

## A hybrid model for the prioritization of municipal projects in Iran

Shakiba Khademolqorani

*Department of Industrial Engineering, Engineering faculty, Sheikh Bahaei University, Isfahan, Iran*

Corresponding Email: *Shakiba\_kh@shbu.ac.ir*

### ABSTRACT

The integrated urban management is in charge of coordination and united actions of public organizations and stakeholders for presenting better and more suitable services and creating appropriate conditions for the citizens. The allied urban management includes the following benefits: programming for the execution of all urban projects, avoiding wasting resources and capital city, running urban planning based on importance and priority, creating the hierarchical system in decision making and execution, emphasizing urban management with human partnership, and preventing the individual decision making in the urban affairs.

In this paper, to achieve the integrated urban management goals in Iran, given the fact that municipalities are the main member of executive center in the city, a hybrid model for the municipal projects has been presented based on strategic planning and multiple alternative decision making methods. It has been tried to use the group decision making, a well-balanced distribution of sources and capital, urban priority for projects execution, and creating the decision making pattern on the basis of knowledge. Also, the presented model has been executed as a sample for the central municipality and a part of its related in situations in Isfahan. The obtained results clearly showed the increase of satisfaction of mayor and senior managers of each sector. Also, the level of sectors operations was upgraded and the execution based on programming created the partnership spirit to the betterment of projects execution against the bargaining culture and traditional selection method.

### Original Article:

*Received 2018-06-10*

*Revised 2018-07-15*

*Accept 2018-07-30*

**Keywords:** Urban Management; Development; Municipal Projects; Strategic Planning; Multiple Decision Making.

### 1. INTRODUCTION

City is a part of spatial system hierarchy. Political and geographical divisions of each country are formed on the basis of different indexes such as government type, management, level of knowledge, social interests, and people's partnership in decision making system, etc. The urban management system with the aim of suitable management of the city affairs does its best to coordinate the relations between the urban elements [2, 4, 11, 15].

In Iran, municipality as one of the executive arms of urban management is the organization which works all over the city, and city residents empower it for decision making and management of their city affairs. In this big institution, like other similar ones, productivity of activities is indebted to logic and long-term programming.

In Iran, the existence of various institutions with different aims has caused some conflicts in allocating and utilizing from sources such as

- lack of integrated priority in planning and execution of urban projects
- the considerable effect of bargaining in satisfying the decision makers
- inattention to plans with long effectiveness scope

Given the importance of the above circumstances and access to coordinated inter-organizational system and integrated urban management, selection of a suitable and scientific method for the performance of municipal activities is necessary [3, 9, 12].

Strategic planning is the process by which the guiding members of an organization envision its future and develop the necessary procedures and operations to achieve that in the future [1, 13].

Also, during the past 40 years, the Multiple Alternative Decision Making (MADM) methods have made remarkable progress, developing into a mature discipline. Recently, researchers have tried to apply this method in different areas especially in the integrating approach [16].

Therefore, in this paper, by prioritizing effective projects for the whole city, and by taking into consideration the above mentioned problems in choosing them, it utilized the integrated model based on the strategic planning and multiple alternative decision making methods. It emphasized group decision making, well-balanced distribution of sources and capital, city priorities for the distribution of execution project, and decision making pattern based on knowledge.

The paper is organized as follows: section 2 describes the organized structure of most municipalities in Iran. Section 3 presents the Strategic Planning and Multiple Alternative Decision Making used as the main methodologies. Section 4 illustrates the integrated approach to prioritize municipal projects in details. The paper ends with concluding remarks in section 5.

## **2. Structure of Municipalities in Iran**

In Iran, the record of urbanism is attributed to “Achaemenians”, who made one of the longest urbanism records in the world; in fact creating the administrative organization is that of “Darius Achaemenians”.

In 1960, by the ratification of the municipal law, the first authorization for organizing the municipality management was drawn up in 5 chapters and 108 Articles. It was the first step towards the formation of an official institution for urban management in the framework of modern administrative system in Iran and was executed in capital and big cities.

“Baladieh”, which was later known as municipality, was an organization which was active in the city, and the citizens empowered it for decision making and management of their city affairs. Municipality was independent and non-governmental; actually, it was only monitored by the government.

In order to improve the urban services with regard to each city area and population, the municipalities were divided into several districts. Then, a part of the tasks of the city mayor was delegated to district managers who had full knowledge of their district problems, and in most cases, they performed the municipality plans. Therefore, many plans for which the municipal budget was spent were appraised and proposed by the districts. The major functions of districts can be specified hereunder:

- Performing the development affairs in the relevant district.
- Issuing the construction licenses, and performing the relevant affairs.
- Preserving parks, greeneries, and creating parks and greeneries in the district.
- Gathering and transporting the garbage from the place of production up to the garbage central transfer stations.
- Proposing and executing the district projects including the urbanization, development, construction, and so on.

