

## A Study on the Effective Factors on the Acceptance of E-Government by the Citizens

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### Abstract

*Implementing and developing electronic government is the necessity of current era. In this situation, developing countries are increasingly trying to implement electronic government. This depends heavily on accepting the by the various public. Thus, the main aim of this research is to investigate the most important damages of accepting electronic government by the citizens. The population of the research consists of citizens of Karaj's city. Multiple cluster sampling is used to determine the sample of this research. Data collection is done by in-person questionnaire and field-descriptive research method is used. Finding results indicate among eight investigated elements of the research, perceived awareness, perceived image, perceived trust perceived security, Perceived information quality and availability of resources are of damage. Finally, according to research findings, some suggestions are presented .*

*Key words: Electronic government, Information and communicational technology, Acceptance*

### Introduction

With the advent of information age, many scholars, researchers, administrators and politicians have emphasized on the effective use of Information Technology (IT) as an efficient way for promoting the development and welfare standards. Therefore, worldwide, the governments opt for implementation of e-government systems and modern services and try to use information and communication technology (ICT) in order to increase the productivity of their internal and foreign affairs. Information and communication technologies are the technologies such as internet, internal and external networks, and other technologies which include a range from basic infrastructures of implementation to the technologies improving services and operations (Gupta & dasgupta, 2008). This view is so extended that the knowledge-based society is introduced as a model for global development (Kelly, 2003). In such a society, everybody regardless of his/her location and time situation, will have an equal access to the needed information and it is not only his/her right, but also it is one of the most important means and standards for development. These societies can even be categorized based on the index of information value and access to it. One of the most prominent social and administrative perspectives of these societies influenced by the information revolution of the last two decades is the phenomenon of e-government whose creation was a positive and effective response to the necessity of time and cost productivity and ease of public sector services and information provided to the society (TapScott, 1996). Generally, by e-government we mean direct and 24/7 use of IT for providing public services (Akmana et al, 2005). Several factors have paved the way for the advent of e-government among which the most important one deriving from technology improvement and human life complications are: technology improvement, especially IT and communication bandwidth increase, increase in investments of economic corporations in IT section and adopting it with their needs and conditions, increase in internet use and getting people to get used to it, changing the economic corporations and citizens expectations and increasing their expectation and ultimately the phenomenon of globalization, success in implementation, and use and promotion of e-government in the society which all require several prerequisites an technological, structural and cultural infrastructures. One of the most important prerequisites is the acceptance of e-government by the citizens. The current study aimed at investigating the effective factors on this acceptance.

### Statement of Problem

Simultaneous with the extensive movements of advanced countries in the field of e-government, the developing countries also deemed it impossible to continue with the previous systems and have sought to use

and establish the e-government. In this regard, the governments' hope for modifications or recreation of themselves using IT, has led to huge investments in the public sector in the field of ICT in the last decade and has drastically extended the national projects of e-government, hoping that these investments can lead in the citizens welfare (Gupta & Dasgupta, 2008). However, these governments have a long way to go for reaching their ultimate and desirable goals. Certainly, it needs establishment of several structural, technical, social and cultural infrastructures. In Iran also some actions have been taken in this regard from a decade ago. Reflecting on Iran's position in the global ranking of e-governments reveals that unfortunately, our country has not been so successful in this field. The long queues of people referring to the banks, organizations, state offices, and people who prefer referring to the related organizations and offices in person to receive the desired services instead of online connections with these organizations and offices for enjoying the numerous advantages of e-connection, is itself an evidence for this claim. The UN report on investigation of commercial and social affairs (2008) indicate that in countries ranking of e-government status, Iran ranks 108 with 0.4067 points and has underwent a 10-rank drop compared to 2005, even lower than countries such as Fiji, Guatemala, and Armenia (secretariat of supreme council of information, 1387). This frustration can have several reasons among which the failure in acceptance of e-government by the citizens is one of the most important ones. Based on this situation, the main question of the study is that "how is the status of effective factors on acceptance of e-government by the citizens?" For answering this question, the dimensions of acceptance of e-government in four main dimensions of attitude toward use, adherence to use, ability to use, and assurance to are studied based on Shareef et al (2011) model and identifying the components of each dimension, the hypotheses of the study were suggested and the status of these components were investigated. The suggested hypotheses for investigating this subject in order to obtain the objectives of the study are as follows:

