A Framework on the Determinants of e-government Services Quality in UAE

(Research in progress)

Mohamed Alahmed

DBA Student

College of Business and Economics,

UAEU-Al Ain

UAE

Dr. Ananth Chiravuri

Assistant Professor-MIS

College of Business and Economics,

UAEU-Al Ain

UAE

Abstract

The rapid and increasingly universal acceptance of online transactions has resulted in governments providing an increasingly wide range of online services to the general public. The successful experience of launching e-government portals and services, including transactional ones, in the industrialised countries has led to the United Arab Emirates (UAE) to adopt similar such models for a wide array of public service entities. Although there is now a considerable literature on the various aspects of the efficiency, effectiveness and customer satisfaction with regard to e-government services, the majority of the associated analytical frameworks and models were not designed within the sociocultural context of the Arabian Gulf and its business environment. The purpose of this study is therefore to identify and present a framework on the quality determinants of the e-services which are currently provided by the UAE's Ministry of Interior (MOI) to the public. As these services are already in place, it will focus in particular on a theoretical model and the mechanisms by which these services can be adapted and enhanced.

1. Introduction

The notion of e-government encompasses a wide range of activities and actors, yet generally speaking it can be divided into three components: government-to-government (G2G); government-to-business (G2B) and, government-to-citizen (G2C). As was pointed out by Seifert (2003), while the internet is a precursor, one factor driving G2C services especially transactional ones is the increased time pressures faced by the general public. As a result, G2C initiatives are also driven by "an interest in "better government" through improved efficiency and more reliable outcomes" Seifert (2003, p. 8).

Presently, most of the studies related to e-government services are concerned with and directly related to a specific state or government. For instance, Grimsley and Meehan (2007) have based their model on the United Kingdom; that of Lim, Tan, Cyr, Pan, and Xiao (2012) focuses on Singapore and, Verdegem and Verleye (2009) have based their model on the e-government services offered in the Flemish speaking areas of Belgium and Holland. While these studies are valid in terms of geographical and socio-cultural contexts, they do not necessarily constitute a model that is applicable to the Arabian Gulf region. Therefore, the present research study will amend the e-government model to the context of the UAE and will create an imitable methodology for gathering knowledge in this area of research.

In essence, this study aims to develop a framework on the determinants of the quality of e-government services provided to the public via the Internet by the UAE Ministry of Interior. This will be tested later, the findings of which are expected to be of interest to academics and industry practitioners in the areas of e-business, e-commerce, and e-government in the UAE. The key reason for why this research study has elected to focus on e-services (that is those accessed via a browser) as opposed to m-services (that is G2C mobile

applications) is because for the foreseeable future at least, a considerable fraction of UAE nationals and residents will continue to interact and carry out transactions with the Government by way of a web browser of some description.

The remainder of the paper is as follows: Section 2 will focus on the literature review followed by the research model in Section 3. We will discuss the methodology in Section 4 and conclude with the contribution of the study.

2. Literature Review

In general, academic discourse on e-service quality has "tended to lag that of the practitioner world" (p. 453). In a more recent and comprehensive review of e-government and (public sector) e-service provision, Kohlborn (2014) argues that research on quality assessment for public sector e-service IS models are still relatively few. Moreover, to date, although Kohlborn (2014) does identify a number of works and emerging models that focus on e-service quality, these instruments for the public sector are rather diverse compared to models for the private sector. It is clear also that a great many of the academic research to date is of a conceptual as opposed to empirical nature (see in particular: Kohlborn, 2014, p. 25). With this as the context, we present some key findings next.

2.1 e-Service Quality

E-service quality has attracted the attention of many scholars who have researched different aspects of the subject (Loiacono, 2000; Parasuraman, Zeithaml, & Malhotra, 2005; Wolfinbarger & Gilly, 2003; Yoo & Donthu, 2001; Zeithaml, Parasuraman, & Malhotra, 2000). However since e-service quality emerged from service quality, we discuss it first.

