E-Municipality; New Step in Providing Electronic Services in Iran

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Abstract

Nowadays municipalities are the meeting-point of the government and citizens. E- Municipality is known as the main step of governments in the first decade of the third millennium. So improving the cultural, social and political infrastructures and gaining the e- readiness in order to establish the e-municipality are considered as the main municipalities' mission. The purpose of this article is to examine the impacts of e-readiness on the e-municipality and the impact of e-municipality performance on urban activities and citizen and attitude of citizens. According to this purpose, besides reviewing the e-readiness and e-municipality literature; the improving on e-services is considered as the main topic. This study is practical according to its purpose and descriptive-correlation based on its data-gathering method. The population is all personals of Zahedan's municipality. The research's result, in addition to present a comprehensive model; show that the e-readiness of Zahedan's municipality is remarkable from the organizational, system-services and infrastructural perspective. Moreover, the establishment of e-municipality in Zahedan will cause to improve the business environment, strengthen the social participation and increase the public sectors' effectiveness; but it will have no effect on improving the citizens' life-quality level. Consequently, it is proposed to Zahedan's municipality that besides the strengthening of cultural and social infrastructures, to flow the service-oriented view in order to raise the level of citizens' convenience.

Keyword: e-readiness, e-government, e-municipality, e-services, Zahedan

1. Introduction

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 municipality (e-municipality). E-municipality 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-municipality 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-municipality 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 municipality (Moon, 2002; Koh and Prybutok, 2002); 2) attention to cultural, social, political and economical dimensions over the region (Lighthouses, 2007; Gibbons, 2005; Kunstelj and De man, 2005); 3) increase of the citizens' participation in offering better services to them (Geiselhart, 2004; MacIntosh, 2003); 4) speeding up the implementation of e-government activities in the country (Abdollahi, et al., 2009; Kunstelj, et al., 2009; Esteves and Joseph, 2008) and 5) reducing central government interference in decision-making and handling the cities (Gottschalk, 2009; Moon, 2002).

What from these concepts and definitions can be concluded is an e-municipality 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-municipality project in different cities of a country is the level of their readiness in order to increase productivity and improve performance of e-municipality (Lighthouses, 2007). 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 (Ghavamifar, et al., 2008; Alshawi, 2007; Al-Omari and Al-Omari, 2006).

By the way, this research tries to while dealing with the available literature of the e-readiness and e-municipality, present a comprehensive model in order to show the importance of e-municipality in social, economic and political aspects of 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 Zahedan1 (an Iranian city).

2. Literature Review

E-municipality is one of the main plans for developed countries and some of the developing ones in recent years (Gusev, 2004; Holzer et al., 2003). International studies has brought up the insight of government people to the e-municipality as the winning card in their rule, in a way that a part of the annual budget in many of these countries related to the feasibility study of e-municipality project in different cities, or development of infrastructures in order to improve the current system in organizations and through the society. Moon and Norris (2005), believe that the realization of goals in order to establish e-municipality in its the first step depends on the examination of conditions and the amount of readiness in the country, the region, the area, the city from the ICT perspective which is called e-readiness.

2.1 E-Readiness and E-Municipality

Although e-readiness for launching projects like e-government and e-municipality is very important, but it will be executed according to the scale of development in different countries (APEC, 2000). On the other hand, the criteria of the e-readiness for implementing the e-municipality project are different and varied (Roy, 2006; Streib and Katherine, 2005; Koh and Prybutok, 2002; Ho, 2002). The most important ones are organizational readiness, services and system readiness and infrastructure readiness.

Organizational readiness is its readiness in employing the Information and Communication Technology (ICT) in order to integrate business processes (Aicholzer and Schmutzer, 2000), strategic alignment of the organization with the information technology (Beig, et al., 2006; Molla, 2004; Choucri, et al., 2001), take attention to the legal aspects of information technology (Bridges.org, 2005) and the education of human resources (Azab, et al., 2009; Al-Omari and Al-Omari, 2006; DESA, 2005) as the executives of e-municipal project.

