Identification of Success Factors in E-Service Delivery of commercial order registration in the government of Islamic Republic of Iran

Dr. Masoud Pourkiani, Dr. Sanjar Salajeghe, Mehdi Bagheri
Department of management, Kerman branch, Islamic Azad University
Kerman, Iran, University
Iran
pourkaini@yahoo.com

Abstract: - The successful adoption of new technologies helps governments achieve efficiency in their implementation and delivery of public services to citizens. The objective behind various e-government initiatives has shifted in recent years towards establishing services that cater more to citizens’ needs and offer greater accessibility. As a result, it is necessary to develop a well-founded theoretical framework to measure the success of such initiatives. The purpose of this thesis is to identify the success factors behind governmental e-service delivery from a citizen viewpoint. This research identifies and discusses three theoretical perspectives in approaching the research problem: IS and e-commerce success, success variables, and e-government success evaluation. A theoretical framework was developed to evaluate e-service delivery success. With study several disciplines (IS, e-commerce, and marketing), were made to develop a proposed success model for government e-services. Citizen satisfaction was proposed as a measure of e-government success, and its relationships were hypothesized with e-government system quality, information quality, e-service quality, perceived usefulness, perceived ease of use, and citizen trust. To test the proposed model, government e-order registration services in Iran was chosen as the application area, and a quantitative approach was deemed better suited to test the developed research model empirically. Correlation analysis was chosen as the statistical analysis techniques. The analytical results confirm most of the proposed relationships within the model.

Key-Words: - Success variables, E-government, E-Service Delivery

1 Introduction
Advances in Internet and communication technology have served as the foundation for the growth of e-commerce and e-business applications [2]. Development in the commercial sector has also created pressure upon the public sector to keep up [3]. Government entities are finding it necessary to modernize their administrative processes in order to facilitate interaction with citizens by using for measuring e-government success a well-founded theory is important, which can help governments to improve their services and identify how effectively public money is spent. Worldwide, public administrations invest an enormous amount of resources in e-government initiatives, but it is not often clear that how success of e-government is measured [16]. Since it is difficult to measure system success directly, many researchers have used indirect measures such as satisfaction [18]. The purpose of this thesis is to identify the success factors behind governmental e-service delivery from a citizen viewpoint. This research identifies and discusses three theoretical perspectives in approaching the research problem: IS and e-commerce success, success variables, and e-government success evaluation. A theoretical framework was developed to evaluate e-service delivery success. Initially, DeLone and McLean’s IS success model was used as the base model for this research. Additional variables were incorporated into the model from several disciplines (IS, e-commerce, and marketing), and re-specifications and extensions were made to develop a proposed success model for government e-services. Citizen satisfaction was proposed as a measure of e-government success, and its relationships were
hypothesized with e-government system quality, information quality, e-service quality, perceived usefulness, perceived ease of use, and citizen trust. Fourteen hypotheses were formulated to test the proposed research model. To test the proposed model, government e-registration services in Iran was chosen as the application area, and a quantitative approach was deemed better suited to test the developed research model empirically.

2-Literature review

2-1- Theoretical perspective of IS and E-commerce success

Success has been widely studied in information system research [6, 4, 17] and e-commerce research [7, 15]. Based on the research work in communication by Shannon and Weaver and the information “influence theory” and empirical MIS research studies from 1981-1987 by Mason, DeLone & McLean proposed an IS Success model that incorporates several individual dimensions of success [6]. The model introduced six major variables of information system success: System Quality, Information Quality, Information System Use, User satisfaction, Individual Impact, and Organizational Impact. System Quality and Information Quality singularly and jointly affect both Use and User satisfaction. DeLone and McLean have updated their original success model and explained how the updated DeLone & McLean information system success model can be adapted to the measurement challenges of the new e-commerce world [7]. Molla & Licker proposed an e-commerce success model based on the DeLone & McLean IS Success model. In their paper, they proposed a partial extension and re-specification of the DeLone & McLean IS Success model to an e-commerce system [15]. They defined e-commerce success as a dependent variable and described its relationship with e-commerce system quality, content quality, use, trust and support services. They replaced e-commerce system quality and content quality rather than the system and information quality component.

