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Evaluating the Quality of Tehran's Urban Environment Based on Sustainability Indicators

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ABSTRACT: The objective of this study is to measure the city of Tehran's environmental quality in 2006 (the last census year). Primarily, with a comparative analysis of a variety of urban sustainability indicator models, a collection of 54 indicators have been chosen and categorized as indicators of increase or decrease in urban environmental quality in the form of a simple mathematical model. Based on the aforementioned model, Tehran's environmental quality in 2006, having obtained a score of 59.5%, has been evaluated as "middle ranking". After continuing the evaluation more meticulously, it became known that the individual healthcare indicator with a 91% score and the safety and security indicator with a 19% score had the highest and lowest quality respectively in the city. Repeating this evaluation in the future will show the condition of the city's movement toward establishing a sustainable city. Furthermore, it will clearly demonstrate the reasons affecting the high or low speed of this movement.

Key words: Indicator, Urban Environment, Quality, Evaluation, Model

INTRODUCTION

A city is a relatively large, dense, and permanent settlement consisting of socially heterogeneous individuals (Wirth 1938, Pijanowski *et al.*, 2009, Ziari and Gharakhlou, 2009, Kalantari and Asadi, 2010, Aminzadeh and Khansefid, 2010). According to Aristotle, cities are places which contain happiness and security for its residents. Plato also defines a city as a place suitable for citizens to live in and also the birthplace for civilizations. In fact, at the time when human beings achieved a relative amount of peace and safety and security in thought and action, cities were generated. Finally, with the passage of time and creation of cities, the human race gradually started thinking about realizing ideals such as justice, social relations, lawfulness, and beauty (Broadbent, 1990). Taking the abovementioned definitions into consideration, this fundamental question comes to mind that do present day cities actually meet human beings' spiritual and physical needs?

At the same time, in recent years metropolises are faced with predicaments such as excessive population and the conditions arising out of it, including pollution, dirt, congested traffic, destruction and despoliation of natural resources, to name a few. In the same manner, Tehran is also faced with managerial, environmental, infrastructural, physical, social and economic problems which collectively decrease the city's environment quality (Nabi Bidhendi *et al.*, 2008, Nasrabadi *et al.*, 2008). As a most evident many of Tehran's regions has been considered "critical" for their few green spaces and vegetation cover and high polluted air conditions (Faryadi, Taheri 2009). Based on the studies conducted by the Mercer Institute of Human Resources in 2007, from the standpoint of city environmental quality, with an obtained score of 52.8 Tehran was ranked 177 among the 215 major cities of the world. In this ranking the cities of Zurich, Vienna and Geneva with scores of 108, 107.9 and 107.8 respectively held the first to third places. Vancouver and Auckland held the fourth and fifth places, and the three cities of Munich, Dusseldorf and Frankfurt held the subsequent ranks (MHRC, 2007). On the other hand, Tehran's environmental quality was evaluated as "average" with a score of 53.3% in a similar study that was conducted in 1996 (Tabibian & Faryadi, 2002). These numbers demonstrate that Tehran has a relatively long way to go in order to reach an acceptable and suitable quality based on national and

