Evaluating the Area-based Management Plan Based on the Criteria of Electronic Municipality:
A Case Study of Districts 6 and 15 of Tehran Municipality

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Abstract: - With the advent of the first urban plans since the beginning of the 21th century, a variety of such plans have been provided for different purposes, but their evaluation based on pr oper criteria has been underestimated. In Iranian cities, no ur ban plan has been evaluated based on c orrect indicators. In addition, urban planners have neglected the fact that evaluating urban plans can lead to the effectiveness of urban planning objectives and policies. This research is an applied study with the main objective of evaluating an area-based plan according to e-municipality criteria. Library and field work was done with a descriptive-survey approach to collect data. Then, the significance and the effect of the indicators were analyzed through the path analysis, confirmatory factor analysis and structural equations. The product of the study was a co nceptual model presented with all the corresponding steps. The results of the study indicate the significant effect of implementing the area-based management plan on the selected aspects in district 6 of Tehran. Moreover, the obtained average rating column shows that the plan implementation has had the greatest effect on the aspects of hardware and information and communication technology but the least effect on the socio-cultural aspects. The results also suggest the significant effect of the plan implementation on the selected aspects in districts 15 of Tehran. The average rating column shows the greatest effect of the plan on the aspects of human resources but the least effect on the socio-cultural aspects. It is concluded that the area-based plan should be revised by adding strategies that aim at the increase of temporal efficiency and temporal justice. Also, studies related to dynamic spatial rhythms as w ell as the concepts of efficiency and time justice should be utilized so as to enhance the responsive of managers.

Key-Words: - District, Urban plan, Area-based plan, E-municipality, Friedman test path analysis

1 Introduction

Urban planners have recently paid much attention to the preparation and implementation of certain projects on ne ighborhood and region scales to make urban facilities available to all citizens in urban spaces. One of the most important of these projects is the area-based plan. The main objective of this plan is to achieve fast and easy services and easier access of citizens to municipal services. As a matter of fact, if an area-based plan approved by the municipality is favorable enough and correctly implemented, e-municipality will be effectively established. As for Iran, this plan was operationalized in the municipality of Tehran in 1952. Tehran municipality tried to implement the plan for the efficient management of the newly emerging metropolis of Tehran and the improvement of services given to Tehran residents.

In recent decades, various urban plans have been provided to develop the metropolitan regions of Tehran, but they have not been evaluated by the corresponding organizations. In fact, after an urban plan is implemented, it is better to evaluate it based on proper criteria. It is clear that various types of urban planning have a great effect on di fferent aspects of people's lives, including income, employment, well-being, housing, health, education, social relationships, comfort, environment, personal security, and peace. Therefore, it is necessary to evaluate urban plans based on appropriate indicators.

Urbanization is occurring rapidly throughout the world, and soon the dominant model of human habitation will be urbanization and urban life. The increasing urbanization has many consequences, including an increase in the number of cities, population of cities, urban population of a country or a region, and the physical-spatial surface occupied in cities. In fact, the physical expansion of cities, which is nowadays of attraction for academic research, is gaining increasing importance due to its effects on other aspects of life and its leading cities to stability or instability (Zanganeh Shahraki, 2012:3). These problems associated with the growth of urbanization in Iranian cities, especially in a metropolis like Tehran, have had undesirable consequences.

Municipality is an organization responsible for urban affairs (Faridi *et al*., 2011) as the most important public institution, it has various responsibilities in cities. It has to undertake a variety of urban planning tasks to provide the citizens with various services and to improve urban issues including welfare, security, comfort and pleasure. Improvement of culture, social institutes, political infrastructures, and e-readiness to establish e-municipality are considered as t he most important missions of the municipality (Shahnavazi *et al*., 2012) With regard to its large population (i.e. more than 8.5 million as reported by the Statistics Center of Iran in 2012), Tehran metropolis faces major problems, and those problems are increased every day. This has resulted in seemingly insoluble obstacles in economic, cultural, social and political development.

The urban areas in Tehran are faced with many challenges. The citizens' repeated visits to these areas to receive services, failure to provide some electronic services, lack of necessary facilities for professionals working in these areas, failure to completely achieve the objectives of the plan in the field of e-municipality, early utilization of some electronic systems, semi-electronic status of some services (e.g. issuance of the drilling licenses), allocation of insufficient budget to areas, and nonrule-based performance of managers and experts in some cases are a f ew examples of municipal problems that emerged after the area-based plan was implemented in the organizational structure of the district municipality.