Many researchers investigated on organizational readiness according to accept ICT and they believed that an organization has enough e-readiness to give services to its employees and clients when it uses strong and integrated information systems in all of its parts. They have considered the employees education (Strohmeier and Kabst, 2009; Dada, 2006); IT strategic planning (Dallas, 2002; Kovacic, 2005); alignment of business strategies (Scholl, 2005; Krishnaswamy, 2005; Scholl, 2003) and attention to the legal readiness (WBG, 2001) for achieving the organizational readiness goals. Consequently, this hypothesis can be mentioned:

The First Hypothesis: The organizational readiness has a meaningful and positive effect on achieving objectives in Zahedan's e-municipality.

Besides the organizational aspects, other factors such as transmission of organizational knowledge from traditional systems to modern ones based on the new information technology, designing and launching websites and portals, offering municipality services in electronic form and also integration of the systems, are important to achieving the e-municipality goals. In the literature of the e-readiness these dimensions are called as system and services readiness. System and services readiness to be applied to a readiness in which the government, the public sector organizations and private sector businesses change the virtual space as a platform to serve customers by some tools such as information systems, websites, portal and capabilities of the Internet (Saidi and Yared, 2006; Melitski, 2005). The occurrence of this kind of readiness depends on enough knowledge in mathematics (Fuzzy Logic, Neural Networks), IT, ICT and marketing. So, this kind of readiness can be called as the most difficult step in achieving e-municipality goals. Bandor & Miller (2006) introduced developing on Internet networks and its software functions; Minkoff & Cline (2004) integration systems also Fagan & Fagan (2001), Gant & Gant (2001) and Layne & Lee (2001) preparation a website and portal in order to offering services; as prerequisites of any kind of services and system readiness. Moreover some researches like Elwood et al., (2006); Loyarte & Rivera, (2007); Money & Turner, (2004); investigated on technological acceptance models in order to establish information systems and offering services based on virtual space and found that an organization will be successful in achieving its goals of electronic services if can integrate and coordinate soft and hard tools, skills, structures, strategies and human resources based on a systematical framework. So the second hypothesis can be like this:
The Second Hypothesis: The services and system readiness has a meaningful and positive effect on achieving objectives in Zahedan's e-municipality.

The e-readiness based on organizational, system and services indicators can be called as software readiness. Beside the software readiness, other important factors are which they all can be mentioned as hardware readiness. Factors such as: Local Networks, Internet Networks (Optical Fiber, Wireless Networks, DSL), Networked Value-Added Services (Video Conference, FTP, etc), Spatial Data Infrastructure Systems, Security Systems and Geographical Information Systems (GIS) which can be considered as hardware or in other words the infrastructure readiness (Montazer, 2006; EIU, 2006; McClure, 2000; Bonham, et al., 2001). In this point of view, the rate of municipality's readiness is evaluated through the availability of suitable infrastructures by some variables like physical space of hardware part, band width, the way of network connection and so on.

Some researches like Kalu, 2007; Chen and Wellman, 2003; Chen and Gant, 2001; Tambouris, et al., 2001; Joshi, et al., 2001; Norris, Fletcher and Holden, 2001; Ho, 2002 believe that the most important readiness criterion in an organization is infrastructure readiness, because it is the main cornerstone of any interaction based on the available network of communication infrastructures. Toots, 2007; Moon, 2002 and Gusev, 2004 believe that attention to the information and communication infrastructures is a prerequisite for establishing of the projects like e-government or e-municipality.

