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Prioritization of open governance components in municipalities

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Abstract

The introduction of the open governance approach in urban management during the last decade, the impact of all influential urban elements on city management, with all the mechanisms that move towards the excellence of the city and citizens, has been seriously emphasized. Therefore, this article has been investigated to identify and rank the components of open governance in municipalities. In the current research, a field study was conducted by designing a questionnaire and distributing it among 205 academic experts and experts in the field of open governance at the level of the municipality of Tehran. After collecting the data, they were analyzed using Smart-PLS 2 and Super-Decision software. The results of the research showed that the conceptual model obtained from the Smart-PLS2 software has good validity and reliability, and the results of the ranking using the network analysis process showed the open service factor with a relative weight of 0.667 It is the most important and the open process factor with a relative weight of 0.166 In the second priority and the open data factor with a relative weight of 0.156 It is in the third priority.

1. Introduction

The process of increasing the urbanization population has doubled the attention to the issue of governance, policy-making and

urban planning [11]. In this regard, cities need management that can improve the quality of life of urban residents to attract the attention of the public and provide

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services to the people [16]. On the other hand, municipalities are faced with issues such as environmental management, resource management, urban crises, and other such issues that the use of old methods in governance has not been the answer to solving these issues and crises [19]. Therefore, the need for creativity in governance practices has been felt more than before [24]. Recognizing this, over the past few decades, an increasing number of countries around the world have placed significant emphasis on open governance, this could be because of the benefits and potential value of open governance [31]. In this article, a new and progressive strategic open governance is presented around how governments communicate with people through communication technologies and the use of innovative methods. Defined, this approach allows governments to request participation and cooperation from citizens if necessary, and the final result of this work will be the creation of a powerful and effective democracy [27]. From a political and social perspective, one of the prominent benefits of open governance is increased government transparency by allowing public access to important data such as government spending and contracts for closer scrutiny ([20]; [30]; [9]). From a social perspective, open governance stimulates technology enthusiasts to develop innovation from many types of existing space, such as traffic, weather forecasting, and consumer price index, among others [25]. On the other hand, the inadequacy of the traditional model of statesmen and the possible need for a new model of governance in the digital era has been confirmed by several researchers (for example, [3]; [6]; [15]; [1]; [7]). In the digital age, the newest paradigm centered on governance is "open government". The emerging paradigm of open government is not synonymous with "e-government" [5]. Open government is described as the horizon of governance transparency and

citizens' voice in public policymaking processes [5]. In the sixth section of the 6th 5-year law on the development of the country (1400-1396), articles 27, 28 and 29 deal with the issue of the administrative system, transparency and the fight against corruption. In Iran, public institutions are the front line of communication between the people and the government, with the most focus on municipalities and city councils. Dilapidated fabric, polluted air, lack of sustainable urban income plan, density sales policy, garbage and waste problems, crisis management and lack of coordination with parallel executive and policy-making bodies are among the most important problems of urban management. In other words, it is not possible to achieve the advantages of service without solving the major problems mentioned. The only way out of the current situation is the participation of citizens through gaining the trust of citizens by applying transparency and justice. Open governance strategy can be used for a wide range of activities, including transparency about human resources, organizational structures, asset registration of officials, contracting and projects, financial affairs, anti-corruption policies and facilitating public participation in the decision-making process. Therefore, by using the knowledge of managers and experts of municipalities, including Tehran municipality as the capital of the country, in the field of applying the principles of open government based on the three components of information transparency, public participation and accountability, using information and communication technology in Iran can be as To play a role in making the council efficient and strengthening the trust in the institution of the council and the municipality. However the problem that exists is that the managers and officials of the municipalities do not have a correct and comprehensive view of this concept, and open governance has not been able to be effectively implemented in the

municipalities of the country. This lack of success can be caused by the lack of a proper understanding of this concept and the managers' lack of familiarity with this strategy. Therefore, we need to examine these components in the country's municipalities. In this regard, the main question of the research is raised as follows: how is the prioritization of the open governance model in municipalities?