Furthermore, on the strength of Article 84 of the municipal law, the affiliated institutes to municipality such the bus may be managed in the framework of a company or organization. On the same basis, in big municipalities, most units working under supervision of deputy mayors are managed in the form of organization. These organizations, by utilizing the financial, physical, human, and other resources which the municipality puts at their disposal, perform their specialized duties, which are those of the municipality. Some of them include Fire Department and Safety Services, Parks and Greenery Organization, Information and Communication Technology Organization, Renovation and Restoration Organization, etc. As mentioned above, these organizations are independent of administrative institution.

It is worth mentioning that the independence of organizations is legal and lawful as per their Articles of Association. But, the independence of district municipality is common, because they have enough budget and power as given to them by the city mayor. This is to state that these two kinds of independence are proportional, because each organization, for continuing its life, is affiliated and dependent on the central municipality. Furthermore, for organizing and reforming the city, the organization plays the role of an organizer and reformer for the central municipality.

The other available institutions in municipalities are the assistant departments performing the policy making duty in the scope of their activity. The assistant departments are usually related to the mayor and their managers are, in fact, the deputy mayor. These institutions depend on the city area and population [5,6,18].

## **3. METHODOLOGY**

In this section, the applied methods used in our framework, Strategic Planning and Multiple Alternative Decision Making are briefly described.

### **3.1. Strategic Planning**

Strategic Planning is a management tool that helps an organization focuses its energy to ensure that members of the organization are working toward the same goals and to assess and adjust the organization's direction in response to a changing environment. In short, strategic planning is a disciplined effort to produce fundamental decisions and actions that shape and guide what an organization is, what it does, and why it does it, with a focus on the future.

The process is strategic because it involves preparing the best way to respond to the circumstances of the organization's environment, whether or not its circumstances are known in advance; nonprofits often must respond to dynamic and even hostile environments. Therefore, being strategic means being clear about the organization's objectives, being aware of the organization's resources, and incorporating both in consciously responding to a dynamic environment.

The process is planning because it involves intentionally setting goals (i.e., choosing a desired future) and developing an approach to achieve those goals. The process is disciplined in that it calls for a certain order and pattern to keep it focused and productive. The process raises a sequence of questions that help planners examine experience, test assumptions, gather and

incorporate information about the present, and anticipate the environment in which the organization will be working in the future.

Finally, the process is dealing with fundamental decisions and actions because choices must be made in order to answer the sequence of questions mentioned above. The plan is ultimately no more, and no less than a set of decisions on what to do, why to do it, and how to do it. Because it is impossible to do everything that needs to be done in this world, strategic planning implies that some organizational decisions and actions are more important than others and that much of the strategy lies in making the tough decisions on what is the most important in achieving the organizational success [1,13].

### 3.2. Multiple Alternative Decision Making

Multiple criteria decision making (MCDM) is a sub-discipline of operations research that explicitly considers multiple criteria in decision-making environments. MCDM is concerned with structuring and solving decision and planning problems involving multiple criteria. In general, multiple criteria problems can be divided into two categories: Multiple Alternative Decision Making (MADM) and Multiple Objective Decision Making (MODM). Typically, there is not a unique optimal solution for such problems and it is necessary to use decision maker's preferences to differentiate between solutions [16, 19]. Figure 1 illustrates some common methods in each category of MADM.

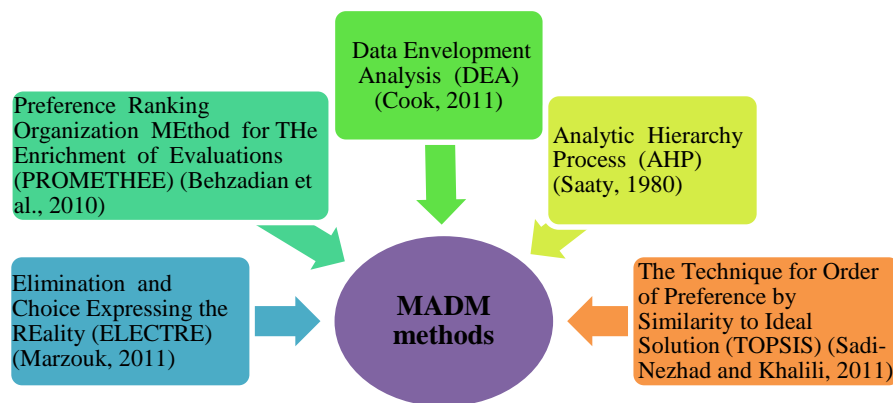


Figure1. The typical methods in MADM area

### 3.3. The Proposed Integrated Framework

Regarding municipalities organizational structure in Iran (central municipality, district municipalities, organizations and assistant departments with different aims in municipality or connections to it), different institutions have caused some conflicts in allocating and utilizing from sources. On the other hand, without the reciprocal assistance of all districts, no cohesive plan will be made in the city. Overall, the present problems are summarized as follows:

- Lack of united priority in planning and executing the urban plans and projects.
- The effect of considerable bargaining power on satisfying the decision makers.
- Inattention to projects related to their long-term effectiveness.
- Independence of affiliated institutions duties and the natural dependence of city affairs.
- Sources dependency of districts with each other.