On the other hand, some researchers have a look beyond this and compare the infrastructure readiness criteria with the rate of the country developing. For example Ng'ambi (2006) believes that there is a kind of interactive relation between development and infrastructure readiness. What a country in social, economic and cultural e.g. is more developed; it is more ready to pay attention to infrastructure in order to give services to its citizens. Furthermore, if managers pay more attention to strengthening ICT based infrastructures, the country will grow faster toward development. Thus the third hypothesis of the research can be mentioned in this way:

The Third Hypothesis: The infrastructure readiness has a meaningful and positive effect on achieving objectives in Zahedan's e-municipality. The municipality's attention for achieving the e-municipality objectives is a matter which attracts developed countries and many of developing ones to it. In this way electronic readiness is an inseparable element in success of this project. Although different researchers emphasis on the importance of one kind of the readiness (organization, system and services and infrastructure) to achieve the objectives municipality, actually researchers in this paper suppose to simultaneous attention to all of them is necessary. That is to say, success of e-municipality project depends on the simultaneous attention of governors to create and develop all of the e-readiness criteria. In fact, Zahedan as one of the developing cities in Iran has implemented a new approach for offering services to its citizens. So it is necessary to evaluate the importance of each e-readiness criteria in Zahedan municipality (according to the pattern of success e-municipalities in the world) and at last some practical idea for establishing e-municipality project be offered.

2.2 The Impact of E-Municipality Performance on Citizens

If some necessary conditions be provided for establishing an e-municipality, 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-municipality 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 municipality 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). According to this the forth research hypothesis is:

The Forth Hypothesis: The performance of e-municipality has a meaningful and positive effect on creating a better business environment in Zahedan.

Transparency and accountability in the e-municipality will provide an appropriate opportunity for citizens' participation in political and social activities also decision-making processes (Norris, 2005; Kernaghan, 2004; Geiselhart 2004), because of the possibility of immediate access to urban and regional information in the field of political, social, cultural, etc. Some researchers believe that all citizens of a city are e-municipality's stockholders that it makes the process decision-making much easier for managers (Lee, 2004; MacIntosh, 2003; Ridel, 2001). In other words, governors' transparency and accountability also availability of information for citizens will strengthen the foundation of good governance; but they do not necessarily create it. (Bednarz, 2002; Robinson, 2002; Roy 2005a; Pavlichev and Garson 2004) Meanwhile, MacIntosh, 2003 and Bonham, et al., 2001 argue that not only information transparency is one aspect of democracy establishment, but also the contribution of citizens in macro decision-making will gradually improve democracy in a society. Therefore the fifth research hypothesis is as such:

The Fifth Hypothesis: The performance of e-municipality has a meaningful and positive effect on strengthening good governance and broadening public participation in Zahedan.

Organization readiness, system and services readiness and infrastructure readiness not only prepare necessary conditions for better implementation of e-municipality project, but also provide the situation for reducing or eliminating redundancy regulations in the municipality and related organizations. That is to say, the implementation of e-municipality project is a positive step towards business processes re-engineering to improve the way of offering services to citizens (Gupta, 2005; Thomas, 2001). Although processes business re-engineering in e-municipality increase the organization's cost, actually has an impressive effect on productivity of municipality's human resources, systems and organizational structure in long-term. Some researchers investigated on the influence of ICT in the public sector organizations and they have considered the use of electronic mechanisms for delivering services to citizens as an effective step toward productivity (Dunleavy, et al., 2002; Brown 2003; Hart-Teeter 2004; Roy 2005b; Goldsmith and Eggers, 2004) According to study this factor in Zahedan's municipality, the sixth hypothesis be considered:

The Sixth Hypothesis: The performance of e-municipality has a meaningful and positive effect on improving of productivity and effectiveness of government agencies in Zahedan.

It may be said that the main mission of all sections of the state, especially municipalities, is to improve the quality of life for citizens. This reality is the main application of ICT in the government and municipalities. The promotion of interaction between the three main actors in society, means government, citizens and businesses can be considered as the ultimate aim of the e-municipalities (Toots, 2007; Geiselhart, 2007; Aicholzer and Schmultzer, 2000). This interaction follows only one long-term goal which is improving of citizen's quality of life.