2-2- success variables

Information quality and system quality as a success measure

Information quality and system quality are significant determinants of user satisfaction [1, 6, 7]. According to the IS Success Model, system quality is concerned with the measurement of the actual system, which produces the output [6]. “System Quality” in the Internet environment, measures the desired characteristics of an e-commerce system [7]. According to McKinney, Yoon and Zahedi [14], Web site information and system quality are the key constructs of Web customer satisfaction. They defined system quality relative to site success as the customers’ perception of a Web site’s performance in information retrieval and delivery. Web customers’ perception of the quality of information presented on a Web site is defined as Web information quality. Information quality is concerned with the measure of the system’s output [7]. Seddon re-specified DeLone & McLean’s IS success model, and explained that information quality and system quality have an impact on perceived usefulness and user satisfaction [18].

E-Service quality as a success measure

Service quality has been the subject of considerable interest by both practitioners and researchers in recent years. Service quality is determined by the differences between customer’s expectations of services, provider’s performance, and their evaluation of the services they received [22]. Along with the system and information quality, service quality is considered as an important success measure [19]. Zeithaml et al. developed e-SERVQUAL for measuring e-service quality. Through focus group interviews, they identified seven dimensions of online service quality: efficiency, reliability, fulfillment, privacy, responsiveness, compensation, and contact [22].

Satisfaction as a success measure

User satisfaction is the most common measure of success determination, and researchers have developed and tested several standardized instruments to measure satisfaction [6, 17, 3, 18]. Although several
authors have defined satisfaction, there is no single universally accepted definition. According to Davis, “Satisfaction is the consumer’s fulfillment response. It is a judgment that a product or service feature, or the product or service itself, provided a pleasurable level of consumption-related fulfillment, including levels of under or over fulfillment”. DeLone & McLean defined satisfaction as “Recipient Response to the Use of the Output of an Information System” [6].

Citizen Trust as a success measure

Increased citizen trust in government will increase citizen satisfaction in government e-service delivery [20]. Citizens’ perceived quality of public service delivery increases citizen satisfaction; citizen satisfaction is strongly related to trust in government service delivery. Trust increases the perceived usefulness of the Web site. If users have trust in the Web site, they are ready to pay a higher price for this relationship, which adds to the advantage of the Web site. When a user uses the Web site, it is necessary that the Web site be understandable and easy to use. Perceived ease of use also increases the trust invested in the Web site [9].

Perceived usefulness and perceived ease of use as a success measure

Seddon re-specified and extended the DeLone & McLean IS success model and added perceived usefulness as an important success measure for IS success [18]. They also included perceived usefulness as a determinant of user satisfaction. Davis, also found that perceived usefulness is an important predictor of IS use [5]. According to Lin and Lu, perceived usefulness is directly and positively influenced by information quality [12]. This view agrees with past studies [6, 18], which also found that information quality and usefulness of a system are closely related, and that users will perceive a web site to be of greater usefulness if it provides a higher quality of information.

3-Conceptual framework

Based on the theoretical perspectives, the following conceptual model is proposed, which incorporates concepts from earlier models to be applied to testing in the area of e-government. This model is conceptually based on the DeLone & McLean IS success model (1992). From the discussions concluded so far, it becomes evident that system quality, information quality, and e-service quality affect user satisfaction [6, 7, 15, 18]. From previous studies, we found that perceived usefulness and perceived ease of use have an impact on user satisfaction [1, 17, 18]. System quality, information quality and e-service quality determine perceived usefulness [14], and perceived ease of use relates to perceived usefulness [9]. Perceived
ease of use determines citizen trust, and citizen trust has an impact on perceived usefulness [9, 11]. Citizen trust also increases citizen satisfaction [17]. In this study, e-government success is defined through citizen satisfaction. Citizen satisfaction is proposed to be determined by e-government system quality, information quality and eservice quality, citizen trust, perceived usefulness, and perceived ease of use of the system.

![Proposed model for E-government Success](image)

**Figure 1- Proposed model for E-government Success**

### 4-Hypotheses

H1: System quality in the government Web site has a positive effect on citizen’s satisfaction with the e-order registration service [6, 7, 18].

H2: Information quality in the government Web site has a positive effect on citizens’ satisfaction with the e-order registration service [6, 7, 18].

H3: E-service quality in the government Web site has a positive effect on citizen’s satisfaction with the e-order registration service [7, 15].

H4: Perceived usefulness of the government Web site has a positive effect on satisfaction with the e-order registration service [14, 15].

H5: Perceived ease of use of the government Web site has a positive effect on satisfaction with the e-order registration service [18, 17].

H6: Perceived ease of use of the government website is positively related to Perceived usefulness of the e-order registration service [6, 10].