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international standards. Therefore, determining the quality of Tehran's environment creates the opportunity for a more precise, insightful, organized plan for improving its quality and moving toward a more sustainable city. In this regard, similar studies have been conducted by researchers and national and international organizations based on determining and evaluating a collection of city environmental quality indicators. Urban sustainability indicators(Mega and Pederson,1998), Indicators of sustainable development, Encyclopaedia of Earth (EOE) (Bartelmus, 2008), Quality of Living global city rankings Mercer survey (MHRC, 2007) , Sustainability Plan for the City of San Francisco (SCS, 1997) , Santa Monica sustainable city plan (SCC, 2006), a Model for evaluation of urban environmental quality (Bahrainy and Tabibian, 1999), Evaluating of the urban environmental quality of Tehran (Tabibian and Faryadi, 2002) and Evaluation of environmental quality of the city of Tehran (Seifollahi, 2009) are a number of these studies. In order to choose the desired indicators in the present study, the total indicators used in the aforementioned studies and other similar sources have been compared and their proficiency for evaluating Tehran's environmental quality have been analysed. These studies showed that some of the indicators introduced in them were much more general or much more trivial than the measures of city indicators, lacked measurement criteria and importance coefficients and in some cases even had ambiguities in concept. For instance, the indicators of "suitable climate" (MHRC, 2007) and "public health" (SCS, 1997) lack the measurement criteria are to some extent ambiguous. Also, in some cases the indicators introduced are not compatible with Iran's cultural and social conditions or do not have documented statistics in Iran's official organizations; the "local government" indicator (Westfall, 2001) is one such example. In the end the model and collection of indicators introduced by Bahrainy and Tabibian (1999) and Tabibian and Faryadi (2002) which themselves were the results of comparative studies between national and international indicators and to a great extent are compatible with the essence of environment quality evaluation in Iran's cities, were chosen as the total basic indicators. In the subsequent stages, the attempt was made to substitute indicators that had more clarity, contained measurement criterion and to the extent that was possible, had accessible documented information and statistics. On the other hand, for the feasibility of the evaluation from the standpoint of time and executive expenses, the most comprehensive and proficient indicators have been chosen from the similar indicators.

Finally the model and collection of chosen indicators with the adjusted categorization and important coefficients have been used in order to evaluate the quality of Tehran's environment. Subsequently, after identifying the problems of Tehran's environmental quality, planning solutions for decreasing the inadequacies and improving the quality have been presented. It must be mentioned that evaluating Tehran's environmental quality according to the mentioned model demonstrates part of the reality which has been stated in mathematical language and based on the country's official statistics; thus, there is the possibility of differences between the model with its chosen indicators and existing realities.

MATERIALS & METHODS

The area under study is the city of Tehran's 22 districts with an expansion of approximately 730 square kilometres and a population of more than 7.5 million people (in 2006) which have been divided into 119 zones and 362 quarters based on administrative divisions (TSY, 2006). The main research method is based on usage of indicators. An indicator is a marker that is used for marking or showing a special action, path or state. In fact, each indicator is a determiner which explains the cause and effect elements and the actions and consequences of policies (Westfall, 2001). In the present study, in order to obtain indicators suitable for evaluating the quality of Tehran's environment, in the first step a comparative analysis of the varied categorizations and models of the introduced indicators in various researches has been carried out (Table 1). This has led to the choice of the preliminary model and categorization for the evaluation indicators collection. As mentioned earlier, the main structure for the model used in this research has been extracted from the model of evaluation of urban environmental quality (Bahrainy and Tabibian, 1999) and its application which had been tested in evaluating the quality of Tehran's urban environment (Tabibian and Faryadi, 2002). Then in the following stages a number of substitute indicators were identified and chosen during a comparative analysis and placed in the aforementioned model. Table 1 shows an example of comparing various models of indicators based on their essence, so that in next stage the abovementioned model and collection was adjusted based on the substitute indicators and obtaining documented and statistical data. The final model shows the chosen indicators and their importance coefficients (Fig. 1).

The model consists of six layers; in the first layer there is the "final indicator" which shows the total amount of urban environmental quality. The final indicator has a 423.5 important coefficient which is reached from the sum of the measures' importance coefficients in the lower layers. Measure's importance coefficient has been arbitrarily considered for each

Table 1. Comparative analysis of indicators presented by various studies for evaluating the urban environmental quality of cities