2. research literature:

Open governance is a recent public management reform process that aims to create transparent and participatory governance structures that are different from market or bureaucracy-oriented principles [8]. which leads to a change in the conceptualization of open government in various social fields and advanced technologies. This concept was first used to emphasize the importance of openness and dissemination of information after the Second World War, when the accountability of governments was due to the need to mobilize resources [26]. According to [29] the meaning of "open governance" depends on one's perspective. Nevertheless, it is widely accepted that open governance makes it easier for people to access government-related data and participate in decision-making [17]. open governance is a policy that aims to change the way information flows between the government and its constituents, enabling people to engage with that information, change it, and reuse it [12]. cultural and structural barriers may be recognized from the government's point of view. Cultural barriers can include a closed government culture, fear of misunderstanding, and concern about security risks [16]. structural barriers also include lack of will or political leadership, lack of standardization in open data policies, lack of priority in the organization, and lack of resources to disseminate information [16]. "Open data" refers to the creation of data repositories

based on government-created and collected information that may be easily and freely accessed by individuals, businesses, and non-governmental organizations [12]. According to [13] theory, open data and access to information provide a tool for citizen engagement and participation, which in turn improves accountability. According to [22], to accelerate the use of government data by citizens, it is necessary to create an infrastructure that can manage open government big data and better social mechanisms.

2.1: Factors Affecting Open Governance Innovation

Government organizations around the world have initiated open government programs to make their data and related information accessible to the public [14]. Furthermore, governments, development organizations and organizations and citizens are increasingly linking governance, financial and aid resources to creating a more open and transparent government [4]. classification of variables affecting the adoption of open government [17]:

- technology dimension: This technical component is described as a technological feature that depends on choice or adoption.
- Organizational dimension: this characteristic to the organization or internal procedure that affects the choice of admission.
- Managerial dimension: This refers to the attitude of managers in accepting an organization.
- individual dimension: According to previous studies, individual characteristics such as having human capital, competence, knowledge and experience are very important in technology adoption.
- Environmental dimension: surrounding environment and

external forces that deal with acceptance.

2-2: Challenges of Open Government Adoption

According to [20], the difficulty of open government data as an innovation is finding out how to scale the availability of open data. open government is expected to provide social and economic benefits through public use of government information [18]. However, as open government matures, it may face more administrative and technological difficulties. According to [12], the obstacles to the adoption of open government include:

- Lack of financial resources
- Insufficient time
- Nonfunctional websites Restrictive
- regulations and Lack of information available.

The data release process is fraught with problems. such as lack of data openness due to organizational capabilities and culture, legal and regulatory issues, especially those related to privacy and security, technical problems such as lack of support infrastructure due to fragmentation, lack of knowledge and skills among public administrators involved in All stages of the data generation process [12].

2-3: Open governance models

Open governance models in the research of [28], a model for measuring open government and its applications from the perspective of open data and using the United States open data portal are presented. For measurement, a conceptual model has been used that describes open government through data openness, transparency, participation and collaboration. One of the components of

this model is open data, which must have the characteristics of being complete, original, timely, available, processable by machine, non-discriminatory, non-proprietary and license-free. Researchers believe that transparency is one of the vital components of open government and consider it in two forms: data transparency and government transparency. Government transparency means transparency in the government's operations, procedures and duties, which is considered a tool to achieve accountability. The meaning of data transparency is the transparency of the data provided by the government, and it is the assurance of being known, understandable, accessible and open to everyone. Participation helps citizens to participate in democratic processes. Research shows that the interaction between the government and citizens is the main pillar of democratic sustainability. Using social media and other simple interactive methods to communicate with citizens helps them share their ideas and provide valuable feedback on various issues and be involved in policy-making processes. Collaboration, as another component of open government, helps make more responsive decisions based on collaboration and feedback. There are different types of cooperation, which include: cooperation within the government, cooperation between the government and non-profit organizations and the private sector, and cooperation between the government and citizens. The result of this research has led to two indicators: one is the openness of e-government and the other is maturity level. This measure represents the progress of the government over time, efficiency in recognizing and implementing new concepts, and the willingness of the government to recognize and adopt innovative ideas [28].

