five dimensions with 22 items for perceptions and 22 items for expectation. The dimensions are tangibles, reliability, responsiveness, assurance and empathy [29].

The SERVPERF scale, developed by Cronin and Taylor in 1992, depends only on the perceptions of service quality for measuring [30]. It contains the same five dimensions of SERVQUAL but with only 22 items related to the customer expectations [30].

Long and McMellon [27] (cited in Pather and Usabuwera, 2010) suggested five dimensions to measure service quality namely tangibility, assurance, responsiveness, reliability and the purchasing process.

4.2　E-Services Quality

E-service became a crucial factor for organizations to retain and attract customers and achieve competitive capabilities by providing good e-services to customers [31]. Obviously, the e-services quality became a significant and common topic for research because of e-commerce growth and advancement [32].

4.2.1　Definition

There is still no unanimous agreement in the literature on the concept of e-service quality, and in particular there is no definition of the term that is generally accepted by researchers in spite of many definitions [33]. This may due to the fact that e-service quality is a multidimensional concept that may denote various things to various people in different contexts [34].

a. E-service quality is the degree to which a website simplifies effective and active shopping, purchase and delivery [35],[36].
b. E-service quality is the total customer assessment regarding the e-service quality excellence and delivery in the virtual marketplace [34],[37].
c. E-service quality is the customers' perceptions of the service along with recovery perceptions if problems occur [38].
d. E-service quality is the consumer's assessment of the service quality during online business transactions [27].
e. E-service quality is generally defined as the complete stages of a customer's interactions with internet website [28].

All the definitions stated indicated that e-service quality is the total evaluation of service quality performance by customers. Moreover, the effective use of the Internet can increase and enhance the offerings of services and create a higher standard in many industries [34],[31].

4.2.2　Dimensions And Measure

Online service quality measuring has become industry or context based that constitutes difficulties for designing a universal measure [39]. The development of e-service quality measures is required because it assists to control and enhance the online organizations performance. The attributes that discriminate traditional services from electronic ones prompted a vital update of the traditional measurements, dimensions and their items [40]. Previous researches identified various dimensions of e-service quality; however, most of the studies have identified theses dimensions from either the customer's perspective or the provider's perspective. The existing literature on e-service quality shows various e-service quality dimensions that are useful for various research types [41],[31],[37]. Researchers utilized different dimensions for e-SQ in light of the field of

their investigation. Besides, a few researchers recognized distinctive dimensions for the same field [42]. However, the terminology differs. For example, when the information usability introduced in Web service, the terms such as information, content, and information quality are used [36]. Generally, in most studies, e-service quality dimensions deal with the fact that quality produced from how the experienced service performance meet well the prior expectations of customers.

Several studies on e-service quality has been done in diverse domains such as e-service area, online banking, online travel agency, online public library; online retailing, web portal and online shopping [43],[29].

Long and Mc Mellon [44] indicated that the SERVQUAL model was applicable on the Internet, but they also indicated the need to adjust its dimensions to make it more technologically relevant and less reliant on interpersonal interactions.

Lee and Lin [45] modified SERVQUAL scale to contain web site design, reliability, responsiveness and trust as the enabler of higher e-service quality. [46] extended their SERVQUAL to measure e-service quality. The measure was called E-S-QUAL, which included fulfillment, efficiency, availability, privacy, responsiveness, contact and compensation. Barnes and Vidgen [47] proposed a WebQual 1,2,3,4. The webQual 4 includes three dimensions: information quality, Usability, and interaction. Yoo and Donthu [48] proposed SITEQUAL scale including processing speed, ease of use, aesthetic design, and interactive responsiveness. Zeithaml [35] suggested a scale including, ease of navigation, access, efficiency, reliability, flexibility personalization, responsiveness, security/privacy, assurance/trust, price knowledge, and site aesthetics.

Madu and Madu [37] (cited in Paschaloudis and Tsourela, 2014) proposerd 15 dimensions namely, structure, features, performance, aesthetics, serviceability, reliability, storage capacity, security and system integrity, responsiveness, trust, product/service differentiation and customization, assurance, web store policies, reputation, and empathy.

Wolfinbarger and Gilly [49] (cited in Paschaloudis and Tsourela, 2014) [37] proposed the e-service quality scale called eTailQ, which consisted of website design, reliability, customer service, and security. [43] proposed eight dimensions of e-service quality, which are: reliability, website design, security, fulfillment, responsiveness, personalization, information and empathy. Several dimensions to measure e-service quality are presented in Alawneh et al. [50],[51], [43]. However, none of these scales adequately evaluate E-service quality [52]. Table 1 shows some of the common measures and their dimensions.