The main objective of this study is to evaluate the area-based plan in districts 6 and 15 of Tehran municipality based on t he criteria of e-municipality. Analyses are conducted to determine and scrutinize the role of the criteria selected by the municipality for managing the area-based plan. Moreover, the relationship between the current pattern of this management and the criteria of the municipality model in the urban areas of districts 6 and 15 are investigated in order to improve the performance of this organization. In this case, the obstacles and problems are identified to provide the best solution with regard to the status quo, and modern and efficient management decisions are encouraged.

2 Concepts of the Area-based Plan

Neighborhood is a spatial concept that has specific boundaries and depends on local conditions. Molinas (2010), who has presented a clear definition of neighborhood, believes that neighborhood management covers a population of 5 to 15 thousand people. Accordinh to him, the per capita cost for individuals in neighborhoods with fewer than 5000

people is increased, and areas with a population of over 15000 a re unlikely to be recognized as a neighborhood. Krupat (1985) considered neighborhood as an area whose familiarity makes people comfortable, and as they move from their homes to the edges of the neighborhood, they have low familiarity with the people of that place.

The Department for Communities and Local Government (2011) reports that area management is a relatively new approach of improving public services. According to it, area management, in the simplest case, is a relationship between local communities and local service providers on the neighborhood scale in order to solve local problems and improve local services. Planning and Development Community (2012) suggested that a district is a p art of a city's structure in which a balance has been established between nature, landscape, routes, passages and sidewalks. Also, balanced forms of transportation have been developed there. Barton (2003) views the concept of 'cohesive local community' as a n etwork of public communities characterized by common identities, interests and theories on a local scale. Acccording to him, this network provides opportunities for mutual knowledge, awareness and support for mutual interactions. Mentioning nine major challenges facing urban management, Van Dijk (2006) refers to issues such as changing the role of government and its levels, forming new legal frameworks as a r esult of decentralization, establishing new organizations and institutions, and emphasizing capacity-building in urban management. In recent decades, urban management has been suggested on microscales for solving urban problems. It is an attempt to provide a desirable and sustainable management system by the use of participatory techniques and through social capacity-building (Sarrafi, 2009). Thus, Tehran municipality concentrated on the area-based plan with the aim of decentralizing the municipality and assigning the administrative affairs urban management to smaller management units. In May 2008, the instruction for enforcement of the area-based plan was communicated to all the districts. Also, based on the data obtained from the Deputy for Coordination and Regions Affairs (2017), another instruction was circularized in January 2009, to deliniate the organizational structure of the districtswith certain job descriptions and organizational charts. The implementation of the region-base policy encompasses three operational sectors (Ghanbari Nasab, 2012) including:

1. Administrative (organizational) sector
2. Public participation sector

3. Private sector
In general, documentation for the area-based plan is as follows:
- Executive instruction of the region, Second edition of the principle of the area-based plan, Deputy for Coordination and Regions Affairs, General Office for Coordination, Monitoring and Surveillance, Technical and Executive Deputy of District Affairs Administration, 2011.
- Tactics and strategies of Tehran's mayor in the area-based conference, 2010.
- Master Plan Circular, 2008.
As shown in Table 1.1, the objectives are generally stated in the 2008 area-based plan circular; however, the two objectives of down-sizing and automation and networking in city and municipality were included in Tehran mayor's strategies in 2010, which provide the ground for e-municipality. Finally, the executive instruction of 2011 has paid special attention to the issue of e-municipality. The important objectives of the instruction include transforming the fulfillment of Tehran municipality duties to meet appropriate and efficient goals of the municipality, developing and strengthening the concept of e-city in all services, eliminating in-person visits of citizens, presenting transparent information, and providing public access to necessary information. Among the general objectives of the area-based plan, automation, developing and strengthening the e-city, networking in the city and municipality, and presenting transparent information have the greatest effect on the realization of e-municipality. Nevertheless, it should be underlined that these objectives are in line with one another, and achieving each requires covering the rest of the plan. In other words, the fulfillment of individual plan objectives does not necessarily lead to the achievement of e-municipality; rather, it is the realization of all the plan objectives that makes e-municipality possible.

3   Methodology
Since this research was intended to be an applied study aiming at the evaluation of an area-based plan according to the e-municipality criteria, library and field data were used with a descriptive-survey approach. For data analysis, the fuzzy Delphi method and experts' opinions were initially used to identify the most important indices. In fact, the confirmed indices and the rejected ones were determined by the fuzzy Delphi method. The study indices were analyzed in terms of significance and effect through confirmatory factor analyses and structural equations. Friedman test was used to rank the study aspects.