MHRC 2007		**Bahrainy, Tabibian 1999**		Bartelmus (EOE) 2008		**Westfall 2001**		**SCC 2006**		**SCS 1997**	
Indicator	Nature	Indicator	Nature	Indicator	Nature	Indicator	Nature	Indicator	Nature	Indicator	Nature
Sufficient health centres	General; lacking evaluation criteria; lacking importance coefficient; unclear	Natural environment	Consideration of details; clarity; lucidity; has capacity to be measured; has importance coefficient	Air quality	Extensive range of indicators; No attention to detail; lack of evaluation criteria; lack of importance coefficient	Justice	Consideration of details; Clear and lucid; has capacity to be measured; lack of importance coefficient	Natural resources	Unclear; general; Ambiguous; Lacking importance coefficient	Natural resources	Unclear; general; Ambiguous; Lacking importance coefficient
		Welfare and health		Biodiversity		Urban productivity		Environment quality		Public health	
Healthy water, Gas, Telephone, Electricity		Safety and security		Ozone destruction		New technology		Variety in the ecosystem		Open spaces and views	
		Housing		Agriculture and food		Housing		Human needs		Housing	
Suitable climate		Economy and employment		Economy and economic development		Urban land		Economy and its effects		Economic development	
		Education		General knowledge and education		Health and education		Globalization		Social environment	
Efficient public transport		Social environment		Environmental justice		Population		Natural and man-made disasters			
		Urban facilities		Water and wastewater		City services					
				Energy changes and climate							
Low traffic congestion		Energy		Public transportation		City environment					
		Transportation		Parks and urban outdoor spaces		City transportation					
				Solid trash							
				Dangerous material							
Small amount of natural disasters		Art and cultural heritage		Human health		Local government					
		Artificial environment		Risk management		Urban management					