In this paper, in order to overcome the present problems, the decision making model was proposed on the basis of strategic planning and multiple alternative decision making (MADM). In fact, strategic plans information of all affiliated institutions and its components relations among institutions were extracted. Then, all priority was given to the projects aiding from MADM method. The following things were taken into consideration:

- Targeting based on the current requirements of the city; as per a pattern for city development, which was utilized by the central municipality, a list of qualitative and quantitative goals would be extracted from the strategic plans.
- Considering the goals based on the city values; in order to appraise the projects to satisfy the current requirements of the city, considering the central municipality values towards approaching its goals was also compulsory. In addition, for estimating the values, a similar logic and similar method was necessary for the assessment. On the other hand, whereas the entire projects were performed for the development of the city, it was, therefore, necessary for the values to be estimated to confirm the overall approach for development.
- Considering different weights for the goals; in accordance with the provided strategic plans for the central municipality and other affiliated institutions, the goals have different priorities and weights; it is, therefore, necessary for this to be an object of attention in the targeting model.
- Group decision making; association of various levels of management and experts in decision making and accumulation of their votes in the model, which is one of the requirements towards improvement of the organizational culture.
- Coordinating with strategic planning; in compilation of each organization strategic plan, the process of accessing to the organizational goals is drawn up on the basis of its mission. Also, the strategic plans of affiliated institutions are, in fact, the

pieces of the bigger statue of the central municipality strategic plans. Therefore, these plans should be basically coordinated in one direction with each other, and since the city development strategy is ascertained by these plans, it is, therefore, necessary to be similar to the performed actions.

- Considering different projects: it is necessary to take in to account all defined activities and projects from all institutions. For the same reason, due to the different nature of institutions, some projects may be taken into the same group or in a basket project; then the evaluation process of the projects can be facilitated by managing the activities on the basis of their operational manner and method of their connections and relationship with each other.

The diagram of the proposed prioritization framework for the fulfillment of each of municipal projects has been presented in figure 2. Also, in the following sections, the fulfillment of each step has been explained.



Figure2. The diagram of the prioritization framework

### 3.4. Formulating the Strategic Plans of the Central Municipality and its Affiliated Institutions

In the first step, a comprehensive recognition of requirements of all institutions in the light of their setting goals should be processed. In this case, the central municipality could achieve a more successful planning through accurate and precise information by full recognition and scope of all affiliated institutions operation as well as their roles in the demands of the city. In the present dynamic and complicated world, the strategic planning and management is a way for helping the organizations and associations to be faced with speed changes. It is a model for recognizing and solving the most important problems in the shade of vision, mission, goals, and the route for attaining them in the organization with the knowledge about the organization strengths and weaknesses and efficiencies. It optimally uses the opportunities and situations in order to overcome the weaknesses and threats which endanger the existence of the organization; in fact it is an effective action in facing the varying and competitive world.

Therefore, for suitable management and planning in municipality and its affiliated institutions in the urban management, in order to coordinate and aligning the requirements of the municipality full body, providing and formulating the strategic plans of the central municipality and its affiliated institutions are necessary.

It is worth mentioning that strategic planning in the municipality body has been made in most municipalities of Iran, but in order to access the aims of formulating a strategic plan in a big organization with the municipality structure, and to achieve the integrated urban management, the circumstances mentioned in figure 3 are necessary to be taken into consideration.

