


# Theoretical Approach for Instrument Development in Measuring User-Perceived E-Government Service Quality: A Case of Oman E-Government Services

Taisira Al Balushi, Sultan Qaboos University, Oman

Saqib Ali, Sultan Qaboos University, Oman

 <https://orcid.org/0000-0001-7905-7306>

## ABSTRACT

The quality of e-government services plays a vital role in the effective interaction of users/citizens with e-government portals, and it also improves governments' efficiency and responsiveness as per users' expectations. The objective of this study is to develop an instrument to measure perceived e-government service quality by applying a three-steps approach for models validation; conceptualization, design, and normalization; it was validated with Oman e-government service users. In this article, eight main quality dimensions were studied and validated (personalization, usability, performance, web design, security, citizen involvement, satisfaction, and loyalty). The reported results emphasized the varying importance of all eight quality instruments, in addition to the higher impact of web design and security on e-government services in the context of the Oman e-government.

## KEYWORDS

Citizen Involvement, E-Government Quality, Electronic Government, Oman, Quality of E-Services, Service Quality, SERVQUAL

## INTRODUCTION

Prior to the adoption of technology in the services sector, the performance measurement of the services sector was solely based on the individual's effort. Initially, the motive behind an adoption of information communication technology was to enhance the technical capacity of the service sector, but the advancement in technology and utilization of technical resources in the realm of e-services allowed governments to provide pleasant and satisfactory facilities to citizens. The past developments in the domain of e-service quality show that researchers were concerned with finding flaws in the design and technical aspects of services, but the innovation and advancement in this domain pushes them to investigate the psychometric behavior of users towards the satisfaction of facilities provided through the e-government portals.

Though in earlier stages the quantification of perceived e-service quality wasn't considered by researchers, the prime challenges of a growing world led them to provide the necessary arrangements for the evaluation of e-services. Therefore, different studies (Al-Obthani & Ameen, 2018; Chen, Tsai, & Hsu, 2013; Loiacono, Chen, & Goodhue, 2002; Manoharan, 2013; Parasuraman, Zeithaml, & Berry, 1985; Stiakakis & Georgiadis, 2009; Ziemba, Papaj, & Descours, 2014) presented models

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and measurement instruments for the evaluation of e-service quality domains with the aim to quantify e-service quality.

However, the significance of available literature cannot be undermined, as it comprises several comprehensive thoughts. The worthy literature in the domain of service quality identifies the importance of the quantification of service quality and studies different aspects of e-service. The diversity of literature and the impact of the identified provisions cannot be challenged. Thus, the availability and success of the available literature makes us believe that the available information will provide a strong platform for the establishment of measuring instruments for the evaluation of e-government service quality. The provisions of this study will not only quantify the existing service provided by the government to end users, but also will encourage establishments to realize the needs of citizens.

The objective of this study is to develop an instrument to measure perceived e-government service quality. This instrument would be valuable to both researchers and practitioners interested in the domain of e-government portal development, to help them focus on those key quality dimensions that will impact users' perception and motivation while using a government's portal. To achieve this purpose, the authors adopted a thorough process based on widespread approaches for instrument development and validation in Information Systems research (Aladwani, 2002; Henri & Jon, 1994; Straub, 1989) for the better development, refinement, and later evaluation of the proposed instruments in the context of the Oman e-government portal. These approaches take the following three steps for the construction and validation of instruments.

### **Conceptualization**

This involves restricting the domain of the construct and generating sample items representing the concept under consideration. In the context of this study and for the purpose of conceptualization, an extensive background study of previous research has been conducted (Sections 2.0 and 3.0).

### **Design**

This is a phase in which the initial construct and scale is designed, which will be followed by validation and reliability testing. In this study, a two-stage data collection and refinement procedure was followed. The first stage of data collection was for the design phase, and the second was for normalization. The study linked itself with the production of the theoretical development of the instruments and their initial validation through a questionnaire (first sample), carrying eight identified dimensions, accompanied by 64 low-level attributes, to evaluate the psychometric relationship of citizens with the services offered by the e-government portal and websites (Section 4.0).

### **Normalization**

The normalization step verifies and validates the instruments/dimensions using a questionnaire (second sample) that measures e-government service quality from a user's perspective through various statistical analyses which will be utilized throughout in this article. The developed instruments were again tested on another independent data set (Section 5.0). Sections 6.0 and 7.0 discuss the findings, implications, and limitations of the study.

## **BACKGROUND**

While there is a breadth of research in the e-government adoption theories in various domain/perspectives and key constructs (Rana, Williams, Dwivedi, & Williams, 2011, 2012), the concept of service quality in the e-service quality domain has grasped a bulk of the attention in recent years. Subsequently, a large range of studies has been conducted to identify the dimensions of e-service quality (Al-Balushi & Ali, 2012; AlBalushi & Ali, 2015a, 2015b; Ali, Balushi, & Al-Badi, 2013;

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