- 1- The perception of citizens about e-government is not appropriate.
- 2- Computer self-efficacy of citizens in the field of e-government use is not appropriate.
- 3- Citizens' awareness of e-government advantages is not appropriate.
- 4- The perceived image of citizens about e-government is not appropriate.
- 5- The perceived trust of citizens about the e-government is not appropriate.
- 6- The perceived information quality of citizens about the e-government is not appropriate.
- 7- The citizens' ability to use e-government is not appropriate.
- 8- The availability of resources rate for the citizens in terms of e-government is not appropriate.

### **Theoretical Background of the Study**

The 21<sup>st</sup> century is named the "age of information and knowledge", since information plays a basic role and promises a modern world with modern methods of using information and knowledge. Information technology calls the shots in this new age (Talebi, 1380). E-government is one of the important phenomena resulted from the use of ICT technology and information management and it has made a very deep change in the lifestyle and the countries management and leadership. Although there is no consensus on the definition of e-government (Previtali & Bof, 2009), but two relatively comprehensive definitions can be noted: from the UN viewpoint, it is "the use of internet and the worldwide web to provide information and public services for the citizens", in Fountane opinion the e-government is "a government based on virtual organizations and organized private-public networks and its structure and capacity depends on the internet and web (Valdes et al, 2011). Moreover, Tang & Rick also define e-government as the use of ICT for improving the processes in public administration (Gupta & Dasgupta, 2008). Brown and Brodney define e-government as using technology, especially web-based instruments for promoting the access and efficiency of services and providing the government information. They categorize the activities of e-government into three main categories as government to government, government to customer, and government to business (Brown & Brudney, 2001). Among the most important advantages of e-government are: improvement in decision-making, improvement in sharing the knowledge and organizational learning, better interaction with the citizens, other state organizations, and people in business and industry, using the market resources for coordination between government and private section, more ability for influencing the organizational change management, improvement in effectiveness, more access to services, higher accountability, clarification, and lower time and costs for providing the services (Gupta and dasgupta, 2008). The e-government also strengthens democracy and reduces the distance between the citizens and government (Verdegem & Verleye, 2009; Ebrahimi & Bakhtiari, 1380).

### **Acceptance and use of E-government by the Citizens**

In most developing countries, a defect in social structures and technological infrastructures is among the most important obstacles on acceptance and use of e-government (Gupta & Dasgupta). Although there is evidence the e-government is globally growing, improving and extending, it is not clear whether all the citizens of advanced and developing countries are ready to accept it (Shareef et al, 2011). The increase in e-government use by the citizens lead in higher trust in governments and also the citizens' positive attitude toward the e-government processes. Numerous studies such as Gupta & Dasgupta (2008), Hu & Liao (2011), Previtally & Bof (2009), Coursey and Norris (2008) and Kim & Han (2006) have dealt with investigation of effective factors on acceptance of e-government by the citizens. Among these studies, Shareef et al study besides introducing a comprehensive model, include the most important components of the other studies. Therefore, this model is chosen as the theoretical framework of the current study. Also, the newness of Shareef et al model compared to the variables of the previous studies is a reason for choosing it. We follow elaborating the components of this model:

#### **Attitude to Use**

**Perceived awareness:** according to the principles of information management, one of the main reasons for reception and acceptability of e-government is creating awareness among the people. This means informing the citizens about changes in public affairs administration, implementation of innovations, the primary paradigms of the new system, use of ICT technologies, goals and visions of e-government development, comprehensive information about the related advantages and disadvantages, and total credit of system (Shareef et al, 2011).