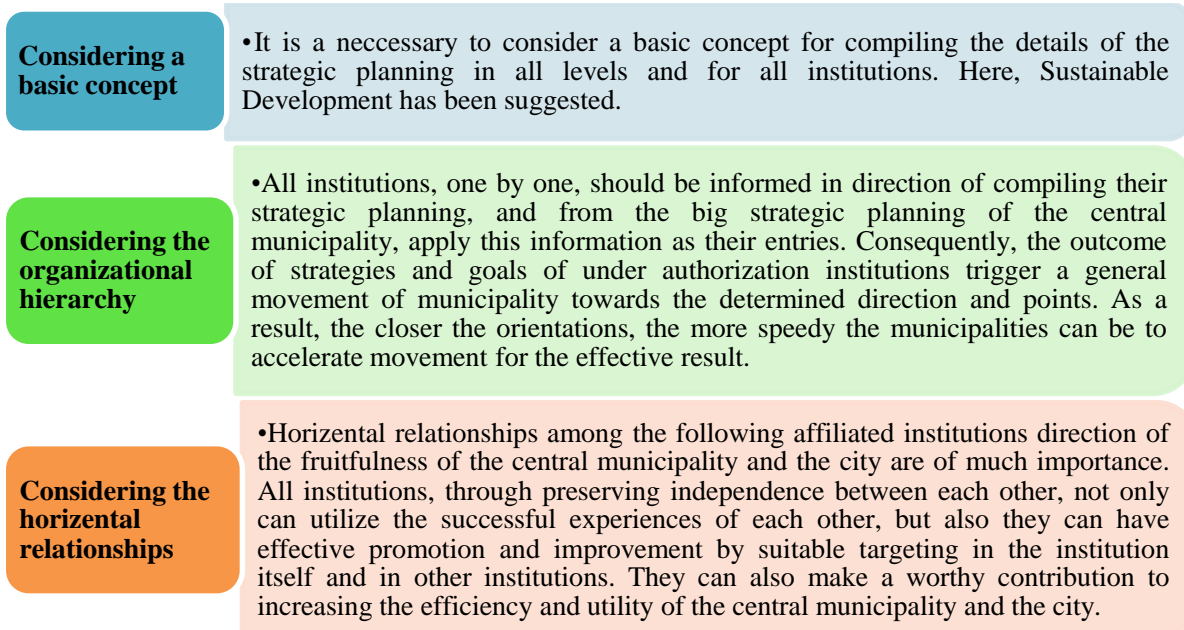


Figure3. Important issues for strategic planning

On the other hand, if there is not any effective connection between the central municipality and its affiliated institutions, there is interruption among their strategic plans, leading to straying from its goals and the city goals. Also, it can waste the available

resources among these institutions, and decrease the productivity. Therefore, integrity of goals and strategies in the planning stage of municipality can result in more productivity and appropriate execution of them and then, a better and worthier direction and urban management in direction of continuous improvement. In this regard, if the strategic plans have been formulated separately and independently, certainly, it is required to be reviewed and renewed.

Without decreasing the generalities of the subject, to prevent the model complexity, it is possible to overlook some parts of the strategic plans. Therefore, the structure of the strategic plan for the decision making model in the municipality is as follows: (Figure 4)

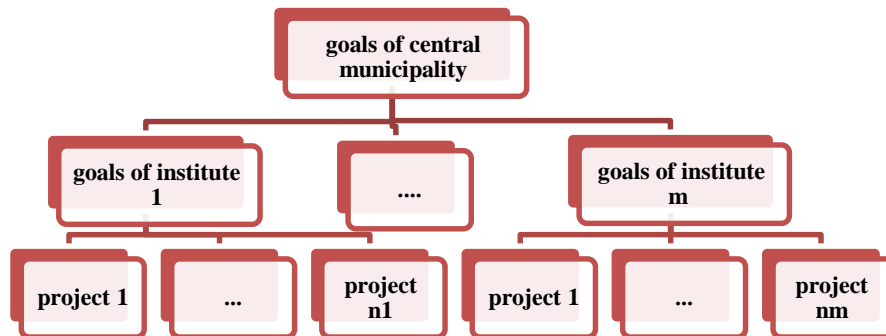


Figure4. The strategic plan structure for decision making model

The overlooked parts in the hierarchy are related to the assumed parts. In other words, the model has utilized three general parts of the central municipal goals, and that of other institutions (district municipalities, organizations, and assistant departments), as well as projects selection and their final activities. In this structure, other parts of the strategic plans include the vision, objectives, and so on. They may be taken into consideration for the central municipality or its other affiliated institutions, but this change in details does not have any effect on the general structure.

### 3.5. Weight Calculation of the Central Municipal Goals & affiliated institutions

Other recruitments of the model which are achieved by using the strategic plans are the weight of the central municipal goals and that of each of affiliated institutions. It is necessary to emphasize that the presented weights have been determined in the local form for each of institutions. Namely, each institution by paired comparison of its goals announces the importance of each of goals (these weights are usually calculated from AHP method). Therefore, in this weighing, the importance of goals in each institution of the central municipality is not specified.

In order to calculate the general weight of goal importance in the city, it is also necessary to calculate the role of each goal of institutions in achieving the central municipality goals. In this regard, this information should be obtained with paired comparison and AHP method, and the total experts' votes of affiliated institutions and the central municipality about the role of each and every institution' goals should be obtained. Therefore, by using the obtained information, the general weight of a goal can be calculated by the following formula.

$$w_j = lw_j * \sum_i w_{j,i} * cw_i \quad (1)$$

Where  $w_j$  is the general weight of the goal  $j$ ,  $lw_j$  is the goal weight among the goals of defining institution (goal local weight),  $w_{j,i}$  is the weight of the goal  $j$  of the institution in achieving the goal  $i$  of central municipality,  $cw_i$  is the weight of goal  $i$  of central municipality among the central municipality goals.

It should be emphasized that it is necessary to obtain  $w_{j,i}$  through a group decision making process of the central municipality and its related authority of institutions, because these weights are not calculated in the structure of strategic plans. Furthermore, in the modeling structure, other levels of the goals may also be implemented; then these weights could be determined by just changing the index of formula 1.