These aspects were analyzed at three levels of district, region and the whole range[1].
Two statistical populations were included in the study. The first one consisted of eight experts employed in management positions and working for the Department of Information and Communication Technology of Municipality, each with 5 to 15 years of experience in the field of ICT. The second statistical population included employees working at the specialized units of districts 15 and 6. The sample size of the study was determined based on Krejcie and Morgan Table with a confidence level of 95% and a margin of error of 5% with a population of 700 people. Then, 248 participants were selected for the second statistical population.
The descriptive findings of the study were the statistics pertaining to means, significance levels, degrees of freedom, and standardized coefficients of factor loading, Cronbach's alpha coefficients, path coefficients, AVE, Fornell-Larcker criterion, standard deviations, t-statistic, standard errors, regression coefficients and coefficient matrices. The results obtained on these parameters indicated correlations among the study variables. Friedman test, path analysis, and structural equation modeling were used to answer the questions of the study. Moreover, Sobel test, R^2 criterion, Q^2 criterion, Gof criterion, divergent validity and convergent validity were used for the goodness of fit of the structural model.
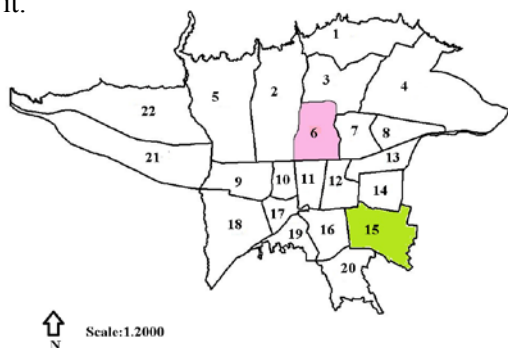
4   The Study Area
The study area included districts 6 and 15 of Tehran municipality (Map 1.2). District 6 is one of the oldest regions of Tehran located in the center of the city. It is geographically located in the central part of Tehran Province and bound by district 3 in the north, district 7 in the east, districts 10, 11 and 12 in the south, and district 2 in the west. The major physical characteristics of district 6 are its location in the center of Tehran city and existence of the most important administrative-service utilities on urban,

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[1]. Friedman test is similar to the repeated measures of ANOVA two-factor variance analysis. It is used when you do not want to investigate the views of a group in several classes and determine the priority of each item based on a significant ranking (or significant tendencies of individuals to each of the variables) based on the opinions of individuals in this group. In other words, Friedman tests null hypothesis, where the K variable always comes from a similar population. For each situation, the K variable is classified from 1 to k. Friedman test is used under the following conditions:
1. A sample group
2. Ordinal, interval, or ratio variable, or abnormal distribution of data (http://www.tahlil-amari.com).

regional, and national scales. The district is bound by three main highways; that is, Modarres, Hemmat and Chamran highways in the east, north and west. It is also flanked by Enghelab Street in the south, which is the longest eastern-western axis in Tehran (Haft Shahr Consulting Engineers, 2002:1). District 6 covers an area of 2144 hectares, which is equal to 3.3% of the total area of the city of Tehran and is divided into six regions and 18 neighborhoods.

District 15 of Tehran municipality is bound by Qasr-e Firouzeh garrison in Afsarieh,as well as Ahang, Khavaran and Shoush streets in the the north, Fadaeian-e Islam in the west, Dolat Abad street, Mount Bibi Shahrbanoo and a cement factory in the south, and the eastern mountains of Tehran and the eastern border of Afsarieh lands in the east. A part of the district is also located within the city boundary. In fact, out of the existing eight areas, six are within the legal boundary of Tehran, and two are within the protected areas of the city. According to this point and considering Firouzeh Palace 2, the area of the district is over 3543.6 he ctares. Tehran's protected area in the domain of the municipal management of this district is 16500 hectares, which is 14.6% of the total protected areas of Tehran. There are more than eight districts in this area six of which inside the city and the other two (i.e. Khavar and Ghiamdasht) in the protected areas. District 15 holds 19 neighborhoods in it.

Map1. The study area included districts 6 and 15 of Tehran municipality in Tehran city that showed with colors.

5 Results and Discussion

The significance and effects of the urban planning indicators were analyzed using the path analysis, confirmatory factor analysis and structural equations. Then, a conceptual model was presented. In order to examine the goodness of fit of the general model that controls both the measurement and structural models, the GoF criterion was calculated as follows:

$$GoF = \sqrt{Communalities \times \overline{R^2}}$$

The average communality was obtained from the average communalities of the hidden social, cultural, economic, geographical, spatial, and e-municipality variables. It was found to be 0.519 (Table 1).