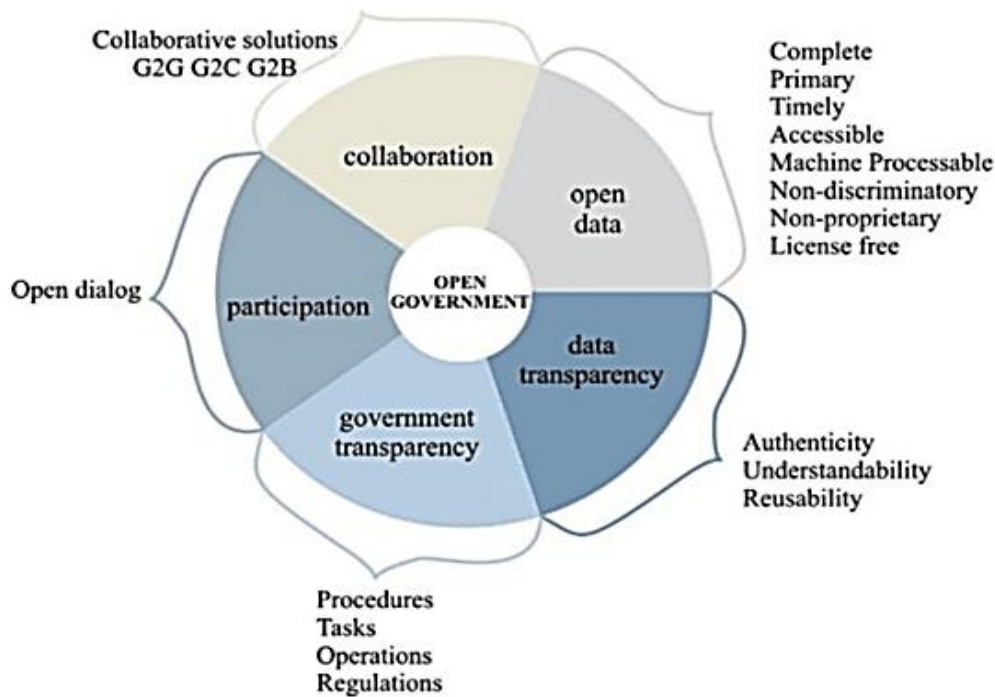


Fig. 1: Conceptual model of open governance (source:[24])

Table 1: Open Governance models

Title of the model	Source	Features of the model
Open Government Maturity Model Engaging civil society through social media	[13]	<ul style="list-style-type: none"> Objective: To evaluate open government and guide in this field The focus of the model is on transparent, interactive and cooperation-based participation of the general public. Five main stages of initial conditions (level 1), information transparency (level 2), open participation (level 3), open collaboration (level 4) and inclusive engagement (level 5)
Open state flow model	[2]	<p>The visual model of the open government process and determining the overall flow of the open government includes:</p> <ul style="list-style-type: none"> Transparency participation Cooperation
Open Government Evaluation Model	[23]	<ul style="list-style-type: none"> A model for measuring the degree of openness of governments and helping to adopt appropriate strategies to determine the path of progress. The 4 main pillars of open government are in the circle closer to the core and the 4 components are placed in the outer circle to support these 4 main pillars. Main pillars:[24] 4, open data, institutionalism and social technical theory and networking. External components: open data, legal framework, collaboration and co-production.