### 3.6. Defining & Calculating the Indicators of Goals & their Weights

Defining the indicators of the goals is one of the strategic planning steps. Moreover, measurement ability and calculation of the amount of access to them are also one of the decisions making requirements of the model. In other words, in this model, in order to appraise the effect of a project on a special goal, it is necessary to define indicators for each goal and the effect of intended measures to be considered on each indicator.

In this structure, the effects and consequences of accessing the goals should be taken into consideration for defining the indicators. Furthermore, consideration of a general and comprehensive concept for defining the indicators is also compulsory to integrate affiliated institutions and create organizational coordination, and have access to an integrated system for evaluation. Here, Sustainable Development is suggested.

Upon providing the effective indicators, what is important in this step is their measurement. It is not only important to provide the indicators, but also their calculation method/effectiveness is very important and should be taken into consideration by the experts. It is because possibly there are some effective indicators that may be non-assessable in the organization conditions of time and place.

Regarding the determination of indicator range, the totaling capability, comparability of indicator scores, ease of appraising by experts, and acquaintance of the assumed organization should be taken into account. The qualitative indicators should be

measured like yes/ no, or much/ fair/ little, or from very much up to very little. Also, manner of calculation and the range of indicators which are quantitative are determined.

As mentioned, the indicators are the proxy of one goal; therefore, the achieved amount of a goal is estimated through studying the increasing amount of indicators. But, it is possible that the indicators may not have equal weight in reporting the goal achieved status. Hence, in this step, it is necessary that the experts determine the weight and amount of the goals indicator effectiveness when defining them. Figure 5 shows a summary of the required activities in this step.

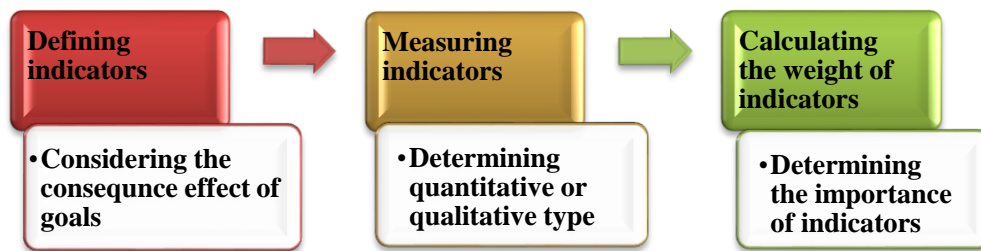


Figure5. Summary of the required activities in step 3

#### 4. Investigating the Projects Relationship

In order to study the effects of a project and its assessment, it is necessary to consider its relation with each of the goals. It is because a project may be related to several goals from one institution and even several goals from different institutions. For example, by the execution of a development project in a district, if this project is performed on an urban distressed area, the goals and requirements of Restoration and Renovation organization have also been included; furthermore, if a part of the project is specified for creation of greenery, the goal of Parks and Greenery organization has also been secured. Finally, in this case, this project has more value for the city, and is prior to other projects to be executed.

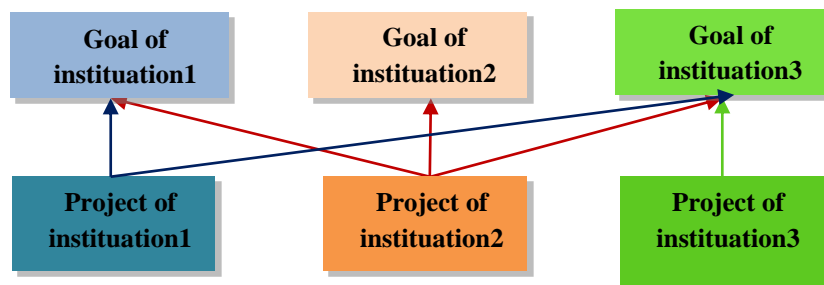


Figure 6. The relation of projects to goals

As can be observed in figure 6, the project of institution #1 is also related to the goal of institution #3, that is, its performance is also effective on the operations indicators of institution #3. Then, the projects which are more effective on the goals and their indicators, as they create more value for the central municipality, have a higher priority to be selected and executed (like the project of institution #2 in relation to institution #3). Evidently, this issue is relative, and is related to the weight and number of indicators, and the weight of the goals as well.

##### 4.1. Assessment of Projects

After determining the indicators and weight of each one in securing the institution's goal, then the turn is for determining the effects of projects on each of these indicators. For securing the information of this part, it is necessary to use the techniques related to projects Environmental Impact Assessment (EIA). Different quantitative and qualitative information from various resources, especially those related to the quantitative and objective information from projects, are required for the performance of this important matter.

##### 4.2. Calculation of the Total Score of a Project

The main purpose of this model is to give priority to the presented projects by different institutions of municipality for decision making on their selection because of the source limitation. Therefore, a decision making model is proposed by strategic planning and Multiple Alternative Decision Making (MADM) methods. Now, the advantages and disadvantages of different tools of MADM method are discussed related to the model requirements.