According to Santos (2006), early conceptualizations of service quality were based on the Oliver's (1980) disconfirmation model and was understood to be a measure of how well

the service level delivered matched customer expectations. For example, Parasuraman et al. (1985, p. 42) defined service quality as being "the overall evaluation of a specific service firm that results from comparing that firm's performance with the customer's general expectations of how firms in that industry should perform" (p. 15). This lead to the development of their multi-dimensional service quality assessment tool known as SERVQUAL. However, customer assessment of the quality of traditionally delivered services is different to that of electronic services (e-services) due to the variation in the role of expectations and the number and type of dimensions of the two different types of service (Zeithaml, Parasuraman, & Malhotra, 2002). While traditional service quality has received a lot of researcher attention in the past 20 years (see e.g., Parasuraman et al., 2005; Zeithaml et al., 2002), assessment factors such as competence, cleanliness, courtesy, comfort etc., are not suitable measurements of a digital environment where factors like communication, security, credibility, accessibility, aesthetics, and availability are significant (Cox & Dale, 2001). Hence, it is fair to conclude that existing quality measurements in traditional services will not be capable of measuring the quality of e-services, as pointed out by Fassnacht and Koese (2006).

E-services or electronic services have been defined as services delivered to customers via Information and Communication Technologies (ICT) using an appropriate user interface (example: website) (Fassnacht and Koese (2006). And, e-service quality has been defined by Santos (2006) as the consumers' overall evaluation and judgment of the excellence and quality of e-service offerings in the virtual marketplace. Since the aim of this study is to focus on quality of e-services in the government/public sector, we discuss it next.

2.1.1 E-Service Quality in the Public Sector (e-Government)

Researchers have categorized e-government into six areas: (1) government services to individuals, (2) government services to individuals as a part of the political process, (3)

government services to businesses as citizens, (4) government services to businesses in the marketplace, (5) government services to employees, and (6) government to government services (Belanger & Hiller, 2006). The focus of the present research will be on government services to individuals/citizens (G2C) and government services to businesses (G2B), which has been suggested by Tan, Benbasat, and Cenfetelli (2013) for future research. Since the objective of our study is to develop a framework in the context of the UAE, we will discuss relevant studies next.

Carter and Bélanger (2005) integrated elements from previously used models such as the Technology Acceptance Model (TAM) (see e.g., Gefen, Karahanna, & Straub, 2003; Gefen & Straub, 2000; Moon & Kim, 2001; Pavlou, 2003), the web trust model (Belanger, Hiller, & Smith, 2002), and the diffusion of innovation (Van Slyke, Bélanger, & Comunale, 2004) to create a more targeted model of e-government adoption. These models included dimensions such as: “perceived usefulness,” “ease of use,” and “trustworthiness” of the Internet and/or government, etc. Their study also concluded that citizens’ intention to use e-government services would increase if a service was perceived to be easier to use. Increased trustworthiness was also found to be important in terms of trusting the government as well as the Internet/e-services in general. In fact, it was also noted that if a citizen was comfortable using e-services in general then they were more likely to use an e-service provided by government/public entities. Moreover, citizens are faced with technologically driven inhibiting factors due to the greater transactional risks posed by e-services in terms of personal data storage (Grimsley & Meehan, 2007). Thus, the study by Lim et al. (2012) cited that e-government systems suffer from a decreasing level of trust among citizens as users. Although the paper by Lim et al. (2012) focused solely on Singaporean e-government services, the same theory could be applied to other states, as most government agencies provide the same nature of services to their citizens. Lim et al. (2012) construed a

multidimensional integrated framework that specifically identified trust-building strategies. By applying this analytical framework to Singapore's electronic tax-filing system, the study integrated different strategies of trust building, including calculative-based, prediction-based, intentionality-based, capability-based, and transference-based trust (Lim et al., 2012).

Additionally, across different studies, there has been a pattern in terms of the items tested to identify a well-rounded measurement of e-service quality. These items can be categorized in relation to: "functionality of use" (ease of use and system availability), "procedure" (security, credibility, interactivity and processing time), content ("format," "information" and "personalization") and, "user support" (responsiveness and contact).

More recently, a fresh new stream of research has emerged that examines e-government from a service perspective (Tan et al., 2013); Tan and Benbasat (2009); Tan et al. (2013), differentiated between two main antecedents to users' satisfaction with IT-mediated e-government service quality: the services being offered (termed: "service content") and how these services are being delivered (termed: "service delivery"). The relevant sub-dimensions of service content were adopted from the Customer Service Life Cycle (CSLC) model (see e.g., Cenfetelli, Benbasat, & Al-Natour, 2008; Tan & Benbasat, 2009; Tan et al., 2013) which we propose will be the framework used by this study to generate the relevant dimensions of service content. Tan et al. (2013) used the CSLC framework and were able to identify dimensions that are applicable to e-government service content. For instance, establishing requirements still applies, but it now refers to whether a e-government website offers tools that help users learn what is needed for a transaction and how it is done (for example what needs to be done to apply for a residency visa).