Endogenous variables	Communalities
Social & cultural	0.429
Economical	0.516
Geographical & spatial	0.577
E-municipality	0.435

Table 1. Communality of the first-order hidden variables. Source: Findings of the study, 2017

The R^2-values of all the hidden endogenous variables of the model, ranging from the first to the second order, were used to calculate $\overline{R^2}$, and their average values were calculated too. The R^2 values of t he variables are presented in the table below. The average of the $\overline{R^2}$ values was 0.552, and the GoF criterion value was obtained as follows:

$$GoF = \sqrt{Communalities \times \overline{R^2}} = \sqrt{0.489 \times 0.552} = 0.519$$

With regard to the three values of 0.01, 0.25, and 0.36 as weak, moderate and strong values for GoF, the GoF of 0.519 indicates a strong overall goodness of fit of the model.

After examining the goodness of fit of the measurement model, structural model and general model, the study hypotheses were put to tests of verification. The following is the disscusion of the findings based on the data analysis algorithm in the SPLS method.

Hypothesis 1: Human resources have a significant effect on e-municipality.

The significant coefficient of 2.81 belonging to the path between the two hidden variables indicates that human resources have a significant effect on e-municipality. Moreover, the value of the standardized path coefficient between the two variables (0.056) shows that the variable of human resources with a coefficient of 27% has a positive effect on e-municipality. Therefore, considering the fact that t-statistic is greater than 1.96 and the path coefficient is positive, it can be claimed that human resources have a significant effect on e-municipality at the confidence level of 95%.

Hypothesis 1	Path coefficient	T-statistic	Result
Human resources have a significant effect on e-municipality	2.81	0.056	Confirmed

Table 2. Analysis of the hypothesis of the effect of human resources on e-municipality. Source: Research findings, 2017

Hypothesis 2: Socio-cultural indicators have a significant effect on e-municipality.

The significant coefficient of 8.54 belonging to the path between the two hidden variables indicates that socio-cultural indicators have a significant effect on e-municipality. Moreover, the value of the standardized path coefficient between the two variables (0.273) demonstrates that socio-cultural indicators with a coefficient of 27% have a positive effect on the variable of e-municipality. Therefore, considering the fact that t-statistic is greater than 1.96, it can be said that socio-cultural indicators significantly affect e-municipality at the confidence level of 95%.

Hypothesis 2	Path coefficient	T-statistic	Result
Socio-cultural indicators have a significant effect on e-municipality	0.273	8.54	Confirmed

Table 3. Analysis of the hypothesis of the effect of socio-cultural indicators on e-municipality. Source: Research findings, 2017

Hypothesis 3: Economic indicator has a significant effect on e-municipality.

The significant coefficient of 0.251 belonging to the path between the two hidden variables suggests that the economic indicator does not have a significant effect on e-municipality. Moreover, the value of the standardized path coefficient between the two variables (0.008) indicates that the economic indicator with a coefficient of 0.8% affects the variable of national security. Therefore, considering the fact that t-statistic is greater than 1.96, the economic indicator can be said to have no significant effect on e-municipality at the confidence level of 95%.

Hypothesis 3	Path coefficient	T-statistic	Result
Economic indicator has a significant effect on e-municipality	0.008	0.251	Rejected

Table 4. Analysis of the hypothesis of the role of the economic indicator on e-municipality. Source: Research findings, 2017

Hypothesis 4: Hardware indicator has a significant effect on e-municipality.

The significant coefficient of 11.652 belonging to the path between the two hidden variables indicates that the hardware indicator has a significant effect on e-municipality. In addition, the value of the standardized path coefficient between the two variables (0.317) shows that the hardware indicator with a coefficient of 32% has a positive effect on the variable of e-municipality. Therefore, considering the fact that t-statistic is greater than 1.96, the hardware indicator can be said to have a significant effect on e-municipality at the confidence level of 95%.

Hypothesis 4	Path coefficient	T-statistic	Result
Hardware indicator has a significant effect on e-municipality	0.317	11.65	Confirmed

Table 5. Analysis of the hypothesis of the role of the hardware indicator on e-municipality. Source: Research findings, 2017

Hypothesis 5: Software indicator has a significant effect on e-municipality.

The significant coefficient of 6.30 belonging to the path between the two hidden variables suggests that the software indicator has a significant effect on e-municipality. Moreover, the value of the standardized path coefficient between the two variables (0.218) indicates that the software indicator with a coefficient of 22% has a positive effect on the variable of e-municipality. Therefore, considering the fact that t-statistic is greater than 1.96, it can be claimed that this indicator has a significant effect on e-municipality at the confidence level of 95%.

