



Measuring user satisfaction from e-Government services: Lessons from Jordan

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ABSTRACT

User satisfaction is a crucial factor for continual usage of e-Government services and for the success or failure of e-Government projects. The main challenge for Jordanians is what are the key determinants of their satisfaction? This paper aims to identify the key factors that determine Jordanians' e-Satisfaction with Jordan's e-Government services portal. Based on an extensive review of relevant literature, five hypotheses are formulated and five factors are identified (i.e., security and privacy, trust, accessibility, awareness of public services, and quality of public services) that may affect the Jordanians' level of satisfaction towards using the Jordan e-Government portal (www.jordan.gov.jo). Survey data from 400 employees in four universities in the northern region of Jordan were collected and used to test the proposed hypotheses. Based on multiple linear regression and factor analyses, our empirical analysis demonstrates several key findings. These findings indicate the usefulness and importance to unveil the key drivers of e-Satisfaction so as to provide feedback in a set of recommendations that will enable creating e-Government portals which are compatible with citizens' needs, desires, and expectations. They also provide insights for both practitioners and governmental policy-makers to enhance e-Government portals via accounting diverse factors of technical, behavioral, managerial, and motivational aspects. Finally, implications and recommendations of these findings were discussed.

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1. Introduction

Information and communication technology (ICT) has radically transformed the way individuals, organizations, and governments used to work. The internet in today's information societies has become an essential channel that is used for dissemination of information, products, and services. People prefer to use the internet as a transaction tool in different areas, such as, learning, shopping, marketing, travel, trading, etc. Carter and Belanger (2003) emphasized the use of ICT to improve efficiency and access to government services across all stakeholders in G2C, G2E, G2G and G2B services. Moreover, governments have realized the importance of the internet and have undertaken critical transformations to use it to deliver public services, so that citizens can always access them regardless of their location (Abdulkarim, 2003).

Fang (2002) has described e-Government as a method for governments to use the most innovative ICT services, particularly web-based internet applications. These applications are able to provide citizens and businesses with more convenient access to government information and services, to improve the quality of services and provide more

opportunities for democratic institutions and processes. e-Government involves many issues such as trust, security, privacy, accessibility, familiarity, awareness, and quality of public services (Jaeger, 2003). Since the year 2000 special attention has been given to an e-Government project by the Jordan government that has yielded a huge change in the last ten years.

The rapid growth of e-Government initiatives in the MENA (Middle East and North Africa) region reflects its compelling advantages, such as enhanced governmental performance, lower cost structure, greater flexibility, broader scale and scope of services, greater transparency, accountability, and faster transactions. However, getting people to be continually engaged in e-Government services is a challenge since only with a few mouse clicks they will be moved away. Currently, an agreement seems to enhance better customer service and its consequent effect on e-Satisfaction and reuse. Especially, e-Satisfaction is not the only primary driver of online customers' continuous behavior, but also the key to building and retaining a loyal base of long-term customers.

Many institutions, such as the World Bank, the United Nations, Europe's Information Society DG, the Canadian Common Measurement Tool (CMT) of satisfaction, the European Customer Satisfaction Index and the American Customer Satisfaction Index, evaluate e-Government progress and satisfaction using various methods and indices (Fitsilis, Anthopoulos, & Gerogiannis, 2010).

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The research problem is that the online user's satisfaction is a multi-dimensional construct combining technical, behavioral and marketing determinants. Our study intends to measure the most influential determinants on the Jordanian citizens' satisfaction from the e-Government services provided by the Jordan e-Government portal. These determinants are security and privacy, trust, accessibility, awareness of public services and quality of public services. These factors are adapted from the constructs of the Canadian Common Measurement Tool (CMT), the American Customer Satisfaction Index (ACSI), the European Customer Satisfaction Index (ECSI), and the original Swedish Customer Satisfaction Barometer model (SCSB). Furthermore, these determinants were the focus of studies by Batini, Viscusi and Cherubini (2009), Eid (2011), European Commission Information Society and Medical Directorate, Kang and Lee (2010), Lee, Choi and Kang (2009), Lee and Chung (2009), Schaupp and Carter (2005), Tung and Rieck (2005), Verdegem and Verleye (2009), Welch, Hinnant and Moon (2005), Yang, Wu and Wang (2009), Yoon (2010), and Zavareh et al. (2012) concerning the measurement of user satisfaction and impact of e-Government services in the Member States).