Relatedly, six dimensions namely, accessibility, navigability, interactively, interoperability, adaptability, and security were used to explain the sub-dimension of service delivery, which is concerned with how these services are delivered (Tan & Benbasat, 2009;

Tan et al., 2013), Similarly, this study will use the CSLC model to generate relevant dimensions that are applicable to the services offered by the MOI (for both services that involve payments and those that do not as well as whether these services are mandatory or voluntary, as this was not covered by (Tan et al., 2013).

3. Research Model

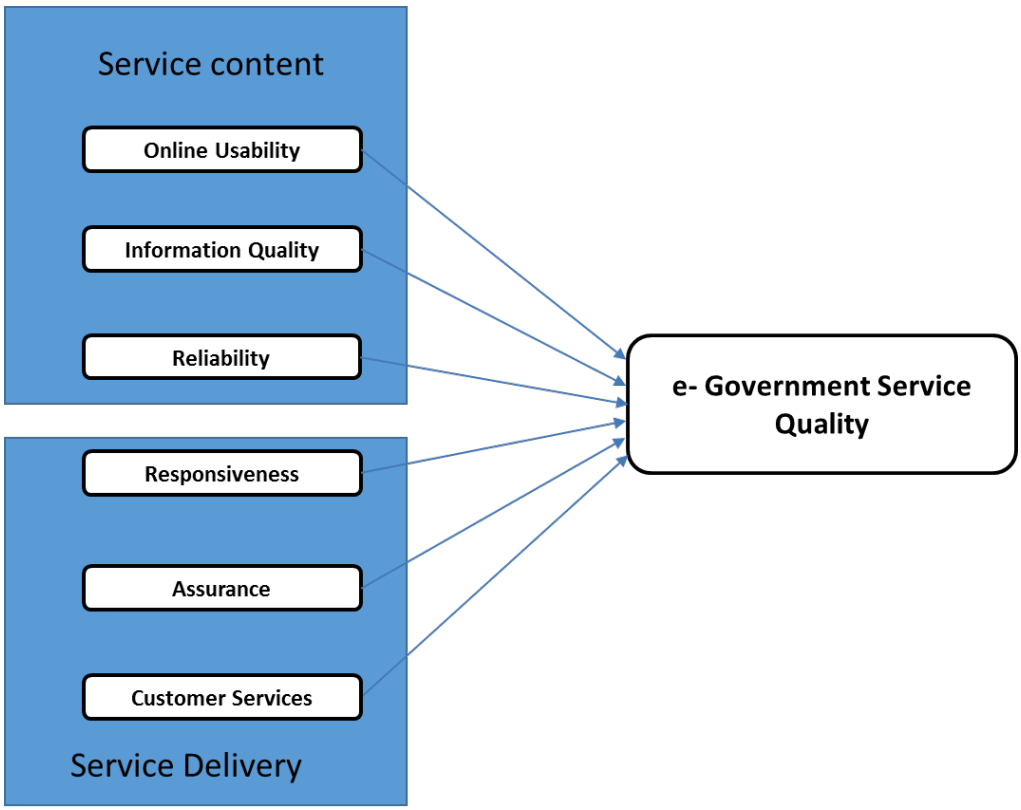
In the past, a variety of service quality measuring tools, models, and dimensions have been established to measure the perception of a user's e-service quality. To begin with, Parasuraman et al. (1985) identified ten dimensions of service quality: reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding, and tangibles. These were later condensed into the following five dimensions; reliability, tangibles, responsiveness, assurance, and empathy, which, according to the literature, constitute the global measure for service quality. Similarly, a study of quality by Zeithaml et al. (2002) stated that e-service quality is complex and has the following dimensions: fulfillment, privacy/security, and efficiency/ease of navigation. The above dimensions were synthesized by Santos (2006) who then proposed to measure e-service quality in terms of two dimensions: incubative and active. Incubative dimension defined as proper design of a website included the following: ease of use, appearance, linkage, structure and layout, and content. Active dimension defined as the good support, fast speed, and attentive maintenance that a web site can provide to its customers include reliability, efficiency, support, communications, security, and incentives.