Hypothesis 4	Path coefficient	T-statistic	Result
Software indicator has a significant effect on e-municipality	0.218	6.30	Confirmed

Table 6. Analysis of the hypothesis of the role of the software indicator on e-municipality. Source: Research findings, 2017

Hypothesis 6: Geographical and spatial indicators have a significant effect on e-municipality.

The significant coefficient of 6.12 belonging to the path between the two hidden variables shows that geographical and spatial indicators have a significant effect on e-municipality. In addition, the value of the standardized path coefficient between the two variables (0.237) suggests that geographical and spatial indicators with a coefficient of 24% have a positive effect on the variable of e-municipality. Therefore, considering the fact that t-statistic is greater than 1.96, geographical and spatial indicators can be said to have a significant effect on e-municipality at the confidence level of 95%.

Hypothesis 4	Path coefficient	T-statistic	Result
Geographical and spatial indicators have a significant effect on e-municipality	0.237	6.12	Confirmed

Table 7. Analysis of the hypothesis of the role of geographical and spatial indicators on e-municipality. Source: Research findings, 2017

Hypothesis 7: Social indicator mediates the effect of territorial planning on national security. The Sobel test is used to examine the significance of a mediation effect. Since this test does not exist directly on any software, online websites are used to calculate it after factor loading is calculated. The test has, however, been added to SPSS 23. This section explains the Soble test and provides the results of hypothesis-testing.

To test the effect of a mediating variable, the Sobel test is used to measure the significance of that effect in the relationship between two other variables. A Z-value is obtained by the Sobel test through the following formula. If this value is greater than 1.96,

the mediating effect of a variable can be confirmed at 95%.

$$z-value = \frac{a \times b}{\sqrt{(b^2 \times sa^2) + (a^2 \times sb^2) + (sa^2 \times sb^2)}}$$

a = the path coefficient value between independent and mediating variables
b = the path coefficient value between mediating and dependent variables
Sa = standard error of the path between an independent variable and a mediating variable
Sb = standard error of the path between mediating and dependent variables

Table 8 shows the results of the Sobel test for this hypothesis.

Predictor variable	Path coefficient	Standard error	t
Human resources	0.673	0.038	17.112
Socio-cultural	0.273	0.042	8.546

Table 8. Human resources and socio-cultural regression coefficients with e-municipality. Source: Research findings, 2017

Test statistic	Standard error	p-value
6.1020	0.0310	0.00

Table 9. Results of the Sobel test. Source: Research findings, 2017

Using regression coefficients, as in Table 1.10, the Sobel test indicated that the socio-cultural indicator ($p < 0.01$, $t = 6.1020$) mediates the effect of human resources on e-municipality and plays a facilitating role between these two variables.

Hypothesis 8: Geographic and spatial indicators mediate the effect of software on e-municipality.

Hypothesis 9: Economic indicator mediates the effect of human resources on e-municipality.

Using regression coefficients, as in Table 1.11, the Sobel test indicated that the economic indicator ($p < 0.01$, $t = infinity$) neither mediates the effect of human resources on e-municipality nor plays a facilitating role between these two variables.

Predictor variable	Path coefficient	Standard error	t
Human resources	0.614	0.040	15.56
Economic	0.008	0.035	0.251

Table 10. Human resources and economic regression coefficients with e-municipality.
Source: Research findings, 2017

Test statistic	Standard error	p-value
6.1020	0.0310	infinity

Table 11. Results of the Sobel test. Source: Research findings, 2017

Hypothesis 10: Geographic and spatial indicators mediate the effect of software on e-municipality. Using regression coefficients, as in Table 1.12, the Sobel test indicated that geographic and spatial indicators ($p < 0.01$, $t = 5.10$) mediate the effect of software on e-municipality and play a facilitating role between these two variables.

Predictor variable	Path coefficient	Standard error	t
Software	0.657	0.036	6.360
Geographic and spatial	0.237	0.041	6.112

Table 12. Geographic and spatial and software regression coefficients with e-municipality. Source: Research findings, 2017

Test statistic	Standard error	p-value
5.510	0.028	0.00

Table 13. Results of the Sobel test. Source: Research findings, 2017

Path analysis was done to present the model of the study. It could only be performed on the observed variables. In this study, seven latent variables were studied, including human resources management, hardware, software, social and cultural, economic, geographic and spatial, and e-municipality variables. The average of the observed variables was determined to analyze the latent variables. SPLS was used to perform the path analysis and the structural equations. According to the review of the literature

