Identify and ranking the factors affecting the Implementation and Development of E-Urban (Case Study Qazvin)

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KEYWORDS	A B S T R A C T
Beijing strain, CTAB, *Mycobacterium tuberculosis,* PCR, RFLP, spoligotyping, role	Today, when we move toward mechanization, face-to-face communication can't solve our problems. In modern cities, we face population increase and urban traffic increase. The past bureaucratic methods can't be suitable and efficient for dealing with administrative affairs of the citizens. For this reason, important organizations such as municipalities in large cities, which are regarded as beating heart of the city, should stop using the previous methods and enter electronic and virtual world to better satisfy the new demands. The world in which activities are performed more rapidly and reliably and there is no need for population density in physical world. We should find a solution for reducing urban traffic, performance expenses, conducts and mental disorders, administrative corruption and tens of the problems which we face in large departments and organizations and the best solution is to establish virtual organizations which reduce the mentioned problems and even result in improvement of the working trend. In order to reduce many urban problems such as traffic, environmental pollutions and heavy expenses resulting from unnecessary traffic of the citizens in near future, municipality services should be accessible through internet and websites of this institution. New concept of E-Urban originates from such essential need. We can define E-Urban as follows: E-Urban is the organization which provides its services to citizens rapidly, easily and safely by using information and communication technology. On the other hand, municipalities learn to act optimally for changing and establishing electronic services total system from making services online, reengineering of organization, citizen oriented trends and integration among different sections for simplifying interaction, reducing expenses and developing urban services.

Introduction

Cities are considered as 'engines of growth'. It is believed that the developed

countries of the world could achieve fast economic progress due to large scale

urbanization. However, rapid urbanization in many developing countries over the past half century seems to have been accompanied by excessive concentration of urban population in big cities and consequent challenges of housing, infrastructure, sanitation, transport, environment and livelihoods for the urban poor.

Standardization of public service delivery is the hall mark of good urban governance. The basic purpose of urban reforms is to improve citizen service delivery, transparency, accountability and responsiveness on the part of various urban service providers. E-Urban aims to develop an integrated system to deliver citizen centric service at Urban Local Bodies at anytime, anywhere basis.

Today, increasing growth of new Information and communication technologies has provided opportunities for the public institutions to serve the public. Municipalities are recognized as one of the main elements of governments for providing satisfactory services to the people. For this reason, use of new technologies for serving the public is a problem which is considered by the responsible authorities in recent years. In Iran, the first E-Urban activities have been commenced in almost a decade. Emergence of information technology and its increasing growth leads to creation of a major change from industrial society to informant society theoretically and practically. Promulgation of some terms such as e-banking, e-business, e government, and e-education indicates increasing emergence of information technology in society level. E-Urban plays important role in life of people in a society as one of the most important manifestations of the information technology.

Troublesome traffic, increasing pollutions and different problems which the large cities face are the most important factors which lead authorities of the large cities to use information technology and new tools for providing information and services to the citizens.

Creation and expansion of E-Urban have many advantages for municipalities. But the main question is that what degree of E-Urban has been realized in Iran. Answering some fundamental questions are subject to its assessment. The previous studies have assessed development of E-Urban on the basis of content and usefulness of information site. Status of the E-Urban in Iran can be assessed with such approach. In any way, it is necessary to assess municipalities of the provinces capitals and counties in our country in terms of extent and manner of electronic information presentation and their services in order to recognize present status for access to ideal E-Urban and planning.

A decision maker needs to make use one of the MCDM methods (Ayag and Ozdemir, 2009).AHP is a hierarchically structured technique that concentrates compares and evaluates the influence of various elements on the objectives (Vinodh.S et al, 2011). The Analytic Hierarchy Process (AHP) is a theory of measurement through pairwise comparisons and relies on the judgments of experts to derive priority scales (Saaty, 2008).The AHP helps decision makers organize the important components of analysis into a hierarchical structure. Then, by reducing complex decisions to a series of simple pairwise comparisons, the AHP helps them arrive at the best decision. Compared to other techniques like ranking or rating techniques, the AHP uses the human ability to compare single properties of alternatives. It not only helps decision

makers choose the best alternative, but also provides a clear rationale for the choice. The AHP is a theory of relative measurement on absolute scales of both tangible and intangible criteria based both on the judgment of knowledgeable and expert people and on existing measurements and statistics needed to make a decision (Figueira et al, 2005). (Kajanus et al, 2004) applied the AHP to answer the question of whether culture can be identifying as a successful factor in rural tourism. The approach was exactly the same as that presented previously in Kurttila et al [2000].AHP has been widely used as a multiple criteria decision-making (MCDM) tool or a weight estimation technique in many areas such as selection, evaluation, planning, development, and so on. A mathematical decision-making technique allows consideration of both qualitative and quantitative aspects of decisions. It reduces complex decisions to a series of one-on-one comparisons, and then synthesizes the results (Zarepour, et al, 2008). The description is developed in three steps (Satty, 1980):