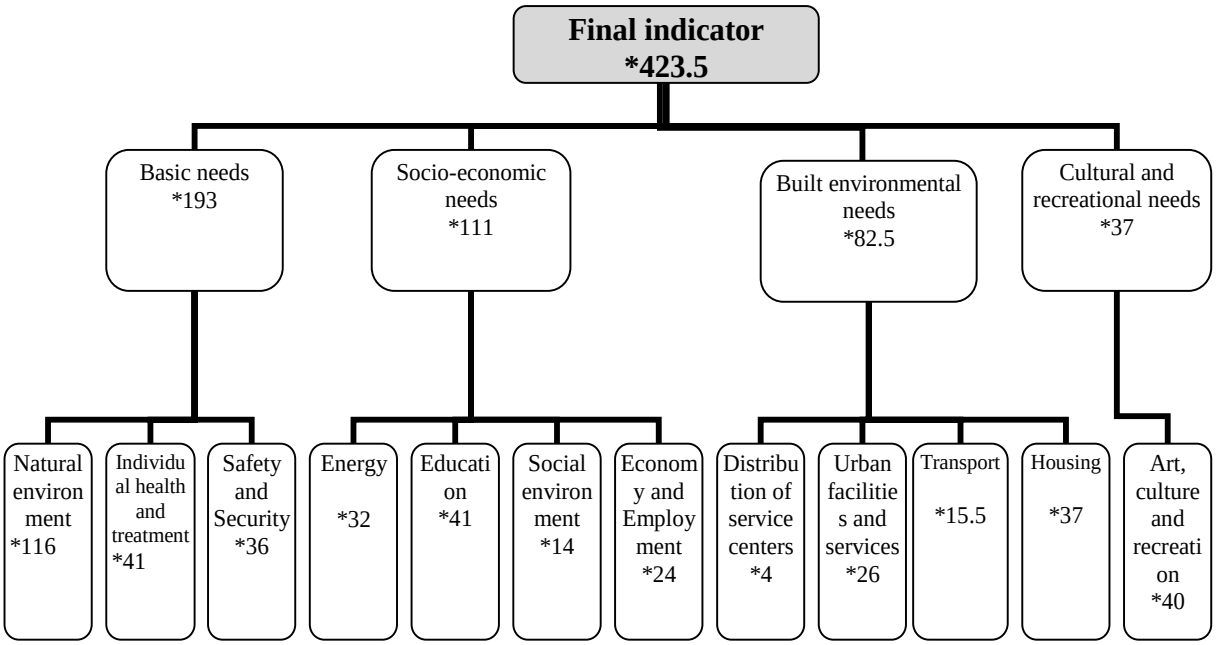

Fig. 1. Final model for evaluating Tehran's environment quality

"*"Shows the important coefficient numbers

measure. In the second layer there are four groups of "main indicators": basic needs, built environmental needs, cultural and recreational needs, and socio-economic needs. In the third layer twelve "main indicators" such as natural environment, individual health and treatment, and so on are placed. In the fourth layer each of the main indicators has been divided into "secondary indicators", such as air pollution, climate and so on. In the fifth layer the subdivision of the secondary indicators known as "environmental factors" has been divided into smaller sections, such as treatment networks, human resources, rescue operations, accidents and so on. Finally, the sixth layer contains "measures" such as the number of general practitioners, the amount of carbon monoxide, the average amount of rainfall and so on. As it can be observed, measures are the smaller form of the indicators of the higher layers which can be measured. In other words, "measures" are in the lowest layers of the model and "the final indicator" is in the highest layer, in a way that with a mathematical addition formula in a bottom -up order, first the sum of the "measures", then "environment factors" followed by "secondary indicators", "main indicators", "group of main indicators" and finally "the final measurement of city environment quality" are calculated respectively.

For evaluation, documented, accessible statistics and information from various studies and organizations have been collected. The most important among these resources are the following: TSY, (2006), SCI, (2006), statistical reports and documents from related public or private organizations and institutions such as: TFD, (2006), TTTC, (2007), TCAQC, (2006), TMTITO, (2006), TMRO, (2006), MHRC, (2007), IHG, (1972), TOEP, (2004), Centre for Environment and Earthquake Studies of the Greater Tehran Area & Japan International Cooperation Agency (JICA, 2001).

In order to further clarify the concept of the model and its indicators, following is an example of the method of calculation. For instance the "natural environment" indicator is one of the twelve indicators in the third layer which in the fourth layer is divided into the four secondary indicators of "air pollutants", "water resources", "soil resources", and "climate" with importance coefficients of 51, 34, 21, and 10 respectively. The total importance coefficient for the four above-mentioned secondary indicators adds to a 116 importance coefficient for the "natural environment" indicator. In the same manner, for instance 51 as the importance coefficient for the secondary indicator of "air pollutants" itself is the added total of the importance coefficient of five evaluators; Pm_{10}, NO_2, SO_2, CO, O_3 with the importance coefficients of 9, 12, 11, 9 and 10 respectively (Fig. 2). Calculations for the amount of the indicators' quality is done in a similar manner of first hierarchically adding the amount of the measures' quality in the lowest levels, continuing to the next levels until finally reaching the final quality for the city (in the first layer of the model).Finally after calculating the quantitative amount of each of the measures, secondary indicators and the other levels of the model, the amount of the quality of each is determined and evaluated according to Table 2.