and experts' opinions, a conceptual model was developed to evaluate the role of area-based management in e-municipality (Figure. 1).
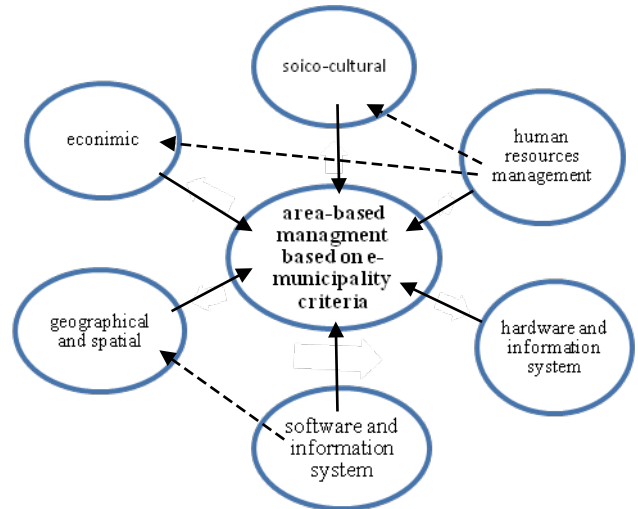

Fig.1. Conceptual model of the path analysis to measure the relationship of the variables

The analytical model of the study was designed by SPLS, and the factor loading of the observed variables (the questionnaire items) of the model was calculated. Figure.2 shows the factor loading:
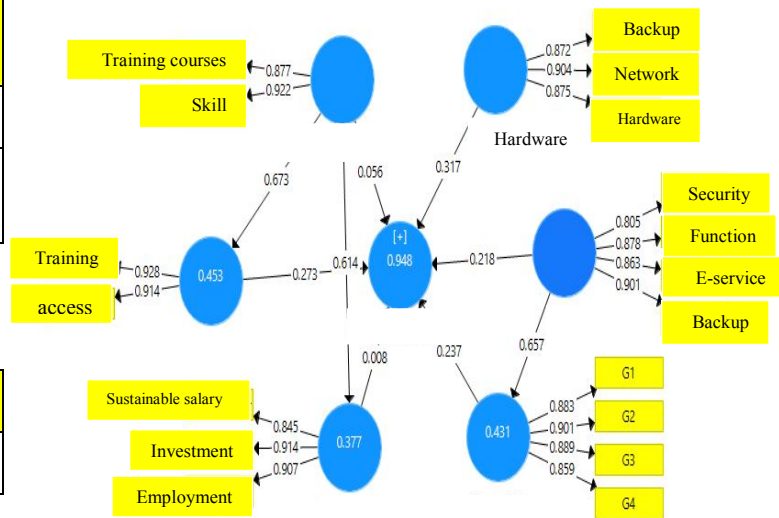

Fig.2. The model of the study with standardized coefficients of factor loading (authors)

The criterion for the appropriate coefficient of factor loading is 0.55 (Holand, 1999). According to Figure 2, all the questionnaire items had a factor loading of over 0.55. The analysis suggested the extent to which the observable variables (questionnaire items) were related to the hardware, software, human resources, socio-cultural, economic, and geographic latent variables. The results indicated that there was a significant relationship between the items and the

Leila Aghaei, Hamidreza Varesi,
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variables, which confirms the validity of the model. Finally, the effect of the implementation of the area-based management plan was explored in districts 6 and 15 of Tehran municipality. The Chi-square of 28.243 shows the significant effect (sig. = 0.000) of the implementation of the area-based management plan on the selected aspects of the study in districts 6 and 15 of Tehran. To evaluate the plan, Friedman test was used. The analysis level was initially adopted for both districts, and then the results were separated according in terms of areas. The effect of the implementation of the area-based management plan was generally studied first in district 6 of Tehran.

Aspects	Mean	Ranking	No.	Chi-square	Degree of freedom	Sig.
Hardware and information and communications technology	3.99	1				
Software and information system	3.75	2				
Socio-cultural	3.49	3	15	20.107	5	0.001
Economic	2.85	4				
Human resources	3.57	5				
Geographic and spatial	3.35	6				

Table 14. The result of Friedman test for the importance and the effect of implementing the area-based management plan on the selected aspects of the study in district 6 of Tehran municipality. Source: Findings of the study, 2017

As shown in Table 14, the Chi-square (107.20) shows the significant effect (sig. = 0.000) of the implementing the plan on the selected aspects of the study in district 6 of Tehran. Moreover, the average rating column shows that implementation of the plan in this district has had the greatest effect on the aspects of hardware and information and communications technology but the least effect on the socio-cultural aspects.

Also, as shown in Table 1.16, the Chi-square (580.19) shows the significant effect (sig. = 0.000) of implementing the plan on the selected aspects of the study in districts 15 of Tehran. Moreover, the average rating column shows the plan implementation in district 15 has had the greatest effect on the aspects of human resources but the least effect on the socio-cultural aspects.