**Computer self-efficacy:** self-efficacy in using the internet is an important factor for predicting whether the user accepts e-government instead of traditional public services (Shareef et al, 2011). The users with higher self-efficacy in using computer enjoy more easiness in usage and are more inclined for accepting computer-related technologies (Gupta & Dasgupta, 2008).

#### **Adherence to Use**

**Perceive functional benefits:** perceiving the benefits e-government leads in accepting the online systems (Shareef et al, 2011). Delon and McLane also believe that the benefits and disadvantages of the system from citizens' viewpoint increase or decrease future use and the users' satisfaction. Perceived benefit is a more important factor in success of e-government compared to other factors and if the other factors are properly managed, it will develop. In order to increase the perceived benefits, the people involved e-government should develop the government-citizens systems through promotion of information quality and services (Wang & Liao, 2008).

**Perceived image:** perceived image refers to the citizens' feeling that acceptance of e-government will improve their condition, since interacting with e-government systems reduces referring to the state organizations to a high degree (Shareef et al, 2011). Acceptance of e-government depends on the belief that the government organizations are able to provide effective services (Schaupp et al, 2010).

#### **Assurance of Use**

**Perceived trust and security:** Simultaneous with the use of ICT in providing services by the governments, the matter of privacy and information security has become crucially important (Gupta and Dasgupta, 2008). The citizens should trust the government organization providing the services. E-government services database should prove its ability for perfectly controlling the interaction process through internet and its security, especially compared to other means of interaction (such as face-to-face connection, phone and e-mail) (Lee, 2010).

**Perceived information quality:** information quality, services quality, and the perceived benefits are among the authentic indicators for success of e-government. Development of government-citizens systems leads in high-quality information and services which include sufficient and up-to-date information, security, and protection of privacy and personal services. Therefore, the responsible people should pay due attention to promotion of information quality (wang & Liao, 2008).

#### **Ability to Use**

**Perceived ability to use:** if the users are not able to use technology for accessing the useful information and services, they will nor deem e-government as beneficial and it will face failure. This failure also will lead in lack of acceptance by the citizens (Shareef et al, 2011).

**Availability of Resources:** where the computer, internet, and advance ICT technologies are not available, the citizens are not wealthy enough, not well educated, have not knowledge about advanced technologies, are socially and culturally ignorant of advanced technologies, do not have the necessary skills for using technologies, and do not believe in benefits of e-government use, implementation of e-government will not be successful (Ibid).

**Related Literature**

Shabanollahi et al (2010) have dealt with determination of the role of individual, organizational, and social variables in accepting the e-government. In this study, first the effective factors in acceptance of e-government were identified using the opinions of experts and based on this matter, a questionnaire was prepared and distributed to Tehran citizens. The results of the study indicated that availability of infrastructures and access to the services were the most important factors in acceptance of e-government in Iran (Shabanollahi et al, 2010). Gilbert et al also have investigated in their study that why the citizens prefer electronic public services over the traditional ways. They believe some factors which help positive attitude are: time and costs saving, and avoiding direct interaction. Also, the factors for negative attitude are: low quality of information, lack of financial security, and distrust. Tang and Rick in their study have investigated the acceptance of e-government services by businessmen. Their results indicated that increasing the security and quality of public services and knowledge about these services lead in higher rates of acceptance. In their opinion, the most important means for implementation of e-government is citizens’ interest for accepting it. Acceptance, expansion, and success of e-government depend on the citizens’ interest for accepting it (Gupta & Dasgupta, 2008).

**Theoretical Framework of the Study**

Based on the related literature and experimental studies about subject of the current study, Shareef et al (2011) model was chosen as the conceptual model of the study among the other infrastructures and prerequisites mentioned various studies, due to its integrity, being up-to-date, and adaptability with the dimensions and elements of the Iranian society conditions. Based on this model, the needed infrastructures for acceptance of e-government by the citizens were investigated in four main dimensions of use, ability to use, adherence to use, and assurance to use. This conceptual model is provided in diagram 1.