Step 1: Compose a pair-wise comparison decision matrix A Let C1, C2…, Cn denote the set of elements, while aim represents a quantified judgment on a pair of elements, Ci and Cm. Saaty constitutes a measurement scale for pair-wise comparison. Hence, verbal judgments can be expressed by degree of preference: Equally preferred with 1, Moderately preferred with 3, Strongly preferred with 5, Very strongly preferred with 7 and Extremely preferred with 9; 2, 4, 6 and 8 are used for compromise between the above values.

Step 2: Normalize the decision matrix. Each set of column values is summed. Then, each value is divided by its

$$A * w_i = \lambda_{max} * w_i, \quad i = 1, 2, \ldots, n. \quad (1)$$

respective column total value. Finally, the average of rows is calculated and the weights of the decision-maker's objectives are obtained. A set of n numerical weights w1, w2, ..., wi are obtained. **Step 3:** Do consistency analysis (1).

Then consistency index (CI) is calculated as (2):

$$CI = \frac{\lambda_{max} - n}{n - 1}. \quad (2)$$

The consistency index of a randomly generated reciprocal matrix shall be called to the random index (RI), with reciprocals forced. An average RI for the matrices of order 1–15 was generated by using a sample size of 100. The table of random indexes of the matrices of order 1–15 can be seen in (Saaty T. , 1980). The last ratio that has to be calculated is CR (consistency ratio). Generally, if CR is less than 0.1, the judgments are consistent, so the derived weights can be used. The formulation CR is (3):

$$CR = \frac{CI}{RI}. \quad (3)$$

E- urban

Today, when we move toward mechanization, face-to-face communication can't solve our problems. In modern cities, we face population increase and urban traffic increase. The past bureaucratic methods can't be suitable and efficient for dealing with administrative affairs of the citizens. For this reason, important organizations such as municipalities in large cities, which are regarded as beating heart of the city, should stop using the previous methods and enter electronic and virtual world to better satisfy the new demands. The world in which activities are performed more rapidly and reliably and there is no need for population density in physical world. We should find a solution for reducing urban traffic, performance expenses, conducts and mental disorders,

administrative corruption and tens of the problems which we face in large departments and organizations and the best solution is to establish virtual organizations which reduce the mentioned problems and even result in improvement of the working trend. In order to reduce many urban problems such as traffic, environmental pollutions and heavy expenses resulting from unnecessary traffic of the citizens in near future, Urban services should be accessible through internet and websites of this institution. New concept of E-Urban originates from such essential need.

We can define E-Urban as follows: E-Urban is the organization which provides its services to citizens rapidly, easily and safely by using information and communication technology. On the other hand, municipalities learn to act optimally for changing and establishing electronic services total system from making services online, reengineering of organization, citizen oriented trends and integration among different sections for simplifying interaction, reducing expenses and developing urban services (Sarfarazi, 2007).

Current condition

Initiatives and Strategic vision The need for comprehensive integrated solution for establishment of functional E-Urban has prompted the Municipalities of Iran to prepare a Strategy for integrated IT development The Strategic vision is to create a fully functioning E-Urban through a wide range of electronic services to businesses and citizens, optimization of the business processes and increase of the efficiency and service provision to the public citizen has in parallel initiated a development of an inter-municipal strategy for ICT development The first step is the creation of a centralized repository of all

the separate ICT solutions which are in operation in all the municipalities .Next Steps Definition of the implementation requirements Definition of the possible sources of financing (multilateral/bilateral donors, self participation, public-private partnership).

Specifications and advantages of E-Urban

- ✓ Excluding paper files and converting them to digital information
- ✓ Excluding sections relating to telephone operator in the organization
- ✓ Considering electronic communication and applying it in operator section
- ✓ Creating a place for exchanging views of citizens about performance of the mayor and Urban organization
- ✓ Paying duties for renovation etc. through internet
- ✓ Excluding trends of Urban files and reducing physical traffic to the organization
- ✓ Informing activities of the Urban and affairs relating to city on a daily basis

By executing E-Urban, services of Urban are provided to the citizens, managers and policymakers through internet. It means that the citizens can receive their required information through internet by referring to internet portal of the Urban without coming and going in the city, information such as records of property including licenses and certificates issued by the Urban, construction rules and regulations, annual duties, outstanding debts of the property and some other cases such as registering request for issuance of license and receiving different enquiries reply through

internet. In an E-Urban, there should be architectural and calculation plans in internet to be used by the citizens so that the result is announced to the addressees at request of the citizen and after performing necessary control processes on the basis of construction rules through the system.