This concept can be considered from value and financial viewpoint that causes to reduce the citizen's cost in order to utilize of public services and also human dignity (Carbo, 2007), effective interaction in social networks (Cotterill and King, 2007; Nooy, et al., 2005), speeding up the appropriate social activities and reduce the gap between the different social classes (Geiselhart, 2004; Fagan and Fagan, 2001). Correspondingly, the seventh hypothesis is formed:

The Seventh Hypothesis: The performance of e-municipality has a meaningful and positive effect on improving of citizens' quality of life in Zahedan.

The e-municipality has raised citizens' view about service-delivering concept. On the other hand, offering e-services in the municipalities has become much easier and faster than before because of improving in cultural level of citizens. This cycle has provided increasing interaction with the goal of promoting the e-services and also citizens' ready to accept the offered services.

3. Methodology

In this study, because of its dealing with testing the effect of e-readiness dimensions (Organizational readiness, system and services readiness and infrastructure readiness) on e-municipality performance and also e-municipality performance on citizen, and developing practical knowledge about the quality of relation and effectiveness between these variables, it is practical according to its purpose and based of its data collection is descriptive and correlative type.

3.1 Data Collection and Analysis

The Questionnaire comprises of four different sections. The first section containes 5 questions which are related to personal information of the respondents. The second section contains 24 statements for measuring the three e-readiness dimensions: Organizational readiness (OR), system and services readiness (SR) and infrastructure readiness (IR). Respondent were asked to indicate their extent of agreement using a five point likert scale (with 5 = completely agree, to 1 = completely disagree). The third section contains 9 statements for measuring the three e-municipality performance dimensions: Information Services, Interactional Services, and Transactional Services. The Final section contains 12 statements for measuring the four dependent variables: business environment (BE), good governance and public participation (GGPP), productivity and effectiveness of government agencies performance (PEGAP) and citizens' quality of life (CQL). Respondent were asked to indicate their extent of agreement using a five point likert scale (where 5 = extensively covered, to 1 = weakly covered). For analyzing data derived from questionnaire, Structural Equation Modeling (Confirmatory factor analysis for testing the construct validity and Path Analysis for Assessing of model fit and hypotheses test) has been used also LISREL 8.54 and SPSS 18 have been used for analyzing the data

3.2 Reliability and Validity

For determining reliability of the study Cronbach's Alpha method has been used. Table 1 shows reliability of the study.

Table 1: reliability of the study

Construct	concept	Number of questions	Cronbach's Alpha
e-readiness	Organization readiness	6	0.77
	Services and system readiness	8	0.77
	Infrastructure readiness	10	0.84
e-municipality	Information Services	3	0.85
	Interactional Services	3	0.83
	Transactional Services	3	0.91
business environment		3	0.89
good governance and public participation		3	0.94
productivity and efficiency of government agencies		3	0.89
the quality of life		3	0.80

For determining validity of the questionnaire, content credit and construct credit have been used. Content credit of this questionnaire has been justified by guide professors and co-guides and also by initial distribution of questionnaire among numbers of experts, scholars and considering their corrective comments, it gained the necessary credibility. Construct credit in this study is described as following:

3.3 Statistical Population

The data were collected from employees in municipalities of Zahedan city (Centeral and the first, the second and the third district) in Iran. All respondents were full- time employees and volunteered to participate in the study. Total number of staff according to report of Human Resources Management department is about 126 people. 126 questionnaires were delivered to employees by a researcher and 120 useful questionnaires were returned. Usable questionnaires entered into Excel datasheet and analyzed with the use of SPSS 17 and Lisrel 8.54. Male employees accounted for 71.7% of the total participants, while female employees accounted for 28.3%. From 120 respondents, 44 people have Associate Degree, 61 people have Bachelor degree, 10 people have master art degree and 5 people have PhD degree. This is while the age of 11 of these people were under 20, 26 people between 20-30; 60 people between 30-40, 21 between 40-50 and 2 people were more than 56 years old.

4. Result

4.1 Confirmatory factor analysis

Structural Equation Modeling (SEM) with LISREL 8.54 (Petroutsatou and Lambropoulos, 2007; Bae, 2005) was used to test and analyze the relationship between Construct and its concepts in the research model.