The current study has focused on the abovementioned five potential determinants of e-Satisfaction because they combine the behavioral, technical and economical aspects that affect acceptance, usage and users' feelings after use of any technological innovation. Traditionally, user satisfaction has been studied and measured indirectly through technical aspects of systems such as information quality, system quality and service quality. Furthermore, user satisfaction has been studied through some theoretical constructs of information systems adoption and diffusion theories such as DOI, TAM, TRA and TPB. Finally, user satisfaction has been studied based on the productive and economical measures through service quality models such as SERVQUAL and WEBQUAL. The five determinants in this study combine security, privacy and accessibility as technical constructs; trust and awareness of e-Government public services as behavioral constructs; and finally quality of e-Government public services as productive and economical constructs. Hence, the five potential determinants of e-Satisfaction are presented through developing the e-Government portal in Jordan. In our analysis each of the identified determinants of e-Satisfaction commands different attention.

Numerous studies have empirically examined consumer satisfaction from B2C e-commerce services and applications (e-Banking services, e-Ticketing, online stocks trading, e-Employment services, e-Tailing applications, e-Auctions ...etc.) in various countries (Cyr, 2008; Flavia'n & Guinaly, 2006; Kim, Donald, & Raghav Rao, 2009). So far, there is a paucity of substantial empirical studies that examine users' satisfaction from B2C e-business services and applications (e-Government, e-Learning, e-Health ...etc.) in a developing country such as Jordan, since the majority of studies reported in the literature still rely heavily on e-commerce services in developed countries. Furthermore, there is a lack of empirical evidence to measure e-Satisfaction and its impact on success or failure of e-commerce and e-business applications, partly because of the difficulty of developing measures and collecting data (Alawneh & Hattab, 2009a, 2009b).

Our empirical study was carried out in Jordan, an interesting and advanced country in the Middle East in terms of overall e-Government service delivery capabilities. Moreover, Jordan has a set of clear ICT and e-Government strategies in place, which are accompanied by a strong commitment of the government leadership to provide better e-Government services to its citizens and businesses—through creating greater public value. Despite the lack of economic resources, Jordan has developed relatively high-level advanced e-Government service delivery capabilities, namely, two-way interaction and e-democracy (Chatfield & Al-Hujran, 2009).

We argue that the main contribution of this study namely measuring the most influential factors on users' satisfaction will assist Jordanian e-Government planners, practitioners, developers and policy-makers in focusing their efforts on key satisfaction determinants in the Jordanian

national e-Government portal. This will in turn contribute mostly to increasing citizens' acceptance and creating positive feelings after e-Government use. Thus, the results of this study would be beneficial to various countries providing e-Government services in the MENA region due to the similarity in ICT competency, culture and political structures.

The rest of the paper is organized as follows: Section 2 gives a brief case study description about e-Government in Jordan; Section 3 is a review of the key determinants of satisfaction as found in the literature—particular attention is paid to the five determinants which are used in the current study, this section concludes with hypothesized relationships between e-satisfaction level and its determinants; in Section 4, an overview of previous and related works which provides the foundation for the current study is given. This is followed by the research methodology, data analysis, hypotheses testing, and results. The paper concludes with discussing the key findings and their conclusions, suggesting future research directions and practical and theoretical recommendations.

2. e-Government in Jordan

Jordan is a developing country in the Middle East with a population of about 6,000,000 and limited natural resources. It is one of the regionally leading countries regarding national IT infrastructure available for online services. Also, the population's motivation and ability to conduct online transactions are regionally one of the highest (Alawneh & Hattab, 2008).

The e-Government project in Jordan is distinguished from other Arabian experiments as it is integrated at the national level over the entire Kingdom which is responsible to form a national team working for the e-Government to offer it in the government's institutions (Abu shanab, Abu Al-Rubb, & Md Norc, 2010).

Table 1 summarizes the Jordan e-Government strategy.

3. Determinants of e-Satisfaction

The Expectation–Confirmation Theory (ECT) was proposed by Oliver (1980) to study consumer satisfaction and re-purchase behavior. The ECT theory states that consumers firstly form an initial expectation prior to purchase, and then build perceptions about the performance of the consumed product/service after a period of initial consumption. Next, consumers will decide on their level of satisfaction based on the extent to which their expectation is confirmed through comparing the actual performance of the product/service against their initial expectation of the performance. Consequently, satisfied consumers will form re-purchasing intentions.

Satisfaction is closely related to service quality and consist of both a behavioral dimension created by experience, as well as a mental dimension, created by worked up attitudes (Oliver, 1999). On the other hand, dissatisfaction among customers using electronic services might occur because of technological failure, which results in a negative perception of the functional quality of the service. Dissatisfaction might also arise from technology design problems or service design problems. This could include systems being too slow, difficulties for the user to navigate the system or problems in figuring out how to log off the service (Meuter, Ostrom, Roundtree, & Bitner, 2000).

For purposes of this study, e-Satisfaction construct is defined as the Jordanian citizens' feelings about the Jordan national e-Government portal after using government transactions. The five e-Satisfaction determinants together with their definitions and references are summarized in Table 2.

3.1. Security and privacy

Information security continues to be one of the most crucial topics in e-commerce. Businesses and consumers are constantly sending

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