Up to now, to assess and give priority to projects, the method of AHP has been used. AHP method is one of the most common methods of MADM based on the paired comparisons which uses a hierarchy structure [14]. While the numbers of selections are more than 14, the result of this assessment method is not reliable. This is because the decision makers should compare each alternative by the rest, and this action, when the number of alternatives is high, makes the decision makers' view bias. Therefore,

in the municipality structure where there exist more than five thousands projects for giving priority, the inefficiency of this method is clear.

The other method used for giving priority is DEA. This method, similar to the method of AHP, is required to compare and calculate the efficiency of alternatives [17]. Here, the high number of selections causes the biased decision too.

In this model, to overcome the biased decision and make a sense for the selection, proposed method is to present indicators of the goals measurement and projects assessment by the list of indicators.

Then, in order to utilize the determined indicators to prioritize projects, one of the common methods is TOPSIS, from which the positive and negative ideal as well as common indicators in giving score is used [10]. In this method, the intended indicators for scoring should have equal weights, while these weights are changing in proportion with the manner of project relationship with the goals and alterations of this change. Therefore, it is useable for giving score in one institution only, but for integral score giving the projects, this method is not implementable.

The other common method is ELECTREE, which uses this method like TOPSIS. The weight of indexes should be similar for all alternatives and therefore, using this method is impossible [8].

In this model, through using the information obtained from the weight of goals, the goals indicators and their weights, the results of projects assessment from experts' view and the weighted average of the assessment result are calculated to get the total score of projects. The important point for calculating the project score is to normalize the obtained results in assessment step, which is due to the indicators nature difference, and their measurement units. Here, fuzzy normalizing is implemented because it is proportionate with indicators structure. Both positive and negative indicators may exist .

If  $a_{ij}$  is the indicator amount and  $b_{ij}$  is the normalized amount of that for positive indicator, we have

$$b_{ij} = a_{ij} - \min\{a_{ij}\} / \max\{a_{ij}\} - \min\{a_{ij}\} \quad (2)$$

and for the negative indicator,

$$b_{ij} = \max\{a_{ij}\} - a_{ij} / \max\{a_{ij}\} - \min\{a_{ij}\} \quad (3)$$

Therefore, by the following calculations, the total value a project creates for a city could be obtained.

$$S_{i,j} = \alpha_{i,j} \sum_{k=1}^{N_{kj}} W_{j,k} * PIS_{i,j,k} \quad (4)$$

$$\alpha_{i,j} = \begin{cases} 1 & \text{If project i is related to goal j} \\ 0 & \text{OW.} \end{cases} \quad (5)$$

$$PS_i = \sum_{j=1}^N W_j * S_{i,j} \quad (6)$$

where

$S_{i,j}$ : Score of project i in the goal of j

$\alpha_{i,j}$ : The parameter of project i in relation with goal j

$N_{kj}$ : The number of indicators of goal j

$PIS_{i,j,k}$ : The score of project i in indicator k of goal j

$W_{j,k}$ : Indicator weight k among goal indicator j

$PS_i$ : The total score of project i

$N$ : The total number of goals

$W_j$ : The total weight of goal j

At last, the model production is to present a list of projects among the proposed projects from the different institutions of municipality. It should select such a project that in terms of securing the various institutions goals, the limited budget and other resources, it can obtain the highest score in creating value for the city, and the rest of municipality restriction. Therefore, with regard to the above conditions, some of the proposed projects by the institutions may not be selected in the final list.

## 5. Case Study

In this section, a real case study is presented to justify the performance of the proposed model. A small amount of projects execution for prioritizing has been taken to Isfahan Municipality projects. In order to employ the model, initially, all strategic plans of affiliated institutions were revised in the light of the city strategic plan, and then the pattern of relation between the goals of the central municipality and affiliated institutions was compiled. Figure 7 shows a part of this pattern and the relationships for one goal of the central municipality, parks and greenery organization, and districts.