The Confirmative Factor Analysis's goal is to confirm the special factorial structure which according to it all constructs (Independent, Mediator and Dependent Variables) relations can be shown. Based on it the covariance matrix is used. Results of the covariance matrix are mentioned in Table 2. In this table the concept of each construct is evaluated in order of two criteria: factor loading and t-Value. Petroutsatou and Lambropoulos (2007); Hair et al. (2006) and Tomer and Pugesek (2003) believe that the factor loading have to be more than 50% and t-Value in Significance level of 95% have to be out of (-1.96,1.96) range. This will prove the accuracy of the questionnaire and every construct's concepts. As it can be seen, Network Connectivity factor does not have the required terms. So it will be omitted for Construct validity determination and of the rest of the way.

Table 2: factor loading and t-values of the measurement model

Construct/concepts	Factor Loading	t-value
Organizational readiness		
Strategies and management of IT business	0.92	4.91
Aspects of Legal, Regulatory and Investment	0.90	5.47
Human Resources	0.40	2.99
Service and system readiness		
Functional aspects of Software	0.91	9.56
Technical aspects of Software	0.89	4.38
Systems integration	0.92	9.90
E-services	0.89	7.46
Infrastructural readiness		
Network Connectivity	0.18	1.43
Hardware	0.98	6.33
GIS	0.99	6.14
Security	0.81	7.60
Spatial Data	0.78	6.33
E-municipality		
Information Services	0.99	5.53
Interactional Services	0.91	7.86
Transactional Services	0.72	6.14
Business environment		
BE1	0.73	8.34
BE2	0.80	9.26
BE3	0.82	9.94
Good governance and public participation		
GGPP1	0.55	6.03
GGPP2	0.40	4.98
GGPP3	0.62	2.12
Productivity and efficiency of government agencies		
PEGA1	0.43	5.51
PEGA2	0.43	5.58
PEGA3	0.47	5.66
Quality of life		
QL1	0.99	8.34
QL2	0.80	7.09
QL3	0.38	5.13

4.2 Goodness of Fit Tests

Structural equation modeling (SEM) with LISREL 8.54 (Petroutsatou and Lambropoulos, 2007) was used to test and analyze the hypothesized relationships of the research model. The goodness of fit of a statistical model describes how well it fits a set of observations. Measures of goodness of fit typically summarize the discrepancy between observed values and the values expected under the model in question. Such measures can be used in statistical hypothesis testing. Generally, in this study to assess the goodness of fit of the entire model measures such as $\chi 2/df$, RMR, GFI, AGFI, RMSEA, NFI, NNFI, CFI has been used. The relative chi-square (chi-square/degree of freedom; $\chi 2/df$), standardized root mean square residual (standardized RMSR), goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), normed fit index (NFI), and comparative fit index (CFI) were used as goodness-of-fit measures. Due to the sensitivity of the chi-sqare test to sample size, the relative chi-square was used (it should be 3 o less for an acceptable model (Hair et al., 2006; Bae, 2005), Standardized RMSR should not be greater than 0.10 and GFI, AGFI, NFI, and CFI should exceed 0.90 to be acceptable (Hair et al., 2006; Malaeb, et al., 2000). The rate of each index has come in the table 3.

Table 4: Goodness of fit tests

χ^2 /df	Root Mean Square Residual (RMR)	Goodness of Fit Index (GFI)	Adjusted Goodness of Fit Index	Root Mean Square Error of Approximation	Normed Fit Index (NFI)	Non-Normed Fit Index	Comparative Fit Index (CFI)
1.88	0.047	0.96	0.96	0.066	0.96	0.94	0.93

4.3 Testing Hypotheses

The specification of the model consists of the translation of the verbal hypotheses into a series of equations previously represented in the form of a causal or a path analysis. The path analysis shows the causal relationships among all variables in the system. It should be based upon a priori knowledge of such relationships which are ultimately related to previous experience or theoretical basis (Petroutsatou and Lambropoulos, 2007; Hair et al., 2006). Thus, the path analysis represents the working hypothesis about the causal relationships among variables. Figure 1 shows structural model of the study for confirming hypotheses of the study in standard estimation state (based on factor loading).