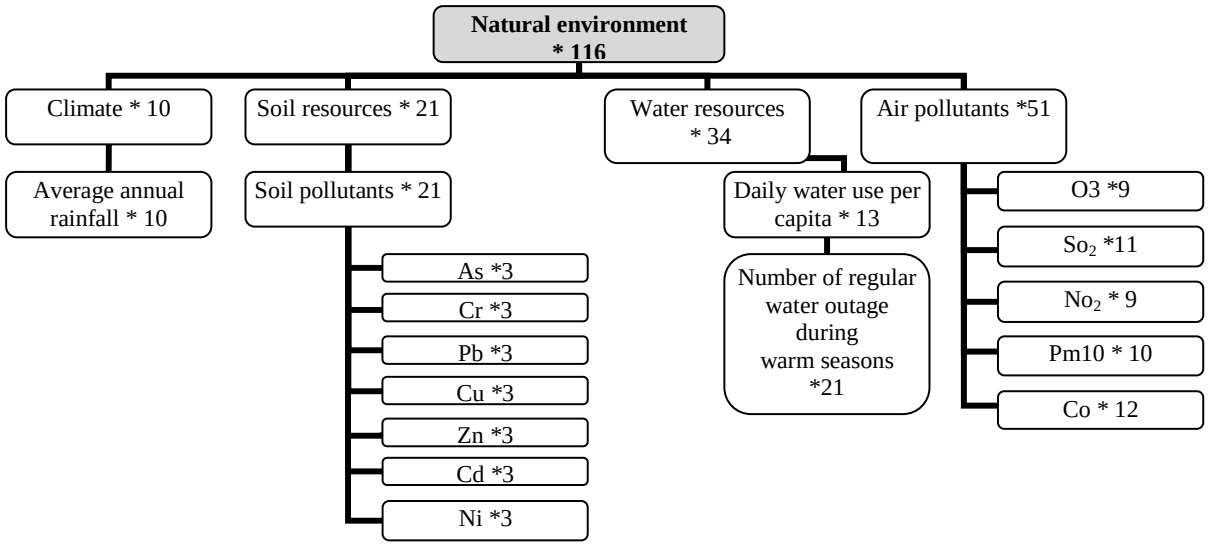

Fig. 2. Tree chart of "natural environment" indicator
"*"Shows the important coefficient numbers

Table 2. Categorizing of the quality amounts

Condition	Amounts
Best quality (very desirable)	80% and more
Desirable quality	60-80%
middle ranking quality	40-60%
Low quality	20-40%
No quality (undesirable)	20% and less

(Tabibian and Faryadi 2002)

Tehran's environmental quality denoted by the twelve indicators: after carrying out the evaluation in the manner explained in the calculation and research method, Tehran's environmental quality in 2006 denoted by the twelve indicators has been calculated as demonstrated in Table 3. The resulted amounts show the quality of each main indicator compared to the highest quality considered by the model for that indicator.

Table 3. Twelve main indicators of Tehran environmental quality

Natural environment	65%
Individual health and treatment	91%
Safety and security	19%
Energy	62%
Social environment	43%
Education	85%
7. Economy and employment	50%
8. Service centres distribution	50%
9. Urban facilities	60%
10. Transportation	40%
11. Housing	71%
12.Culture, Art, Recreation	21%

Based on the sum of the twelve main indicators (first model's layer), the scores of the four main indicator groups (model's second layer) were calculated in the next step. The calculations in all layers are based in following meanings:

E_{i2}: Raw weight of each measure in 4 hierarchical orders: i=1-5

0				60
0		30		60
0	20		40	60
0	15	30	45	60

E_{12}= 60: The raw weight of each measure in its best condition which always is 60 in every layer

D: Measure's importance coefficient, which has been arbitrarily considered for each measure

ΣE_{i3}= $F_{i2} \times \Sigma D$: Current situation of indicator i=1-5

ΣE_{13} = $E_{12} \times \Sigma D = 60\Sigma D$: Best situation of indicator

N: Total number of measures in the each main indicator group

N: $n_1+n_2+n_3+.....n_n$

Q = The amount of Quality: $\frac{\text{Current situation}}{\text{Best situation}} \times 100$

"Basic needs" main indicator group (natural environment, individual health and treatment, safety and security):

N= 15+ 10+ 4= 29	Total number of measures in the "basic needs" main indicator group:
n_1= 15	Total number of evaluators in the "natural environment" main indicator
n_2= 10	Total number of measures in the "individual health and treatment" main indicator
n_3= 4	Total number of measures in the "safety and security" main indicator

Current situation = ΣE_{i3}^{29} = (4560+2230+405) =7195

Amount of the "basic needs" main indicator group quality in Tehran (2006):

Best situation = $E_{12} \times \Sigma D = \Sigma E_{13}$

$60 \times (116 + 41 + 36) = 11580$

$$Q = \frac{7195}{11580} \times 100 = 62\%$$

Based on Table 2, Tehran had a desirable quality in 2006 with a score of 62% in the "basic needs" main indicator group.