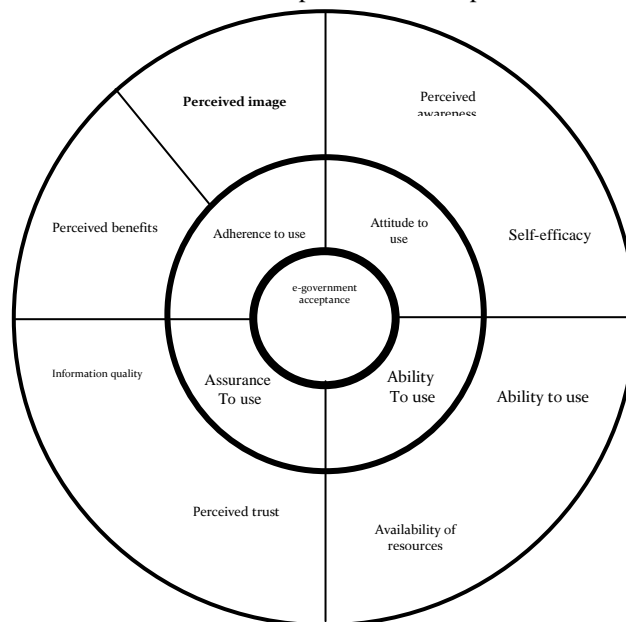


Diagram 1: conceptual model of study

**Method, Statistical Population, and Samples**

The current study is descriptive in terms of objective, and it is applied in terms of function. In terms of time, it is sectional and regarding the type of the data, it is quantitative. The statistical population of the study included the citizens of 12 districts in Karaj City (1377450 people). Sampling was done through multi-stage

cluster sampling method and using the sampling formula for finite population, the samples were calculated as 1488.

### Data Collection Instrument

The data collection instrument was a questionnaire with 37 questions with Likert Scale. A pre-draft questionnaire including 30 questions was pretested for testing the validity of it and then using the obtained data and SPSS, the reliability was calculated by Alpha-Cronbach. The validity rate of the questionnaire and dimensions and its variables are provided in table 1.

**Table 1: The validity coefficient of the questionnaire and each variable and their dimensions**

components	Whole questionnaire	Perceived awareness	Perceived benefits	Information quality	Perceived trust	Availability of resources	Ability to use	Self-efficacy	Perceived awareness
Coefficient of validity	94%	91%	90%	95%	89%	92%	93%	94%	92%

### Data Analysis Procedures

In this study, for investigating the normality of variables distribution, the Kolmogorov-Smirnov test was used. The current status of the variables was investigated by one-sample t-test and components prioritization was done through Friedman Test.

### Results

Investigating the Normality of Research Components

Kolmogorov-Smirnov test was used for investigation of normality of research components. The test results are provided in table 2.

**Table 2: the results of investigation of the data normality**

variable	Significance level	Error level	Hypothesis of normality (Ho)	conclusion
Availability of resources	0/467	0.05	Approved	Normal
perceived awareness	0/324	0.05	Approved	Normal
Computer self-efficacy	0/620	0.05	Approved	Normal
perceived image	0/576	0.05	Approved	Normal
Ability to use	0/720	0.05	Approved	Normal
Information quality	0/207	0.05	Approved	Normal
Perceived benefits	0/315	0.05	Approved	Normal
Perceived security	0/430	0.05	Approved	Normal

As it is shown in the above table, since all the obtained significance numbers are higher than 5% error level, the null hypothesis on normality of the data is not rejected. Therefore, it can be said all the components of the model have a normal distribution.

### Testing the Research Hypothesis

Due to normality of the components distribution based on Kolmogorov-Smirnov test, the single-variable student's t- test was used for investigation of the variables. The null hypothesis against all the above

hypotheses of the study was as  $\mu \geq 3$  and  $\mu < 3$ . In this study, if the test's statistics are higher than standard statistic (1.96), the null hypothesis is approved (the current status is proper), and if they are lower than the test's statistic -1.96, the null hypothesis is rejected (the current status is improper). If the test statistic is between 1.96 and -1.96, the current status is average. The results of this test for each variable are provided in table 3.