Ellipses indicate the research variables (construct) and rectangles show the encompassed concept of each one. Chromatic lines indicate the mentioned hypotheses in the conceptual model of the research. Through the hypothesis examination, only the seventh hypothesis shows a low factor load. (Equal 0.15) In the other hand, the correlation between eM and QL is weak.

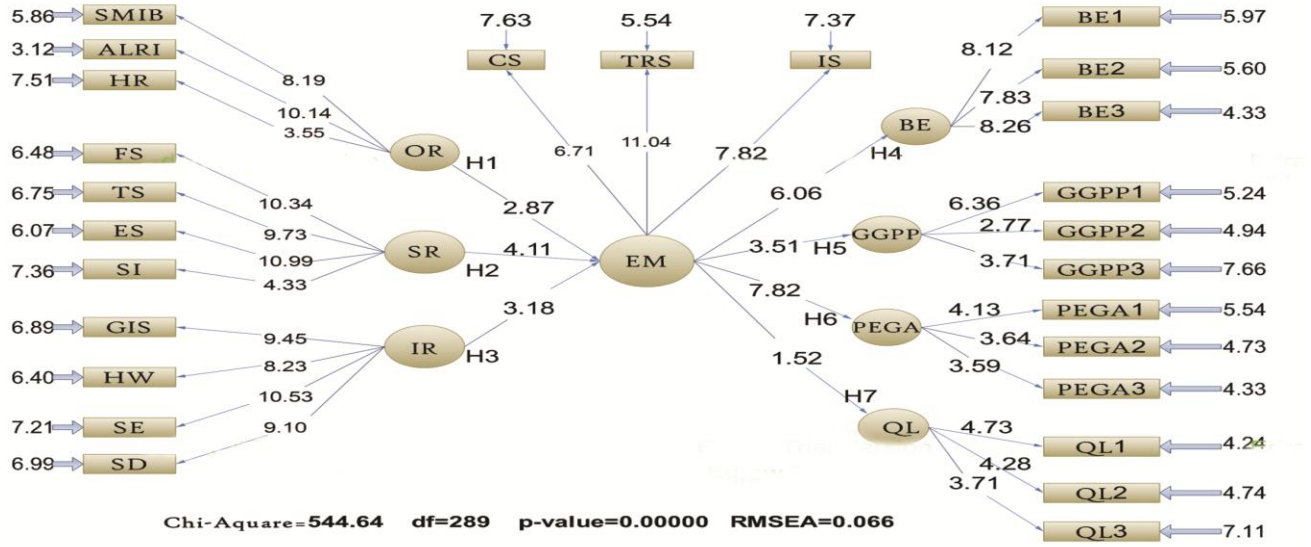

Figure 1: structural model of study for confirming hypotheses in Standard estimates state

Figure 2 also shows significance parameters in hypothesis test. Significance value of seventh hypothesis is into (-1.98, 1.98). Significance value of the other hypotheses is placed out of (-1.98, 1.98) interval, therefore, formed relation is out of the null hypothesis and indicates the ratification of the hypotheses of the research (except the seventh hypothesis).