H7: System quality of the government Web site is positively related to Perceived usefulness of the e-order registration service [3, 18].
H8: Information quality of the government Web site is positively related to Perceived usefulness of the e-order registration service [3, 18].

H9: E-service quality of the government Web site is positively related to perceived usefulness of the e-order registration service [12].

H10: System quality of the government website is positively related to perceived ease of use of the e-order registration service [3, 12].

H11: E-service quality of the government website is positively related to perceived ease of use of e-order registration service [12].

H12: Trust is positively related to Citizen Satisfaction with the e-order registration service [20].

H13: Trust is positively related to perceived usefulness of the e-order registration service [9].

H14: Perceived ease of use is positively related to trust in the government Web site [9].

5- Methodology

To identify the success factors in government e-registration service in Iran, we focused on the government Web site http://www.sabtaresh.tpo.ir, which is primarily a commercial order registration services-related Web site, but also provides other services to the citizens. The target population for the current study can be defined as follows: "Individuals experienced in using the order registration (sabtaresh.top.ir) Web site at time January – March 2010". To achieve further representativeness within the convenience sample, a systematic sampling was then conducted within the chosen frame. The survey was chosen as a suitable strategy for data collection in this project. Since most of the items were adopted from IS and e-commerce research areas at first study was conducted with expert of the e-service to determine the applicability of items in the specific research context. Another aim was to ensure that no important attributes or items were omitted. Once the measurement items were developed, the questionnaire was assessed by thirty experts. A total of seven variables and 53 items were selected from existing literature. After pilot test, questionnaire sends for representative sample all of these items were measured by five-point Likert-type scales with anchors from “strongly disagree” to “strongly agree”. In this research correlation method was used for analyzing hypothesis.

6-Data collection method

It was decided to collect data through usage of a systematic sample survey. And through careful selection of items, it is possible to collect information on users’ preference, behavior, and attitudes, as well as their intentions and expectations relative to certain questions based on the variables. An online survey was administered to the selected sample. To Identification of Success Factors One organized questionnaires had been designed for this research. 2000 email send for user. The survey was left open for two months. During this time, 381 valid responses were

Received. To determined validation, questionnaire was referred to 30 persons of experts and for determine reliability we computed cronbach’s Alpha and 83 percent was computed that showed questionnaires had acceptable reliability.

7- Data Analysis Method

The researchers had been used the appropriate data analysis tools, which is: Descriptive statistics (E.g. mean, standard deviation) and Pearson correlation.
8- Results

The results of analyzing hypotheses summarized in Table 1. Overall there was support for the hypothesized relationships between system quality and E-service quality and citizen satisfaction. There was also support for the proposed relationships between citizen trust and citizen satisfaction. Additionally the results suggested that relationship between the perceived ease of use and citizen trust. Finally there was strong support for the proposed relationship between system quality and perceived ease of use, also relationship between perceived ease of use and perceived usefulness. Although, relationship between information quality and citizen satisfaction, also relationship between Perceived ease of use and citizen satisfaction not supported.

Tab. 1: the results of hypotheses analysis

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Pearson Correlation</th>
<th>Asymp.sig(2-sided)</th>
<th>Empirical support</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>0.525</td>
<td>0.000</td>
<td>supported</td>
</tr>
<tr>
<td>H2</td>
<td>0.223</td>
<td>0.456</td>
<td>Not supported</td>
</tr>
<tr>
<td>H3</td>
<td>0.182</td>
<td>0.000</td>
<td>supported</td>
</tr>
<tr>
<td>H4</td>
<td>0.458</td>
<td>0.000</td>
<td>supported</td>
</tr>
<tr>
<td>H5</td>
<td>0.534</td>
<td>0.129</td>
<td>Not supported</td>
</tr>
<tr>
<td>H6</td>
<td>0.573</td>
<td>0.000</td>
<td>supported</td>
</tr>
<tr>
<td>H7</td>
<td>0.653</td>
<td>0.000</td>
<td>supported</td>
</tr>
<tr>
<td>H8</td>
<td>0.575</td>
<td>0.000</td>
<td>supported</td>
</tr>
<tr>
<td>H9</td>
<td>0.42</td>
<td>0.000</td>
<td>supported</td>
</tr>
<tr>
<td>H10</td>
<td>0.87</td>
<td>0.000</td>
<td>supported</td>
</tr>
<tr>
<td>H11</td>
<td>0.22</td>
<td>0.000</td>
<td>supported</td>
</tr>
<tr>
<td>H12</td>
<td>0.417</td>
<td>0.000</td>
<td>supported</td>
</tr>
<tr>
<td>H13</td>
<td>0.129</td>
<td>0.000</td>
<td>supported</td>
</tr>
<tr>
<td>H14</td>
<td>0.518</td>
<td>0.000</td>
<td>supported</td>
</tr>
</tbody>
</table>
The purpose of this model is to identify the success factors of government e-service delivery. Based on the results of analyzing the hypotheses, as shown in table 1, 12 hypotheses are supported. These relationships were developed in following model.