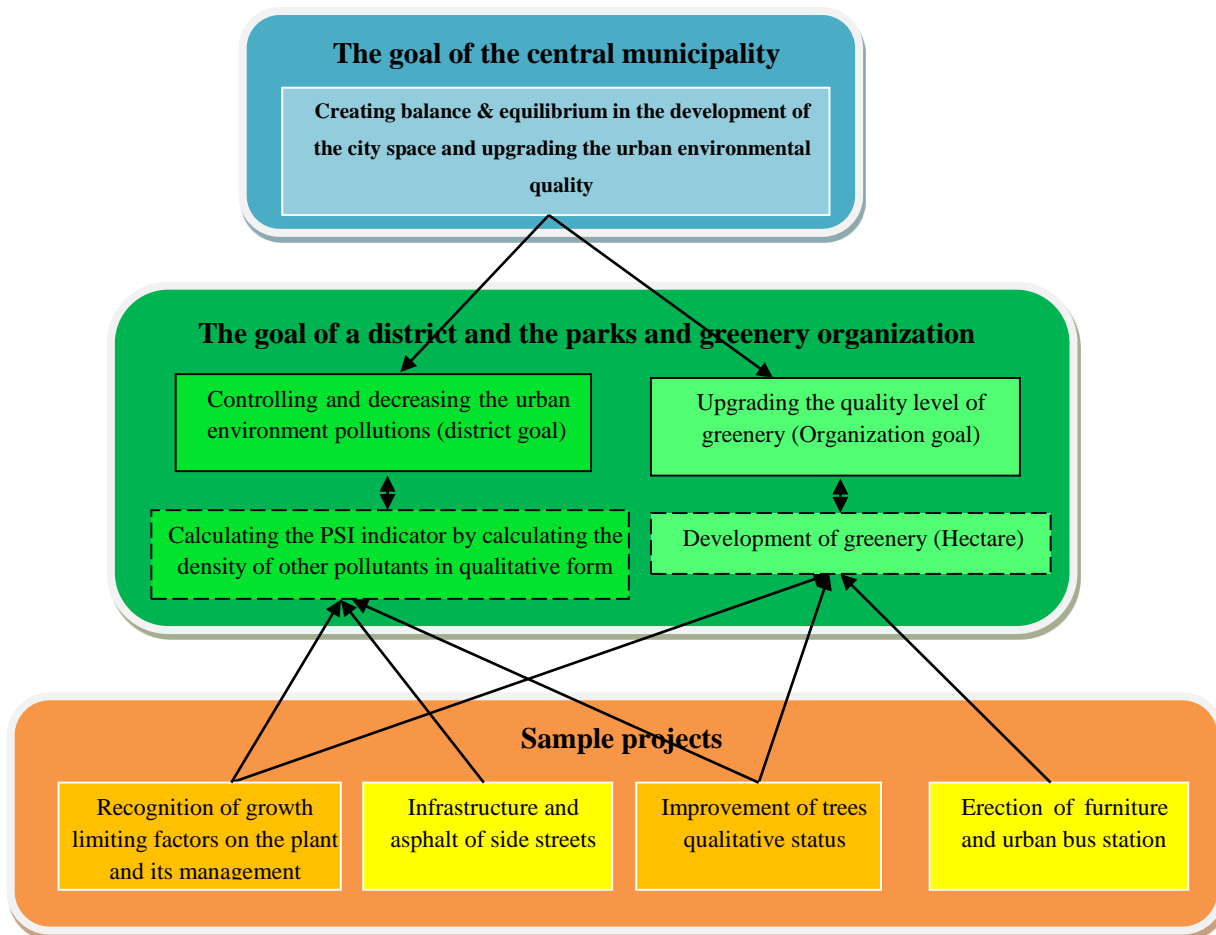


Figure7. The diagram of relations among members of the proposed model

Based on formulating strategic plans in the full body of Isfahan Municipality, one of the goals of the central municipality is creating constant equilibrium and balance in the development of city space and upgrading the urban environmental quality, which is related to the goals of upgrading the greenery qualitative level, and controlling and decreasing the urban environmental pollutions. Then with the knowledge of these relationships and the weight of the goals for each and every level of the strategic plans, the total weight of the goal for each institution was calculated using the formula 1 (table1).

Also, in defining the goals measurement indicators, the strategic plans information and their revision by experts were used to study the consequent effects. Furthermore, as per the experts' view, it used the equal weights for the calculation of indicators weight.

In the next step, the manner of relation of the proposed projects by other institutions with the goals of all municipality institutions was studied. These relationships are shown for four projects and two institutions in figure 7.

Finally, upon receiving other required information including the weight of institutions goals, weight of indicators, assessment of projects by experts and related committees and normalization of the information, the priority of performing all projects was obtained (table1).

Table1. Summary of calculation of the Total Score of a Project

Table1. Summary of calculation of the Total Score of a Project							
Goal	Indicator	Local weight (lw)	Total weight (w)	Score of Recognition of growth limiting factors on the plant and its management	Score of Infrastructure and asphalt of side streets	Score of Improvement of trees qualitative status	Score of Erection of furniture and urban bus station
PIS							
Controlling and decreasing the urban environment pollutions (district goal)	Calculating the PSI indicator by calculating the density of other pollutants in qualitative form	0.24	0.23	0.27	0.11	0.35	0

Upgrading the quality level of greenery (Organization goal)	Development of greenery	0.37	0.16	0.18	0	0.22	0.08
Final score (PS)				0.09	0.025	0.12	0.013

As a sample, if the structural information of figure 6 is used, the following priorities for the execution of projects are obtained:

1. Improvement of trees qualitative status
2. Recognition of growth limiting factors on the plant and its management
3. Infrastructure and asphalt of side streets
4. Erection of furniture and urban bus station

Meanwhile, by considering the full performance of the proposed model, and all institutions and projects, the priority manner of sample projects is changed to:

1. Infrastructure and asphalt of side streets
2. Erection of furniture and urban bus station
3. Improvement of trees qualitative status
4. Recognition of growth limiting factors on the plant and its management

In spite of all performed attempts, opposition and resistance against the execution of these projects, the obtained results indicated the increasing level of satisfaction of mayor and senior managers. It upgraded the institutions operational level and created the partnership spirit in the optimum execution of projects against the bargaining culture and selection of the traditional methods.