3. Research methodology

The current research is applied research in terms of its purpose. Because the use of research results affects open governance in

municipalities, and based on the nature and method of data collection, in terms of the possibility of controlling variables, it is a non-experimental type of research, and in

the category of non-experimental research, it is a descriptive-correlation type of research. Because it examines the relationship between variables. Also, due to the collection of data at a point in time, it is a type of cross-sectional research. The present research is based on the fact that by using scientific research methods, after identifying the research problem and formulating hypotheses, it collects the information needed to test the hypotheses and then Conducts appropriate tests and analyzes the tests. The method of conducting survey research is a questionnaire, which is one of the methods of data collection. The questionnaire is designed in two Likert scales to formulate and validate the model and pairwise comparisons to rank the variables. The statistical population of the research in the quantitative part includes all managers of Tehran municipalities, whose number is considered to be around 440 people. In this research, Cochran's formula was used to check the sample size and the number of 205 people was obtained. Also, in this research, stratified random sampling was used to select statistical samples.

$$n = \frac{z^2 pq}{1 + \frac{1}{n} \left(\frac{z^2 pq}{d^2 - 1} \right)} \quad 205 = \frac{3.8416^2 * 0.5 * 0.5}{1 + \frac{1}{440} \left(\frac{3.8416^2 * 0.5 * 0.5}{0.05^2 - 1} \right)}$$

The research questionnaire consists of 23 items with a five-point Likert scale, which was developed by reviewing the theoretical and practical bases as well as the results of exploratory interviews (with open and central coding of exploratory interview texts). The specifications of the questionnaire can be seen in Table 2:

Table 2: Information related to the research questionnaire

Dimensions	Component	Indicator	index number
Open Governance	Open Data	6 items	1-6
	Open Service	6 items	7-12
	Open Process	11 items	13-23

To ensure the validity of the instrument in the qualitative part of the research and to ensure the accuracy of the findings from the researcher's point of view, valuable opinions of professors familiar with this field and university experts who were experts and knowledgeable in this field were used. Also, at the same time, the participants were helped in analyzing and interpreting the data. To check the reliability, in this research, the reliability coefficient between the done coding was 79%, which indicates its acceptability. Smart-PLS and Super Decision software packages were used to analyze the data, the results of which are analyzed below.

4. Results and discussion

4-1: Model testing using linear structured relationships

At this stage, to evaluate the conceptual model of the research and also to ascertain the existence or non-existence of a causal relationship between the research variables and to check the fit of the observed data with the conceptual model of the research, the research model was also tested using the structural equation model. The results of the model test are reflected in the graph.

4-2: Validity, reliability and fit of the model

Cronbach's alpha and composite reliability were used to measure reliability, convergent validity was used to measure validity, and GOF index was used to measure model fit.