However, the dimensions that have been used for measuring e-service quality are largely dependent on the type of service offered, whether public or private. Since the objective of this study is on developing a framework for measuring e-service quality in the public sector, we will focus on the public sector. Currently, there are over 300 services

offered by the ministry's e-government, the majority of which are only for the citizens of the UAE. This research study will thus focus on the services offered online in terms of the transactions of payments involved, such as traffic fines, which are commonly used by the entire population, citizens and non-citizens alike.

The conceptual framework of the research shown below will be adapted as per the dimensions and determinants of the e-government service quality in the context of the UAE.

Figure 1. **Theoretical/conceptual framework.**



Based on the review of the literature and examination of different existing models and service quality measurements, the objectives of this research intend to address the research question "Do the determinants of service content and service delivery have an influence on the e-government service quality of the Ministry of Interior in regard to the public's intention

to continue using these e-services in the UAE?" by testing the hypotheses, each of which is set out and contextualised as follows.

Relating to Service Content Quality

H1 Online Usability will positively influence the quality of e-services delivered by the MOI.

H2 Information Quality will positively influence the quality of e-services delivered by the MOI.

H3 Reliability will positively influence the quality of e-services delivered by the MOI.

Relating to Service Delivery Quality

H4 Responsiveness will positively influence the quality of e-services delivered by the MOI.

H5 Assurance will positively influence the quality of e-services delivered by the MOI.

H6 Customer services will positively influence the quality of e-services delivered by the MOI.

4. Methodology

A content analysis of the services that the MOI offers will be conducted using the CSLC model and dimensions as guidelines along with the UAE government e-services quality criteria 2014 (Government of Abu Dhabi, 2014). For instance, the CSLC dimensions will be taken, one by one, in order, to categorize and rank the different services the MOI offers and generate the relevant items/sub-dimensions (e.g., the MOI website allows users to complete multiple transactions, such as multiple residency applications, at the same time). Then, this relevant list of items will be generated and clustered into higher-level dimensions, which will be the dimensions for service content.

The research will use a quantitative method and the sources of primary data for this research will be dependent on and collected through survey (questionnaire) which will include specific demographic information about the public including age and education. Moreover, this method of collecting data is the only way to find out the public perception of e-government service quality.

With the intention of clarifying the characteristics of e-service quality influencing public perception, a secure web-based survey (questionnaire) will be developed using five-points Likert scales (a translation of surveys may be done as needed). Then, the survey will be sent via e-mail to those who are currently using the online services of the MOI (that is the e-mail will be sent to registered users of the MOI e-services portal (website).

The sample strategy will depend on the research population. In this case, participants of the research population will be invited by sending e-mails or messages through social media such as Facebook, Twitter, and Instagram. In the message, the researcher will give a small description of the purpose of the survey such as: “The purpose of this research is to identify determinants of e-government service quality in the case of the Ministry of Interior in the UAE. Could you please participate by clicking the link below?” (The link will direct the participants to the web-based questionnaire.) Moreover, a pop-up questionnaire will be generated for those users who have used the online services more than once. Finally, the data collection, reliability testing of all responses, and analysis of all findings will be done using analytical software tools.

5. Contribution and Limitations

This study will be the one of the few studies to examine e-government service quality in the UAE and it is expected that this study will make an important contribution to the body of knowledge about e-services and will help the MOI—as well as other departments (governmental or semi-governmental bodies) that offer similar services—to become more conscious of the public perception of the quality of such services and to use it as catalyst for continual improvement. Since the survey uses self-administered surveys, reliability might be an issue. We aim to address this with a large sample.

References

Belanger, France, & Hiller, Janine S. (2006). A framework for e-government: privacy implications. *Business process management journal, 12*(1), 48-60.

Belanger, France, Hiller, Janine S, & Smith, Wanda J. (2002). Trustworthiness in electronic commerce: the role of privacy, security, and site attributes. *The Journal of Strategic Information Systems, 11*(3), 245-270.

Buckley, Joan. (2003). E‐service quality and the public sector. *Managing Service Quality: An International Journal, 13*(6), 453-462. doi: doi:10.1108/09604520310506513

Carter, Lemuria, & Bélanger, France. (2005). The utilization of e‐government services: citizen trust, innovation and acceptance factors*. *Information Systems Journal, 15*(1), 5-25.