Aspects	Mean	Ranking	No.	Chi-square	Degree of freedom	Sig.
Hardware and information and communications technology	3.76	1				
Software and information system	3.54	2				
Socio-cultural	2.98	3	15	19.580	5	0.001
Economic	3.34	4				
Human resources	3.86	5				
Geographic and spatial	3.52	6				

Table 15. The result of Friedman test for the importance and the effect of implementing the area-based management plan on the selected aspects of the study in district 15 of Tehran municipality. Source: Findings of the study, 2017

Considering the effects of the plan implementation on the selected aspects of the study in the areas of district 6, one can refer to the greatest effect on human resources, hardware and information and communications technology, hardware and information technology, geographic and spatial aspects, hardware and information technology, socio-cultural aspects, hardware and information technology, software and information systems, and human resources in areas 1, 2, 3, 4, 5, a nd 6 respectively. Among these areas, 1 and 6 received the greatest effect of the plan on human resources (Table 16).

Area 1 District 6	aspects	mean	ranking	Area2 District 6	aspects	mean	ranking	Area3 District 6	aspects	mean	ranking
	communications technology	3.35	4		communications technology	4.7	1		communications technology	4.5	1
	software and information systems	4.23	1		software and information systems	3.73	2		software and information systems	3.6	3
	socio-cultural	3.31	5		socio-cultural	3.43	3		socio-cultural	3.27	4
	economic	2.3	6		economic	2.87	5		economic	2.67	6
	human resources	4.2	2		human resources	3.17	4		human resources	3.2	5
	geographic and spatial	3.6	3		geographic and spatial	3.73	2		geographic and spatial	3.77	2

Area4 District 6	aspects	mean	ranking	Area5 District 6	aspects	mean	ranking	Area6 District 6	aspects	mean	ranking
	communications technology	4.25	1		communications technology	4.2	1		communications technology	3.56	4
	software and information systems	3.25	5		software and information systems	3.77	2		software and information systems	3.63	3
	socio-cultural	3.83	2		socio-cultural	3.63	3		socio-cultural	3.84	2
	economic	2.83	6		economic	3.07	5		economic	3.31	5
	human resources	3.5	3		human resources	3.4	4		human resources	3.88	1
	geographic and spatial	3.33	4		geographic and spatial	2.93	6		geographic and spatial	2.78	6

Table 16. The result of Friedman test for the importance and the effect of implementing the area-based management plan on the selected aspects of the study in the areas of district 6 of Tehran municipality. Source: Findings of the study, 2017

Area1 District15	aspects	mean	ranking	Area2 District15	aspects	mean	ranking	Area3 District15	aspects	mean	ranking
	communications technology	3.17	5		communications technology	4	1		communications technology	3.87	1
	software and information systems	3.77	2		software and information systems	3.63	4		software and information systems	3.60	2
	socio-cultural	3.50	4		socio-cultural	2.77	6		socio-cultural	3.37	5
	economic	3.87	1		economic	2.83	5		economic	3.10	6
	human resources	3.60	3		human resources	3.90	2		human resources	3.60	2
	geographic and spatial	3.10	6		geographic and spatial	3.87	3		geographic and spatial	3.50	4
Area4 District15	aspects	mean	ranking	Area5 District15	aspects	mean	ranking	Area6 District15	aspects	3.87	1
	communications technology	3.53	4		communications technology	3.34	4		communications technology	4.13	2
	software and information systems	3.70	3		software and information systems	3.16	5		software and information systems	3.47	3
	socio-cultural	2.57	6		socio-cultural	2.88	6		socio-cultural	3	5
	economic	3.37	5		economic	3.50	3		economic	2.83	6
	human resources	3.83	2		human resources	4.19	1		human resources	4.40	1
	geographic and spatial	4	1		geographic and spatial	3.94	2		geographic and spatial	3.17	4
Area7 District15	aspects	mean	ranking	Area8 District15	aspects	mean	ranking				
	communications technology	4.37	1		communications technology	3.77	3				
	software and information systems	3.13	5		software and information systems	3.90	1				
	socio-cultural	2.87	6		socio-cultural	2.87	6				
	economic	3.77	2		economic	3.47	4				
	human resources	3.50	3		human resources	3.80	2				
	geographic and spatial	3.37	4		geographic and spatial	3.20	5				

Table 17. The result of Friedman test for the importance and the effect of implementing the area-based management plan on the selected aspects of the study in the areas of district 15 of Tehran municipality. Source: Findings of the study, 2017

Moreover, implementation of the area-based management plan in the areas of district 15 has had the greatest effect on the economic aspects in area 1, hardware and information and communications technology as w ell as human resources in area 2, hardware and information and communications technology as w ell as human resources in area 3, geographic and spatial as well as human resources in

area 4, human resources as well as geographic and spatial aspects in area 5, human resources as well as hardware and information and communications technology in area 6, hardware and information and communications technology in area 7, and aspects of human resources in area 8. In the areas of the district municipalities, except for areas 1 a nd 7, the plan implementation had the greatest effect on hum an resources (Table 18).