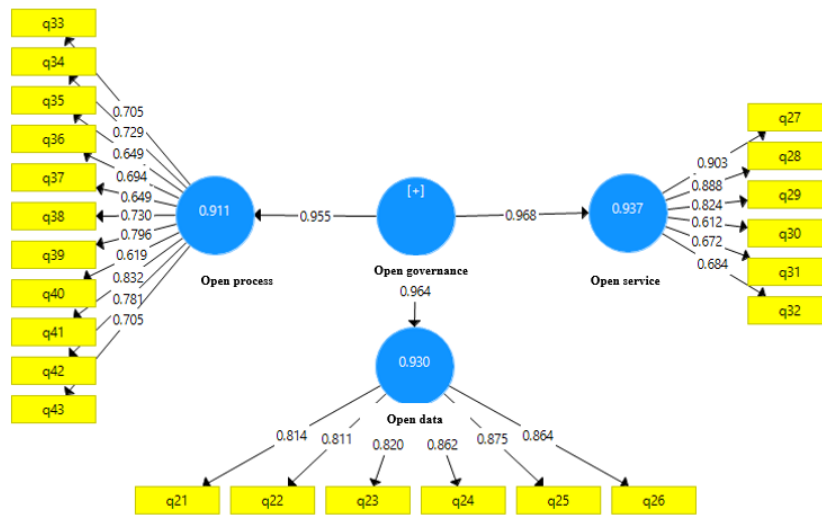


Fig. 2: First-order factor analysis standard measurement

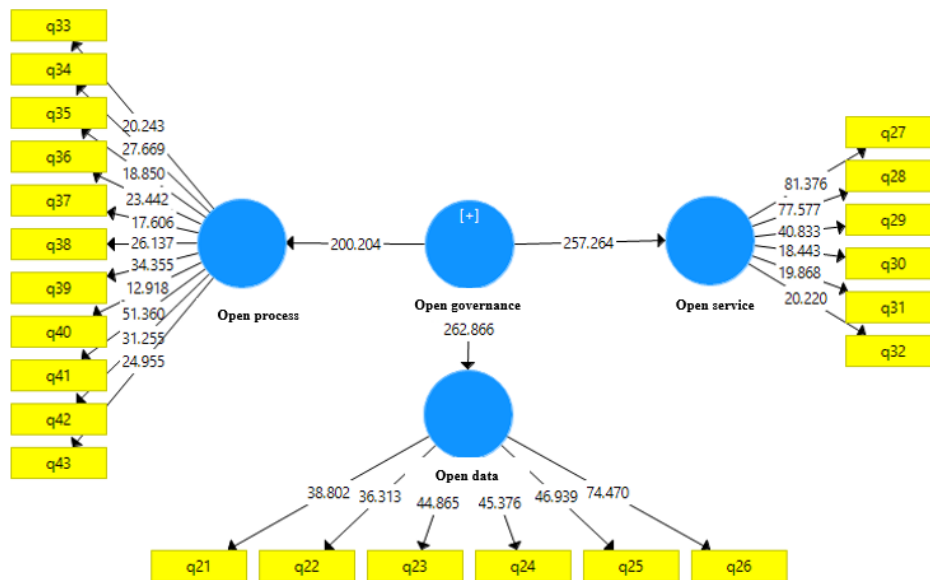


Fig. 3: Measuring the t value of the first-order factor analysis

Table 3: Validity coefficients of the model

variable *	CR	AVE	MSV	Furnell and Larker matrix			
				1	2	3	4
Data open	0.787	0.552	0.193	0.743			
Process open	0.844	0.644	0.478	0.342	0.803		
service open	0.918	0.651	0.423	0.331	0.47	0.807	

A value of Cronbach's alpha higher than 0.7 is an acceptable indicator of reliability. If the value of CR for each structure is above 0.7, it shows the internal stability

suitable for the measurement model. AVE value above 0.5 indicates acceptable convergent validity. Considering the three values of 0.01, 0.25 and 0.36 as weak,

medium and strong values for GOF, the result of 0.62 shows the strong fit of the model.

4-3: The results of the network analysis process

In this research, 3 main factors have been identified to prioritize open governance factors in municipalities based on the network analysis process method. After building the model in the Super Decision software and entering the matrix of paired comparisons, the weight of criteria and sub-criteria was obtained as shown below.



Fig. 4: Prioritizing the main factors using Super Decision software

Table 4: Prioritization of governance factors open At Municipalities

row	standard	Weight	priority
1	Data open	0.156	3
2	service open	0.676	1
3	Process open	0.166	2

can be seen in Figure 4 the green cypress , factor with a relative weight of 0.676It is the most important and the open process factor with a relative weight of 0.166In the second priority and the open data factor with a relative weight of 0.156It is in the third priority. According to the above diagram, the inconsistency rate of 0.024 was obtained, which is smaller than the standard limit of 0.1hence, the above questionnaire was completed with high .accuracy by the respondents

4-4: Sub-index weighting

In this study, using subject literature and relevant experts, a total of 3 main components and several sub-indicators were obtained. For the prioritization of open governance factors in municipalities, the decision-making methods and network analysis process have been used. The results are in the following table:

Table 5: Prioritization of sub-indexes (Open process)