"Socio-economic needs" main indicator group (energy, social environment, education, economy and employment):

N=4+ 2+3+2= 11	Total number of measures in "socio-economic needs" main indicator group:
n_1=4	Total number of measures in "energy" main indicator group
n_2=2	Total number of measures in "social environment" main indicator group
n_3=3	Total number of measures in "education" main indicator group
n_4=2	Total number of measures in "economy and employment" main indicator group

Current situation= ΣE_{i3}^{11} = (360+1200+2160+720) = 4440

Best situation= $E_{12} \times \Sigma D = \Sigma E_{13}$:

$60 \times (32+14+41+24) = 6660$

Amount of the "socio-economic needs" main indicator group quality in Tehran (2006):

$$Q = \frac{4440}{6660} \times 100 = 67\%$$

Based on Table 2, Tehran had a desirable quality in 2006 with a score of 67% in the "socio-economic needs" main indicator group."Built environmental needs" main indicator group (service centres distribution, urban facilities, transportation, and housing):

N= 1+5+4+2=12	Total number of evaluators in "built environmental needs" main indicator group:
n_1=1	Total number of evaluators in "service centres distribution" main indicator
n_2=5	Total number of evaluators in "urban facilities" main indicator
n_3=4	Total number of evaluators in "transportation" main indicator
n_4=2	Total number of evaluators in "housing" main indicator

Current situation=$\sum_{i3}^{12} E_{i3}$ = (120+940+365+1700)= 3125

Amount of the "man-made needs" main indicator group quality in Tehran (2006):

$$Q = \frac{3125}{5130} \times 100 = 61\%$$

Based on Table 2, Tehran had a desirable quality in 2006 with a score of 61% in the "built environmental needs" main indicator group.

"Cultural and recreational needs" main indicator group (art – culture – recreation):

N: n_1= 4 Total number of evaluators in "cultural and recreational" main indicator group:
n_1: Total number of evaluators in art – culture – recreation indicator =4

Current situation= $\sum_{i3}^{4} E_{i3}$ = (465)

Best situation= $E_{12} \times \Sigma D = \Sigma E_{13}$ 60 × 37=2220

Amount of the "cultural and recreational needs" main indicator group quality in Tehran (2006):

$$Q = \frac{465}{2220} \times 100 = 21\%$$

Based on Table 2, Tehran had a low quality in 2006 with a score of 21% in the "cultural and recreational needs" main indicator group.

Final amount of Tehran's environmental quality (2006)- In the end, by adding the results of the four groups of main indicators (basic needs, socio-economic needs, man-made needs, cultural and recreational needs) the total score of the final amount is calculated as follows:

n=4 Number of groups of main indicators (basic needs, socio-economic needs, man-made needs, cultural and recreational needs)

Current situation :

$$\sum_{i3}^{4} E_{i3} = (7195 + 4440 + 3125 + 465) = 15225$$

Best situation

$$\sum_{i3}^{4} E_{i3} = (11580 + 6660 + 5130 + 2220) = 25590$$

$$\text{Final amount of quality} = \frac{\text{Current situation total}}{\text{Best situation total}} \times 100$$

$$\frac{\sum_{E_{i3}}^{4}}{\sum_{E_{I3}}^{4}} \times 100 = \frac{15225}{25595} \times 100 = 59\%$$

Therefore, in 2006 Tehran possessed more than half of this model's expected quality with a collective score of 59.5%. This percentage demonstrates Tehran's average environmental quality in the studied year (2006) based on the presented model.

RESULTS & DISCUSSION

As it was observed, *the final amount of Tehran's environmental quality* was approximately calculated to be 59.5%. This amount has been derived from the scores achieved by the four groups of main indicators (basic needs, socio-economic needs, built environmental needs, cultural and recreational needs). "Basic needs" with a score of 62%, "socio-economic needs" with a score of 67%, "built environmental needs" with score of 61%, and "cultural and recreational needs" with a score of 21% placed Tehran in the middle ranking of environmental quality. A general comparison between the evaluation results from the viewpoint of four main indicator groups show that although "basic needs" and "socio-economic" needs have an important role in determining Tehran's environmental quality based on their respective importance coefficients of 193 and 111, the "cultural and recreational" main indicator group with a mere importance coefficient of 37 which allocates only 8.5% of the total importance coefficients, is the most important factor in decreasing Tehran's environment quality in 2006. In the main indicator group of "cultural and recreational needs" which incorporates the art, culture and recreation indicator, insufficient exploitable sport areas per capita and insignificant library use per capita are the main reasons for the low final quality of this main indicator.