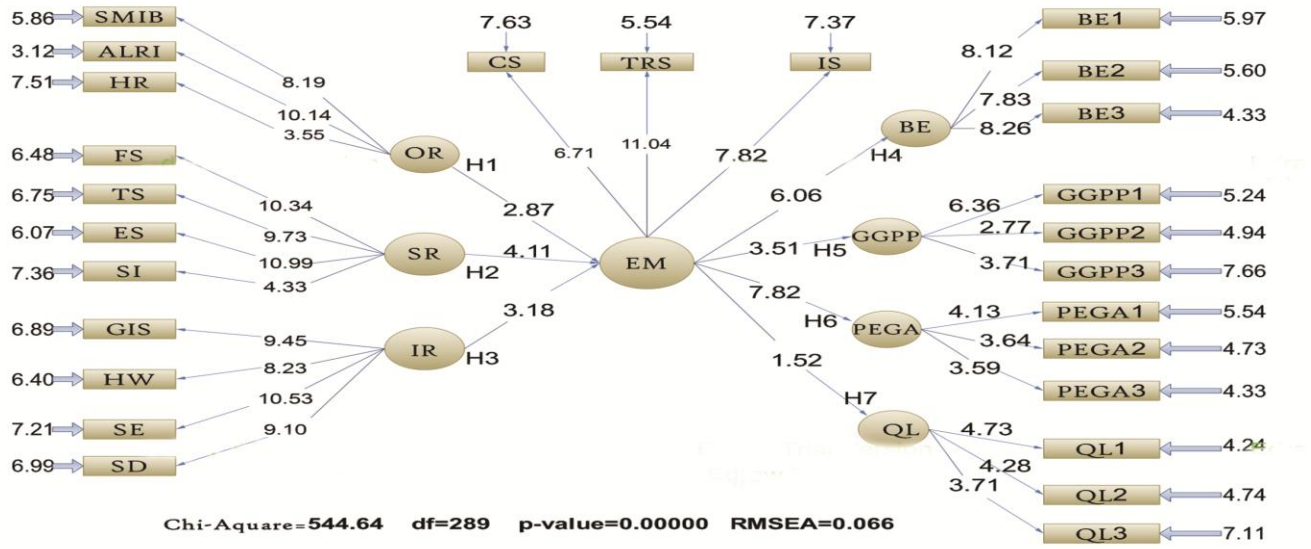

Figure 2: structural model of study for confirming hypotheses in significance parameters state

Based on analysis done using path analysis, results of testing hypotheses of the study can be seen in table 5. Standard estimation test and significance value in confirming or rejecting considered hypotheses (significance of hypotheses) has been used.

Table 8: results of testing the hypotheses of the study using path analysis

Hypotheses	Path		Factor Loading	t-Value	Testing Hypotheses
First	OR	EM	0.77	2.87	Confirmed
Second	SR	EM	0.81	4.11	Confirmed
Third	IR	EM	0.79	3.18	Confirmed
Fourth	EM	CBBE	0.67	6.06	Confirmed
Fifth	EM	SGBP	0.70	3.51	Confirmed
Sixth	EM	IPEGA	0.56	5.96	Confirmed
Seventh	EM	IQL	0.15	1.52	Reject

5. Discussion and Conclusion

In the information age, ICT has advanced greatly in the field of offering services to citizens. The offering of electronic services in e-government and e-municipality, increase the citizen trust on the government and public centers. Along with the strengthening of citizen's view-point about the electronic delivery-service, researches attracted to this subject more than before.

Dada (2006) in a research about investigating on the role of electronic readiness in developed countries has found that organizational readiness (includes Personals, IT Strategies, etc) has a significant role for offering electronic services in public sector organizations. The other examples for this viewpoint can be seen in Scholl (2003 and 2005), Kovacic (2005) studies. The confirmation of the first hypothesis is obvious evidence for the importance of this subject. In examining of the second hypothesis, authors in this research has found, similar to Elwood et al., (2006); Loyarte & Rivera, (2007); Money & Turner, (2004), that the services and system readiness has a meaningful and positive effect on achieving objectives in Zahedan's e-municipality. In other words, cases like launching the municipality portal and website, integration of the existing systems and establishing electronic methods for offering services are some great steps in initiation of the e-municipality project. In examining of the third hypothesis, some researches like Kalu, 2007; Chen and Wellman, 2003; Toots, 2007; Moon, 2002 and Gusev, 2004; had been considered. These studies have investigated on the importance of the infrastructure readiness for initiating of the e-municipality project.