Cenfetelli, Ronald T, Benbasat, Izak, & Al-Natour, Sameh. (2008). Addressing the what and how of online services: Positioning supporting-services functionality and service quality for business-to-consumer success. *Information Systems Research, 19*(2), 161-181.

Cox, Jennifer, & Dale, Barrie G. (2001). Service quality and e-commerce: an exploratory analysis. *Managing service quality, 11*(2), 121-131.

Fassnacht, Martin, & Koese, Ibrahim. (2006). Quality of electronic services conceptualizing and testing a hierarchical model. *Journal of service research, 9*(1), 19-37.

Gefen, David, Karahanna, Elena, & Straub, Detmar W. (2003). Trust and TAM in online shopping: an integrated model. *MIS quarterly, 27*(1), 51-90.

Gefen, David, & Straub, Detmar W. (2000). The relative importance of perceived ease of use in IS adoption: a study of e-commerce adoption. *Journal of the Association for Information Systems, 1*(1), 8.

Government of Abu Dhabi. (2014). *UAE government e-services quality criteria 2014*. Retrieved from http://government.ae/en/web/guest/guidelines.

Grimsley, Mike, & Meehan, Anthony. (2007). e-Government information systems: Evaluation-led design for public value and client trust. *European Journal of Information Systems, 16*(2), 134-148.

Kohlborn, Thomas. (2014). Quality assessment of service bundles for governmental one-stop portals: A literature review. *Government Information Quarterly, 31*(2), 221-228. doi: http://dx.doi.org/10.1016/j.giq.2013.10.006

Lim, Eric, Tan, CheeWee, Cyr, Dianne, Pan, Shan, & Xiao, Bo. (2012). Advancing public trust relationships in electronic government: the Singapore e-filing journey. *Information Systems Research, 23*(4), 1110-1130.

Loiacono, Eleanor Terese. (2000). *Webqual (tm): a web site quality instrument*: University of Georgia.

Moon, Ji-Won, & Kim, Young-Gul. (2001). Extending the TAM for a World-Wide-Web context. *Information & Management, 38*(4), 217-230.

Parasuraman, Ananthanarayanan, Zeithaml, Valarie, & Malhotra, Arvind. (2005). ES-QUAL a multiple-item scale for assessing electronic service quality. *Journal of service research, 7*(3), 213-233.

Parasuraman, Anantharanthan, Zeithaml, Valarie, & Berry, Leonard. (1985). A conceptual model of service quality and its implications for future research. *the Journal of Marketing*, 41-50.

Pavlou, Paul A. (2003). Consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model. *International journal of electronic commerce, 7*(3), 101-134.

Seifert, Jeffrey. (2003). *A Primer on E-Government: Sectors, Stages, Opportunities, and Challenges of Online Governance*. Washington D.C.: Report for Congress (RL31057).

Tan, CheeWee, & Benbasat, Izak. (2009). IT mediated customer services in e-government: A citizen's perspective. *Communications of the Association for Information Systems, 24*(1), 12.

Tan, CheeWee, Benbasat, Izak, & Cenfetelli, Ronald. (2013). IT-mediated customer service content and delivery in electronic governments: An empirical investigation of the antecedents of service quality. *MIS Quarterly, 37*(1), 77-109.

Van Slyke, C, Bélanger, F, & Comunale, C. (2004). Adopting business-to-consumer electronic commerce: the effects of trust and perceived innovation characteristics. *The Data Base for Advances in Information Systems, 35*(2), 32-49.

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

Wolfinbarger, Mary, & Gilly, Mary C. (2003). eTailQ: dimensionalizing, measuring and predicting etail quality. *Journal of retailing, 79*(3), 183-198.

Yoo, Boonghee, & Donthu, Naveen. (2001). Developing a scale to measure the perceived quality of an Internet shopping site (SITEQUAL). *Quarterly Journal of Electronic Commerce, 2*(1), 31-45.

Zeithaml, Valarie, Parasuraman, Ananthanarayanan, & Malhotra, Arvind. (2000). E-service quality: definition, dimensions and conceptual model. *Marketing Science Institute, Cambridge, MA, working paper*.

Zeithaml, Valarie, Parasuraman, Ananthanarayanan, & Malhotra, Arvind. (2002). Service quality delivery through web sites: a critical review of extant knowledge. *Journal of the academy of marketing science, 30*(4), 362-375.