In the "basic needs" main indicators group, the "natural environment" indicator with a score of 65%, the "individual health and treatment" indicator with a score of 91%, and the "safety and security" indicator with a score of 19% were effective in their group's 62% score. In the natural environmental section, the

soil's desirable conditions due to the low density of heavy metals, average rainfall in Tehran and providing the residents with drinking water despite insufficient regional water resources are among the effective factors on Tehran's desirable situation in this group. It must be added that only the "daily usage of drinking water per capita" measure which is a subdivision of the "natural environment" indicator, contrary to other measures has received a low score due to the excessive use of drinking water by residents.

Regarding the "individual health and treatment indicator", the effective factors that helped this group achieve a very desirable quality were the high percentage of vaccination of children under the age of one, decreasing the amount of patients affected to pulmonary and non-pulmonary tuberculosis to an middle ranking amount, no cases of malaria, and presence of specialist doctors and general practitioners, and also the existence of the necessary number of public and private hospital beds (public and private hospitals) and even more than necessary.

With regard to the "safety and security" indicator, the high stats of in-city car accidents and robberies across the city, and also more than half of the city's regions being in an average-to-high danger zone at the time of earthquakes were reasons for Tehran's quality to be 19% in this indicator. It must be mentioned that in this evaluation, Tehran achieved desirable quality regarding the minimum time in which fire stations dispatched help.

Regarding the "socio-economic needs" main indicator group, it can be observed that even with a variety of economic and social problems in metropolises, Tehran was able to achieve 67% of the model's expected quality in this group. As the scores obtained by the four "main indicators" of this group demonstrate, the "energy" main indicator with a score of 62%, the "social environment" main indicator with a score of 43%, the "education" main indicator with a score of 85%, and the "economy and employment" main indicator with a score of 50% were all effective in this group achieving a 67% quality. In the "energy" indicator, Tehran's desirable quality was due to the number of regular gas outages in cold seasons, high percentage of urban gas coverage and also the city's stable condition from the viewpoint of average electricity outage period. Regarding the "social environment" indicator, Tehran's undesirable quality (no quality) of divorce rate and the city's very desirable conditions for family size caused to its middle ranking place. With regard to the "education" indicator, Tehran's desirable quality was due to illiteracy rate (6.4%) and also 100% radio and television coverage across the city and the desirable rate of signing in elementary school. Regarding the "economy and employment" indicator, the city's middle ranking quality was due to unemployment and inflation rate.

In the " built environmental needs" main indicator group, the "public service centres distribution" indicator with a score of 50%, the "urban infrastructures" indicator with a score of 60%, the "transportation" indicator with a score of 40%, and the "housing" indicator with a score of 71% were effective in their group's 61% quality score. Regarding the "public service centres distribution" the average number of vegetable and fruit stands and bazaars throughout the city has lead to an middle ranking quality in this indicator. With regard to the "urban infrastructures", insufficiency of urban telecommunications and information technology centres, the city's low quality in the aspect of wastewater piping networks on the one hand and sufficient and even excessive amount of phone landlines, high percentage of recycling house waste and also the desirable amount of post office boxes throughout the city on the other hand, have all lead to the achievement of desirable quality in this group.

In the "transportation" indicator group, the desire quality of public transportation fleet per capita (number of people per vehicle), small share of bicycles in intercity travelling, and also the middle ranking percentage of using public transportation for inter-city travelling has lead to an middle ranking quality score in the group.

Achieving a desirable quality score in the "housing" indicator demonstrates the city's suitable condition in this regard, while at the same time providing residents with housing has always been one of the main problems of the citizens of Tehran. The reason for this contradiction is related to the type of chosen measures based on the existing statistics and information, most of which emphasize in production of housing (measure of "number of families' ratio to housing units") and also buildings' conditions from the viewpoint of sustainability and strength. However, the major problem in housing is related to imbalance between the houses built and provided on the one hand and the housing applicants' financial ability; a problem which is more related to the city's economic domain rather than housing.