6 Conclusion and Implications

The analytic study of such variables as human, social, cultural, hardware, software aspects as w ell as geographic and spatial resources indicated that they would be of effect once an area-based management plan was implemented based on e-municipality criteria. There were, indeed, positive and significant relationships found between them. However, there was no significant relationship in the case of the economic aspect. Since one of the most important objectives of urban plans is to provide high-quality services to citizens, it is recommended to establish continual appointments between managers and citizens so as for managers to get acquainted with citizens' views on the improvement of affairs. There should also be continual and effective communication with suppliers and other stakeholders and practitioners to promote the level of inter-sectorial, intra-sectorial and cross-sectorial collaboration in the respective activities of the private sector. The mayors in urban districts should be authorized to provide appropriate solutions to overcome obstacles of the plan implementation by adopting overall policies. They should also exchange information about organizational policies through oral and written communication with employees so as to offer better electronic services. Whatever policies made and adopted should be board-posted on office walls to encourage people to use the Internet for receiving services.

References:
[1] Barton, Hugh; Guise, Richard, and Marcus Grant, *Shaping Neighborhoods: A Guide for Health, Sustainability and Vitality, Routledge press*, USA, 2002.
[2] Center for Statistics of Iran, *Population and Housing Census of Tehran City*, 2016.
[3] Consulting Engineers of plan and Preparation, *Population Capacity in District 15 in Detailed Planning,* Tehran Municipality: Deputy of Urban Planning and Architecture of the General Office of Urban Planning, 2008.
[4] Consulting Engineers of Naghsh-e Jahan Pars, *Pattern of development of the district; Development pattern and detailed plan of the 6th district of Tehran*, 2016.
[5] Dept. for Communities and Local Government Factsheet 6, *Neighborhood Management*, 2011.
[6] Dept. for Community planning and development, Factsheet 3, *Urban and regional planning*, 2012.
[7] Deputy of Coordination and Affairs of the Districts of Tehran Municipality, *Area Administrative Instructions: 2nd, area-based criterion, General Directorate of Coordination, Monitoring and Follow-up*, 2017.
[8] Faridi, M., & Asadollah, S, Electronic municipality as an alternative, complement, or development of traditional municipality, *International Conference on Computer Communication and Management*, Vol.23, No 5, 2011, pp. 611-615.
[9] Ghanbari Nasab, A, *Study and pathology of the area-based design in the district 6 from 2007 and presentation of strategy* in Tehran, Center for Study and Planning of Tehran, 2012.
[10] Haft Shahr Consulting Engineers, *Physical-Functional Report of the district 6 of Tehran Municipality (First Stage, 2nd Ed.), Tehran*, Municipality of the 6th District of Tehran, 2002.
[11] Kruput, E, *people cities*, Cambridge University Press, 1985.
[12] Mitchell, G.O, *A new Dictionary of sociology Routledge and keyantax1*, LTD,1989.
[13] Molinas, j., The impact of inequality, gender, external assistance and social capital on local – level cooperation world development, *Elsevier science* ltd, Vol.26, No.9, 2010, pp. 65-86.
[14] Municipality of Tehran, *Tehran Municipality Annual Report*, Tehran Municipality Reports, 2007.
[15] Sarrafi, M., *The Concept and basis of challenges of urban management.*Journal of Urban Management, 2. Publisher: Tehran Municipality, 2009.
[16] Shahnavazi, M., & Shahnavazi, Y. E-Municipality;New Step in Providing Electronic Services in Iran, *International Journal of Business & Social Science*, Vol.31,No. 15, 2012, pp. 141-154.
[17] Tehran Provincial Governorate, *Deputy of Planning*, Office of Statistics and Information, Tehran Statistical Yearbook, 2016.
[18] Van Dijk, M, *Managing cities in developing countries: the theory and practice of urban management*, Edward Elgar publishing, UK, 2006.
[19] Zanganeh Shahraki, S, *Management of physical development of city with an urban intelligent growth approach, 1th Ed.* Tehran University Press, 2016.
[20] http://www.tahlil-amari.com
[21] http: //www.tehran.iri
[22] http: //www.tehran.ir
[23] http://tmicto.tehran.ir