## 6. CONCLUSIONS

In Iran, urban management is encountered with major limitations and challenges. Integrated urban Management, under these circumstances, is a process which, not only in the recent years but also during the previous decades, was created on the basis of laws and urban affairs organizational structure in the city. Municipalities are one of the civil institutions and local organization performing functions for urban societies. The wideness of urban society requires coordination and integrated management of systems with each other.

Nowadays, if no attention is paid to planning and its science, competition and improvement of status will seem to be impossible. In this regard, the strategic planning plays an important role for the success of organizations, and in case this planning is performed in the right manner, the progress and success of organization will be doubled.

In this paper, therefore, by emphasizing the removal of present decision making challenges in the municipalities in Iran, the integrated model was presented to give full priority to the municipality projects expansion and help all urban management units use the strategic planning instruments and multiple alternative decision making methods. According to experts' studies and the relevant results, by the full execution of the proposed model, it is possible to attain the urban management goals, fair distribution of sources, and good governance up to a high limit.

## 7. ACKNOWLEDGMENTS

Our sincere thanks to Dr. Rajabipour, Dr. Malekipour, Dr. Sheikh and all of the Isfahan municipality staffs for their generosity to help us with their experiments. Without their help, this work would never have been completed.

## References

1. C. D. Fogg, Team-Based Strategic Planning: A Complete Guide to Structuring, Facilitating, and Implementing the Process, (Create Space Independent Publishing Platform, 2010).
2. G. Tannerfeldt, P. Ljung. More Urban Less Poor: An Introduction to Urban Development and Management, (US & UK: Routledge, 2006).
3. H. C. Jassem, "Municipal WiFi: The Coda", Journal of Urban Technology, 17:2 (2010) 3-20.
4. K. Hanaki, Urban Environmental Management and Technology (Japan: Springer, 2008).
5. K. Tajbakhsh, "Political Decentralization and the Creation of local Government in Iran", Social Research, 67:2 (2000) (<http://www1.worldbank.org/wbiep/decentralization/default.html>).
6. K. Tajbakhsh, Planning Culture in Iran: Centralization and Decentralization in the Twentieth Century, (Cambridge: MIT Press, 2004).
7. M. Behzadian, R. B. Kazemzadeh, A. Albadvi, M. Aghdasi, "PROMETHEE: A comprehensive literature review on methodologies and applications", European Journal of Operational Research, 200:1 (2010) 198-215.
8. M. M. Marzouk, "ELECTRE III model for value engineering applications", Automation in Construction, 20:5 (2011) 596-600.
9. M. M. Finney, M. J. Yoon, "Interdependence in the technology adoption decision among municipalities", Applied Economics, 43:28 (2011) 4343-4352.

10. S. Sadi-Nezhad, K. Khalili-Damghani, "A modified TOPSIS technique in presence of uncertainty and its application to assessment of transportation systems", *International Journal of Management Science and Engineering Management*, 6:1 (2011) 3-13.
11. S. Romaya, C. Rakodi, *Building Sustainable Urban Settlements: Approaches and Case Studies in the Developing World*, (London: Practical Action, 2003).
12. S. Botta, C. Comoglio, I. Petrosillo, "Implementing the environmental and social policies of a municipality through an integrated management system: theoretical framework and case study", *Journal of Environmental Planning and Management*, 56:7 (2013) 1073-1095.
13. T. N. Nolan, L. D. Goodstein, J. Goodstein, *Applied Strategic Planning: An Introduction*, (San Francisco, Pfeiffer, 2008).
14. T.L. Saaty, *The Analytic Hierarchy Process*, (New York, McGraw-Hill, 1980).
15. T. Yigitcanlar, *Rethinking Sustainable Development: Urban Management, Engineering, and Design*, information Science Reference, (US: IGI Global, 2010).
16. V. Belton, T. Stewart, *Multiple Criteria Decision Analysis: An Integrated Approach*, (Springer, 2001).
17. W. D. Cook, "Qualitative Data in DEA, *Handbook on Data Envelopment Analysis*", Springer, 164 (2011) 151-172.
18. [www.isfahan.ir](http://www.isfahan.ir).
19. Y. Shi, *Advances in Multiple Criteria Decision Making and Human Systems Management: Knowledge and Wisdom*, (Amsterdam, IOS Press, 2007).