Table 3: single-variable t-value for research hypotheses test

dimensions	hypothesis	Secondary hypotheses	Frequency	Mean	Standard deviation	t-statistic	Conclusion of $H_0$	Current status
Attitude to use	1	Perceived awareness	1488	2/3671	1/5610	-9/07	Rejected	Improper
	2	Computer self-efficacy	1488	3/2988	1/23630	48/771	Approved	Proper
Adherence to use	3	Perceived benefits	1488	3/5024	1/29054	62/265	Approved	Proper
	4	perceived image	1488	2/4501	1/31121	-55/783	Rejected	Improper
Assurance to use	5	Perceived trust	1488	2/3410	1/22133	-59/424	Rejected	Improper
	6	Perceived information quality	1488	2/1530	1/24425	-24/160	Rejected	Improper
Ability to use	7	Perceived ability	1488	3/1084	1/19878	21/091	Approved	Improper
	8	Availability of resources	1488	2/2741	1/21399	-49/404	Rejected	Improper

\*\* Degree of freedom 1487

The results obtained from the investigation of the current status of constitutive components of the research conceptual model indicate that from among the 8 investigated components, the computer self-efficacy, perceived benefits, and perceived ability are proper, since their statistics were higher than standard statistic (1.96), so the null hypothesis is approved. However, the remaining 5 components (perceived awareness, perceived image, perceived trust, information quality, and availability of resources) have not a proper current status, since their test's statistic is lower than -1.96 and their null hypothesis is rejected. So, it can be said these 5 components are not proper for successful use and implementation of e-government projects.

**Conclusion and Suggestions**

The results of the study showed that the components computer self-efficacy, perceived benefits, and perceived ability is proper among Karaj citizens and it can be a good motive for Institutionalization of e-government in this city. On the other hand, implementation of e-government in this city has also faced some obstacles, since 5 components perceived security, availability of resources, information quality, perceived awareness, and perceived image have not a proper status among the statistical population. Based on this matter, considering the following suggestions is useful for improving and strengthening the mentioned components:

- It is suggested the process of culture-making plans be followed in areas which are needed by the majority of people. This means a public call for people. Currently, most of the e-government projects cover a certain range of people as in most cases even there are not any obligations for using e-government. This can lead to the citizens and e-government getting ever growingly close.
- The propagation programs should be designed by the organizations for introducing the websites and the instructions for using them. This will significantly reduce the difficulty of use from citizens' viewpoint. The e-government policy makers approach should be the maximum attraction. The supportive programs should encourage all people for real use of e-government services.
- Trying to develop and establish high speed internet connections in different locations. Currently, using internet connections in different locations is vulnerable in terms of costs, speed, and coverage. Designing programs based on the mentioned three bases can lead in higher attraction of the audiences.
- Holding the computer skills classes through public media and cultural centers as well as other social centers in different places in the city. this concept is usually accompanied with empowerment (knowledge and skill) of the citizens which is referred to as social entrepreneurship and help prepare the required self-confidence for establishing a connection and continuous use of e-government. Moreover, this enables the closest and easiest connection with the citizens in the lowest distance.

- Real deepening of the slogan that today, “illiterate is not the one who cannot read and write, but those who have not computer knowledge”. This needs a cultural effort. Obviously, with the expansion of education level in the society, the citizens will put more efforts for gaining knowledge on computer skills.
- Pilot implementation of the websites in different knowledge and ethnic levels, so by using the previous feedbacks, the websites can get more and more user friendly.
- The adoption of measures to increase the security of personal information can improve the citizens’ interest in services. In this regard, the authorities’ commitment and providing the security statements in the websites can lead in citizens’ satisfaction.
- Precisely updating of the websites contents prevents the citizens’ pessimism and make them think maintaining the websites quality and growing use of citizens are among main concerns of the organizations providing the services.
- The organizations should prioritize this movement as their first task through using a systematic approach and commit themselves culture-making of this valuable movement. They should also consider without any partiality that investment in this area will lead in society benefit and savings.

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