Row	Open process	Weight	priority
1	Teaching leadership skills	0.172	1
2	Review and modify activities	0.085	6
3	Integration of policies	0.031	11
4	Full support of people	0.047	9
5	Reducing organizational hierarchy	0.139	3
6	The presence of independent devices	0.167	2
7	General Policies	0.052	8
8	Interdepartmental cooperation	0.039	10
9	Creating the necessary communication and balance	0.054	7
10	Employing urban affairs specialists	0.116	4
11	Succession of future managers	0.098	5

Table 6: Prioritization of sub-indexes (open service)

Row	open service	Weight	priority
1	Equal distribution of services and facilities	0.212	2

2	Creating a platform for the maximum participation of citizens	0.109	6
3	Reflecting the wishes of the people	0.118	5
4	Network relationship between stakeholders and actors	0.311	1
5	Participation of the government, citizens and private institutions	0.129	3
6	Freedom of expression	0.121	4

Table 7: Prioritization of sub-indexes (open service)

Row	open data	Weight	priority
1	Providing reports on the performance of managers and institutions	0.067	6
2	Mass media activities to spread the news	0.162	4
3	A platform for monitoring and controlling its feedback	0.285	1
4	Use of information channels	0.167	3
5	Strengthening information systems	0.212	2
6	People's access to all government interactions	0.107	5

5. Conclusion

The current research has been done to present an open governance model in municipalities. In this research, to better understand the issue in the field of open governance, as well as to identify its dimensions and components, semi-structured interviews were conducted individually with experts, experts and knowledgeable people. These experts and researchers were selected purposefully. The criterion of the number of participants was the principle of theoretical saturation. In other words, the selection of people continued until new information was added to the previous information. In the present study, the criterion of reliability was observed as much as possible. In this way, the researcher kept in mind the goal and question of the research in all stages of the research and determined his policy based on it to enable access to reliable information from the interviewees; The researcher presented the results of his data analysis to the experts in this field and sought their opinion; During the process of data collection and analysis, the researcher revised his perspective and strategy. Also,

in this research, an effort was made to observe the principle of trust as much as possible. The steps of research and data analysis were clearly described so that every reader and critic can examine it. In the current research, the test-retest reliability and intra-subject agreement method were used to calculate the reliability of the literature analysis. Finally, indicators were identified that were provided to academic and organizational experts in the form of a researcher-made questionnaire. To ensure the validity of the tool in the qualitative part of the research and to ensure the accuracy of the findings from the researcher's point of view, the valuable opinions of professors familiar with this field and university experts who were experts and informed in this field were used. Also, at the same time, the participants were helped in analyzing and interpreting the data. Based on the results, among the components of open governance, open service is the most important, and it was also determined about the sub-components:

□ According to the main weight of the open service indicators, in order of components of the network relationship between

beneficiaries and actors with a value of 0.311, equal distribution of services and facilities, participation of the government, citizens and private institutions, freedom of expression, reflection of people's wishes and creating a platform for The maximum participation of citizens is the most and the least important in the group.

Also, according to the main weight of the open process indicators, in the order of leadership skills training components with a value of 0.172, existence of independent devices, reduction of organizational hierarchy, employment of urban affairs specialists, succession of future managers, review and modification of activities, creating the necessary balance and communication, public policies, full support of people, inter-departmental cooperation and integration of policies are the most and least important in the group.

On the other hand, according to the main weight of the open data indicators, in order of the platform components to monitor and control its feedback with a value of 0.285, strengthening information systems, using information channels, group media activity to publish news, access Members of the public have the most and the least importance in the group for all government interactions and reporting on the performance of managers and institutions.

In the end, it seems that for the improvement of the organization's management system and the actual application of reform policies, only the factor of bureaucracy and public affairs management is important. However, digitalization and digital governance have a very high place. The technology, requirements, platforms and drivers of governance in the digital age must be strongly on the agenda. Digital governance has a significant impact on the implementation of reforms and should be looked at from a digital ecosystem perspective.

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