**- Significant at $P < 0.05$

### Figure 2- Standard research model

#### 9-Conclusion and discussions

The purpose of this paper was to identify the success factors of government e-service delivery from the citizens’ perspectives. After reviewing the related literature, success factors were identified and adopted from the areas of information systems (IS), marketing, and e-commerce. Upon selection of the factors, a research framework was developed to evaluate success within the area of e-government research. That area was further narrowed by specifying the government e-order registration services in Iran. The DeLone & McLean IS Success model was used as a base model in the proposed framework [6]. Considering the context of the research, some modifications were made, and new variables were added with the intent of testing the framework against government e-service delivery to determine the success factors and examine how these relate to each other. The findings that follow from the analysis and discussion are presented according to the research questions formulated.

From the analysis of the data, the relationship between system quality and e-service quality with citizen satisfaction is found to be significant in this context. This finding is according to some previous studies. According to DeLone & McLean [6, 7] and Molla & Licker [15], system quality affects satisfaction. In the present context, no direct relationship was found between information quality and citizen satisfaction, but a significant relationship was found between information quality and perceived usefulness leading to satisfaction. This implies that the information quality of the government Web site is important, but when citizens perceive it is useful for them to complete their activities, and then it affects their satisfaction. From the empirical data, it was found that perceived usefulness is positively and significantly related to citizen satisfaction. This indicates that citizens’ belief in usefulness is an antecedent of their satisfaction. If citizens think that using a particular Web site is useful for them to file their order registration return, then that will positively affect their level of satisfaction. Citizens’ satisfaction will be higher if they realize that using this order registration Web site has provided a valuable service for them; moreover, they can quickly finish their work, which makes this Web site useful for them. Also, this result indicates that whether the Web site is easy to use or not, it has no direct effect on citizens’ satisfaction level. A possible explanation could be that users of this system are more familiar with the use of information technology, which decreases the effect on ease of use. Respondents selected for this study were familiar with this order registration Web site. From the analysis, it was found that perceived ease of use has a positive and strong relationship with
perceived usefulness in e-order registration service context. The result obtained from this hypothesis indicates that the ease of using an order registration Web site is more important to the citizen. Citizens perceived the e-order registration filing service as more useful when they were required to invest less effort to use this service.

From the analysis hypothesis we found the system quality of government Web site has a positive correlation with perceived usefulness. That finding consists with previous studies. According to Seddon [18], increased system quality is associated with increased usefulness. Also we found that increased information quality in the government Web site causes increased perceived usefulness of the e-order registration service. In the context of e-order registration service delivery, information quality was found to be a very important factor. Citizens expect timely, precise, and sufficient information to finish their order registration related activities. Citizens perceive e-order registration service to be useful when they receive sufficient information precisely and at the right time according to their needs. According to the analysis, we found that system quality of the government order registration Web site is positively related to the perceived usefulness of the e-order registration service. Also a strong relationship was found between system qualities with perceived ease of use. In the context of e-order registration services, the customer’s satisfaction is conditional upon whether he or she actually got the job done, whether information was obtained that helped him or her execute the order registration related activity. In such a case, functional presentation and navigation, among other elements, will lead to a perception of how easy it is to use the site.

Also citizen satisfaction is positively related with trust. Increased citizen trust can result in citizen satisfaction in the context of e-order registration filing service. We found this result similar to previous studies. Molla & Licker [15] proposed the relationship between satisfaction and trust. Trust is a determinant of customer e-commerce satisfaction. The results obtained from hypothesis testing indicate that behavioral consistency, honesty, and the promise keeping nature of the government increase citizens’ trust. Citizens think the government cares about them, and the government has the ability to do what citizens actually want. Relationship between perceived ease of use and citizen trust was supported by the data. This indicates that the ease of using an order registration Web site increases citizens’ trust in e-order registration service. In the online order registration filing system, citizens can interact with the government through the Web site. So, it is important for citizens to understand the Web site clearly and to be able to finish their task easily.

10-References