The Impact of E-Urban Performance on Citizens

If some necessary conditions be provided for establishing an e-Urban, many advantages will be created, such as: the reduction of government responsibility in presenting electronic services (Toots, 2007; Flak, et al., 2005), delivering the services more accurate and efficient (Gusev, 2004; Holden, eta al., 2003), reduce the cost of public sectors (Keith, 2002; Scott, 2005), transparency in responding (Roy, 2005a; Geiselhart, 2004) and easier access to services for citizens will be provided. The removing of superfluous stages and emphasis on the immediate and efficient e-Urban services will attract investors, who with the aim of profitability (by offering services to citizens) will create a competitive environment. Some researchers had studied on the advantages of offering Urban services by the private sector which show that offering governmental services by outsourcing it to the private sector (Allen, et al., 2005; Devadoss, et al., 2002), in addition to protect of the real services price, it will be accompanied with the easily access to services for users (24*7), improving the employing rate, improving entrepreneurship in cities and satisfying the citizens (Acioly, 2003; Allen, 2003).

Research Methodology

The methodology of this research was based on descriptive-analytical methods. For collecting information and data required, documentation and field studies such as interviews and using these data, the attractions, facilities, services and e-urban , e-readiness, e-government, e-Urban and e-services situation in region has been investigated.

Data Analysis

This study uses 4 major criteria and 20 minor criteria that are shown in Figure1.This study uses an expert interview method. The objects were professional Urban management experts in Iran (25 experts).Data collected from the experts was analyzed with the AHP method. Here, the data achieved from Analytical Hierarchy Process (AHP) are depicted in the form of the following tables:

According to the results, experts believe that the most important effective factor on Implementation and Development of E-Urban is Infrastructure factors; whose total weight is 0.4916, and it is shown in table 6, Government factors with total weight of 0.4715, Organizational factors with total weight of 0.2902 and Environmental factors with total weight of 0.2775 are known as the second and the third, Fourth effective factor from experts' point of view.

Future study can identify and ranking effective factors on Implementation and Development of E-Urban by different methods such as ELECTRE, TOPSIS and VIKOUR.

Result and Discussion

By the entrance to the age of information and internet promotion also development of electronic and mobile technology in the beginning of the third millennium, the other side of information and communication technology which the tight linkage of

citizens and government structures was along with is appeared. Electronic government (e-government) as a major artery between the citizens and governments bring up and developed (Allen, et al., 2005; Kenny, et al., 2002). With the arrival of the second decade of the 21st century, the view of governments has changed from the centralization of e-government policies toward the decentralization due to effective, integrated and personalized interactions of citizens and government parts. Nowadays, the functional form of this concept can be found in the electronic Urban (e-Urban). E-Urban is one of the sub-groups of e-government that gives electronic services (e-services) to citizens in a smaller scale in cities. (Scott, 2005; Gibbons, 2005; Moon and Norris, 2005; McMillan, 2004; Fletcher, 2004) In the other hand, this is the more effective use of e-government model in municipalities. In a definition from Toots (2007), "e-Urban is included the use of information and communications technology (ICT) (from Fax to the advanced form of long-way communication tools) in order to facilitate the implementation of the governmental daily life, (especially that part of the programs which is related to citizens' services). The tendency to present e-government services in the form of e-Urban is related to many factors, such as: 1) attention to the supply

of financial resources in the local government in order to support the cost of the establishment, development and using electronic Urban ; 2) attention to cultural, social, political and economical dimensions over the region ; 3) increase of the citizens' participation in offering better services to them ;4)speeding up the implementation of e-government activities in the country ; reducing central government interference in decision-making and handling the cities .What from these concepts and definitions can be concluded is an e-Urban outputs are similar to e-government performance that are presented more complete, easier and closer to citizens. But an important distinction between implementing the e-Urban project in different cities of a country is the level of their readiness in order to increase productivity and improve performance of e-Urban). Level of electronic readiness (e-readiness) is the scale of ICT readiness that it is available in a government, a city, an organization or institution, and even a society.

The purpose of this paper is to understand the potentials and opportunities of the municipalities in order to increasing public participation, improving the business environment, increasing efficiency and effectiveness of public sector agents and improving the quality of citizen's life in Iran.