Table 1. A Review of E-Service Quality Scale and Their Dimensions [53],[51]

Author	Scale	Dimensions	Domain
Zeithaml et al. (2002) [35]	E-SQ	Access, ease of navigation, flexibility, reliability, price knowledge, aesthetics, efficiency, personalization, privacy.	E-service
Yoo and Donthu (2001) [48]	SITEQUAL	Ease of use, design, speed, security.	Online retailing
Francis and White (2002) [54]	PIRQUAL	Functionality, ownership conditions, security.	Internet retailing
Loiacono et al. (2002) [55]	WEBQUAL	Appeal, response time, flow, image, operations, better than alternatives, innovativeness, interactivity, trust.	Online retailing
Wolfinbarger and Gilly (2003) [49]	e-TailQ	Web site design, privacy/security	Online retailing
Parasuraman et al. (2005) [46]	E-S-Qual	Efficiency, availability, privacy	E-service
Bressolles (2006) [56]	NetQual	Information, Reliability/ fulfillment, Security /privacy, Ease of use, Site design	E-service
Bauer et al. (2006) [57]	eTransQual	Reliability, process, functionality/design	Online Shopping
Barnes and Vidgen (2002) [47]	Webqual (4)	Usability, information quality, interaction	Diverse domains

5   RESEARCH PROPOSED DIMENSIONS

Based on the literature and on the dimensions proposed by researchers in different domains [58],[46],[56] and according to the government and the situation and culture, the research proposes 10 dimensions to assess the quality of e-government services. The dimensions, their related items and their operational definitions are as following:

5.1   System Availability

It means the valid and proper technical functioning of e-government site, where all links work properly [59]. The availability ensures continuous access to the website, where it is available 24 hours a week.

5.2   Privacy/Security

Privacy/Security is very significant for preventing fraud and other vulnerabilities at all government levels to increase the interaction with citizens. Governments collect huge data on their citizens, so it is a pivotal aspect to protect the security and the privacy of this personal data. To achieve Privacy/Security, several

security solutions must be integrated such as Public Key Infrastructure (PKI), biometrics, digital signature and certificate, and encryption technique [11],[9].

5.3 Efficiency

Efficiency is significant for e-government services quality. Download speed and response time are important of e-government efficiency in citizen perceived satisfaction [50].

5.4 Fulfillment

Availability to inform citizens of the correct and detailed service descriptions information about e-service is important. Incorrect information can result in negative impression to citizens. In addition, flexibility in conducting e-services can increase citizens' trust in the government [43],[53].

5.5 Reliability

Reliability is one of the significant dimensions of e-service quality. It is important to make citizens trusting that government performs what it promises to do [43],[50].

5.6 Information

E-service can be deem as information-driven service process. The information is very important for citizens to conduct e-services [43]. The information must be brief, easy to understand, relative and updated where any poor content may push the citizen to leave the website.

5.7 Ease Of Use

Ease of use has a significant impact on customers' satisfactions and behaviors. The e-government website must be user friendly, where it is easy for citizens to search for information [29]. Website must include functions that help citizens to find their needs without difficulty and facilitate their navigation through the website [41].

5.8 Website Design

The website design is the main access to government and successfully conducting e-services. Unorganized website design may confuse citizens and make them leaving the website [43]. Many studies indicated that web site design has a major role in achieving customers' satisfactions [29].

5.9 Interactivity

Communication with citizens and providing the required assistance is significant to give confidence to citizens to use the e-service [60]. Interactivity can keep the citizens all the time on touch and advise them to do further action [39].

5.10 Responsiveness

The government should provide prompt and helpful service to citizens via communication channels when they have questions or face problems. This makes citizens more comfortable during practicing e-government services [43]. Several researches have revealed a significant relation between responsiveness and citizens satisfactions [50].

6 CONCLUSION

E-government presents a new opportunity to improve government efficiency and effectiveness. It can create substantial benefits for citizens and other stakeholders. Although, the e-governments programs face many barriers such as legal, technical, organizational, political instabilities and others, many countries diligently embark e-government projects. Most studies indicated that e-government success or failure depends on the e-service quality. Therefore, governments need to measure the quality of their service for more control and enhancements. However, measuring service quality is difficult because it depends on citizens' perception, which led to develop different scales to measure e-government service quality based on various fields of study. This paper aims to describe its own e-service quality dimensions based on literature. These dimensions can constitute a scale for measuring e-government services.

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