Although in Moon, 2002; Toots, 2007 and Gusev, 2004; researches, the infrastructure readiness considered as the prerequisite for initiating of the e-municipality project, actually in this study the simultaneous attention to three kinds of electronic readiness be introduced as the key factor of successful in the e-municipality project. Anyway, the third hypothesis confirms the previous studies. After investigation on three dimensions of the e-readiness in zahedan's municipality, other four hypotheses are brought up. These have been examined by citizen-based approach in zahedan.

Business environment is one of the factors which have found a new identity after launching the e-municipality. Improving in business environment through electronic services in municipalities and public centers, will provide a more competitive condition in a dynamic economy for businesses to success. Allen (2003) and Acioly (2003) studies confirm this point which is shown in the forth hypothesis properly. Moreover, some factors are considered in the fifth hypothesis such as transparency in public sectors, responsibility to citizens and broadening public participation in decision-making. Roy 2005a; Pavlichev and Garson 2004 had found that today ICT is a milestone for close relationship between citizens and governors (in order to decision-making). The confirmation of the hypothesis is an evidence for this confirm. In investigating on the sixth hypothesis, researchers with consideration to Hart-Teeter 2004; Roy 2005b; Goldsmith and Eggers, 2004 studies have found that the new approaches of public sectors especially municipalities for using ICT in offering services, has leaded to increase efficiency (cost reduction and increasing the speed of service offering) and effectiveness (order-based services and responsibility to all citizens). The sixth hypothesis confirms this. The seventh hypothesis is described the relation between e-municipality and citizen's quality of life. Carbo, 2007 argued that use of ICT will cause to improve the public sectors' performance, if it was along with the protection of human dignity. Furthermore, Cotterill and King, 2007; Nooy, et al., 2005 introduced ICT as a strengthen factor for citizens and government relation (in the form of social network). At last Geiselhart, 2004; Fagan and Fagan, 2001 described the performance of e-governance and related institutes as a reason for improving citizens' quality of life and reduction of classes-gap. On the contrary to other research, this study did not confirm the effect of e-municipality's performance in improving citizens' quality of life.

According to the result of hypothesizes test in this research, these efforts be proposed to zahedan's municipality in order to improve the citizens' quality of life: 1) Improving the cultural level of the society for using of ICT and the users' familiarity to advantages of using the e-services. 2) Attention to broadening training programs in order to make familiar with the method of e-service recipient. 3) Expansion of service institutes throughout the city. 4) Promotion of ICT infrastructures in residential areas. 5) Integration of traditional service-offering systems with web-based ones. 6) Outsourcing a part of services to private sectors in order to minimize the municipality. 7) Customizing services for every citizen.

Achieved results from the model fit test show that load factor and t-value of all formed relations are in an ideal level. Although other models can be obtained based on the existent constructs, actually the proposed model can be considered as one of the best choices. Indexes in the output of LISREL 8.54 software show the conformity of the model. As a result, confidently it can be said that the proposed model in this study has the ability to use for other Iranian cities which have the same cultural, social and political level. According to the mentioned points, it proposes the other municipalities in Iran to test the proposed model in their cities and implement the reform efforts for the e-municipality project.

Note

1. Zahedan, as the center of Sistan and Baluchestan province (in Iran), is the biggest and most important city in this province. Zahedan with an area of about 5570 Hectare and population of about 1 million (estimated in 2010), is located in the southeast of Iran. This metropolis is the focal point of the Iran transportation network and the Pakistan and India (http://www.zahedancity.ir). In order to plan Zahedan more efficiently, it has been divided into 4 districts each having its own special characteristics. These districts are shown in figure 3.

Figure 3: Zahedan city

Each division of Tehran has its own municipality containing several different departments and agencies. Some of these departments are listed here: Dept of IT and Planning, Dept of Urban Planning, Dept of Civil, Dept of Traffic, Dept of Urban Services and Green Area, Dept of Disaster Management and Dept of Properties, etc.

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