Figure1. AHP hierarchy for the Effective factors on Implementation and Development of E-Urban
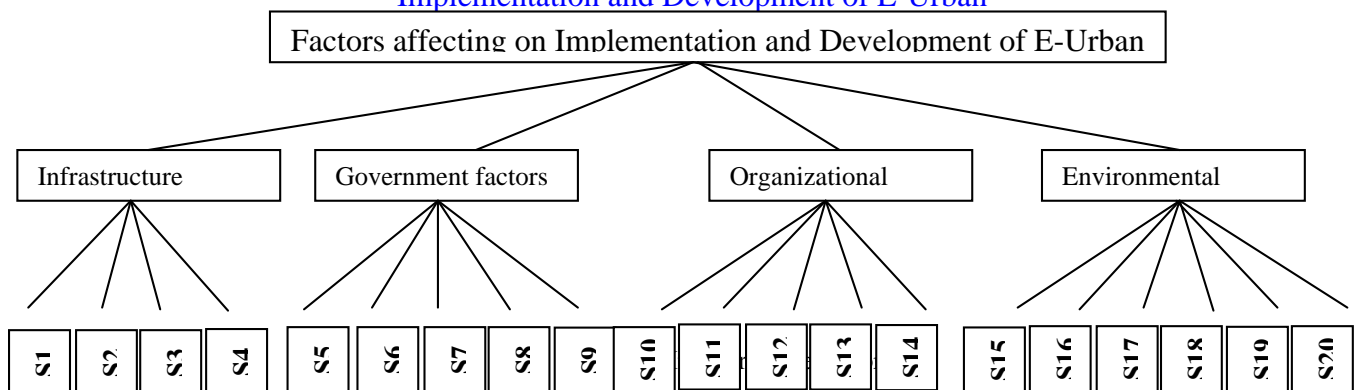
Sub- Criteria	relative weight	total weight	rank
IT and Technical Infrastructure	0.254	0.1462	1
human resources Infrastructure	0.157	0.1357	3
Cultural and social infrastructure	0.217	0.0895	7
Legal infrastructure	0.119	0.1202	5

Table.2 Government factors

Sub- Criteria	relative weight	total weight	rank
Governance Government	0.245	0.1389	2
E-services government	0.154	0.0502	14
Government support	0.267	0.1234	4
Rules and regulations	0.248	0.0903	6
Government funding	0.138	0.0687	10

Table.3 Organizational factors

Sub- Criteria	relative weight	total weight	rank
Globalization	0.158	0.0492	15
Citizen participation	0.116	0.0623	11
sanctions	0.268	0.0211	20
E-Life	0.194	0.0617	12
Private sector investment	0.263	0.0421	16
Inflation	0.132	0.0411	17

Table.4 Environmental factors

Sub- Criteria	relative weight	total weight	rank
Globalization	0.158	0.0492	15
Citizen participation	0.116	0.0623	11
sanctions	0.268	0.0211	20
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Table.5 Ranking and Final evaluation of alternatives

Criteria		sub Criteria		relative weight	total weight	rank
Infrastructure factors	0.4916	S1	IT and Technical Infrastructure	0.254	0.1462	1
		S2	human resources Infrastructure	0.157	0.1357	3
		S3	Cultural and social infrastructure	0.217	0.0895	7
		S4	Legal infrastructure	0.119	0.1202	5
E-Government factors	0.4715	S5	Governance Government	0.245	0.1389	2
		S6	E-services government	0.154	0.0502	14
		S7	Government support	0.267	0.1234	4
		S8	Rules and regulations	0.248	0.0903	6
		S9	Government funding	0.138	0.0687	10
Organizational factors	0.2902	S10	Inside Organizational factors	0.187	0.0389	19
		S11	The role of senior management	0.216	0.0406	18
		S12	Capacity Planning	0.384	0.0602	13
		S13	Capacity to change	0.109	0.0741	9
		S14	Economic - financial factors	0.165	0.0764	8
Environmental factors	0.2775	S15	Globalization	0.158	0.0492	15
		S16	Citizen participation	0.116	0.0623	11
		S17	sanctions	0.268	0.0211	20
		S18	E-Life	0.194	0.0617	12
		S19	Private sector investment	0.263	0.0421	16
		S20	Inflation	0.132	0.0411	17

Table.6 Ranking and determining factors affecting on Implementation and Development of E-Urban

criteria	relative weight	total weight	rank
Infrastructure factors	0.4916	0.4916	1
Government factors	0.4715	0.4715	2
Organizational factors	0.2902	0.2902	3
Environmental factors	0.2775	0.2775	4

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The tendency to present e-government services in the form of e-Urban is related to many factors, such as: 1) attention to the supply of financial resources in the local government in order to support the cost of the establishment, development and using electronic Urban ; 2) attention to cultural, social, political and economical dimensions over the region ; 3) increase of the citizens' participation in offering better services to them ;4)speeding up the implementation of e-government activities in the country ; reducing central government interference in decision-making and handling the cities .What from these concepts and definitions can be concluded is an e-Urban outputs are similar to e-government performance that are presented more complete, easier and closer to citizens.

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