With regard to the "cultural and recreational needs" main indicator group, the main indicator of "art, culture, and recreation" was the reason for this group's 21% quality score. Insufficiency of exploitable sport areas per capita, library usage per capita and city parks per capita, as well has the low per capita of museums per 100000 people, are all the main reasons behind Tehran's low quality in this indicator.

CONCLUSION

The main result for this evaluation was calculating the final amount of Tehran's environmental quality in 2006 (the census year based in this research). Based on this evaluation, Tehran achieved more than half of the best quality expected, that is, 59.9%. Comparing this result with the final amount of Tehran's environment quality as 53.3% in a similar research conducted in 1996 (census year) shows that Tehran's environmental quality has slightly increased over the past ten years.

Observing this process can signify the city's movement towards a more liveable and more sustainable city. On the other hand, observing these results can make the city's management and planning authorities aware of the city's points of strength and weakness. Finally, it can be asserted that such an insight facilitates major decision-makings regarding the execution of development programmes. Accordingly, it seems that creating an integrated urban management approach can have a major role in solving many of Tehran's problems and speeding up the process of improving its environment quality. Although obviously Tehran's municipality is not capable of solely realizing this integrated management and it requires an all-inclusive cooperation on the part of the people and other related sections.

Another important result is providing a suitable model for evaluating the city's environment quality based on a collection of environment indicators. The present model is the result of comparing and analysing similar models and selecting more suitable indicators based on available data and measurable indicators. Therefore, the model presented in this evaluation is an adjusted and harmonized model which can be used for evaluating the environmental quality of many other cities. This model's dynamism depended on information input and substituting correct information in it which, in a cumulative movement from bottom -up, can explain city environmental quality. Also, the research's results clearly indicate that although in the presented model a numerous amount of factors constituting the turban's environmental quality are presented through a limited amount of measures (54) or measurable and more comprehensive indicators, a relatively thorough evaluation of cities' environmental quality is possible to a high extent using of this model.

Considering the evaluation results, some planning strategies for improving Tehran's environmental quality are presented below. The strategies are categorized based on the most important identified problems.

For decreasing the high traffic and high amount of cars it is suggesting employing intelligent control and management systems, developing transportation rail lines (urban trains) and more use of public transport in inter-city travelling, and increase special bicycle trails throughout the city.

To increase the sport places per capita is suggests for establishing new sport centres throughout the city and its neighbourhoods and installing sports equipment in city parks in order to create suitable sport areas. For decreasing the high divorce rate it is suggesting to hold educational programs regarding the legal matters in marriage for young men and women who are on the verge of getting married, promote families' knowledge regarding women's rights, and establish marriage council centres and make marriage councils before marriage obligatory. To decrease the repeated and long time occurrences of power outage it is suggests for moving toward privatization and decreasing cities' dependency on the national powerhouse network through creating new powerhouses around cities. To increase the library use per capita in city it is suggests for increasing libraries' work hours and improving their services, establishing public and specialist libraries throughout the city, and promoting the culture of book-reading and using libraries. To decrease of high air pollution it is suggests for standardizing new vehicles, eliminating timeworn vehicles, improving public transport, improving fuel quality, technical examination of vehicles, and traffic management and education. To increase the number of hospital beds it is suggests for increasing the number of beds in public instead of private hospitals since most of current beds are prepared in private hospitals which contains a very low occupation coefficient. To decrease the high rate of in-city car accidents it is suggesting for improving the content and performance of driving laws, prohibiting the use of cell phones while driving, driving below the speed limit, complete regard for driving laws, and standard number of passengers in cars. To decrease the high inflation rate it is suggest for using monetary policy tools (selling partnership papers, decreasing the amount of loan payoffs) and transition of incumbency activities of the government toward policy making and supervision.

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