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Evaluation of Urban Sustainability from Environmental Perspectives (Case Study: District 5 of Municipality Of Region 20 of Tehran)

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Abstract

With the development of various discussions about the environment and a deeper understanding of the devastating consequences of such development, the paradigm of sustainability in the world was formed and this paradigm can be considered as the most common and most useful paradigm in the century. Given the importance of sustainability, this paper seeks to identify internal and external factors affecting the ecological situation in district five in form of strengths, weakness, opportunities and threats facing the study area, feasibility and environmental capabilities to provide the best strategies and considerations in order to achieve regional sustainable development based on spatial-temporal considerations. SWOT technique was used to identify the environmental accelerating and slowing internal (strengths and weaknesses) and external factors (opportunities and threats) and providing scientific and practical strategies in order to strengthen the environmental study area to achieve the sustainable development. Also, AHP model was used to prioritize the strategies. The research method is analytical-descriptive based on field and library studies. Results obtained the combined model SWOT_AHP, based on pairwise comparisons made between the different levels of decision-making and hierarchical model including options, criteria and targets show that the type of defensive strategy has relative preference compared to other strategies.

Keywords: Sustainability, Strategy, Environmental Structure, District 5

Introduction

Currently, people faced with unprecedented challenges in the field of environment. There is broad agreement on the issue that the ecosystem of the Earth can not tolerate current levels of economic activity and the growing consumer, because the pressure is increased on nature. However, estimates of the United Nations (global GDP) reported doubling of production within 18 years. One of the main reasons for this increase is global population growth. In 1950, the world population was 2.5 billion people, while the figure currently (2012), has reached 7 billion people and by the middle of the 15th century (XXI), may be reaches to ten billion people. (Sasanpour, 2010: 24) Another important factor is increasing per capita consumption of energy and raw material consumption at least in the last forty years and its growth rate was even higher than population growth rate.

Followed by an unprecedented increase in the proportion of urban population, harmful consequences for the biosphere and continuation of this growing urbanization, especially in developing led to crisis and a warning of unsustainable urbanization. (Rahnamaei et al, 2006: 178) Introduction of sustainable development as the main theme of the third millennium is result of different aspects of the biosphere and human life (Gharakhlou et al, 2006: 157)

In Iran, rapid and unplanned development and environmental considerations in urban centers is causing the imbalance of natural ecosystems by sharing resources, elimination of marginal lands, orchards, forests, and ultimately the creation of incompatible land uses, water pollution, air, soilon a large scale of the urban environment.

In the meantime, metropolis of Tehran as a capital faces problems and advantages and has provided great opportunities for citizens with over 12 million inhabitants within legal limits province as the largest metropolitan complex. These population lead to complications in the city with a variety of environmental problems such as air pollution, water shortage and high density urban traffic (Tabibian et al., 2001: 2)

By evaluating the quality of urban environment, the current study wants to answer whether Tehran is sustainable in term of factors shaping the environment or not and what is the action to improve it.

Research background

Consulting Engineers of environmental monitoring (2004) conducted a study entiteled "research and development of environmental criteria and regional urban development plans and evaluate the environment". This study, in the first step provides a correct and complete preparation of the environmental impact of development projects, classification and presentation of data, and in the second step, the environmental provisions applicable to types of projects. Finally, in last step we have tried to analyze a number of key points on how to set principles and how to predict and analyze the collected works of audiences and stakeholders in the environmental assessment. Another activity of the works are:

Vital Environmental indicators: performance indicators and scoring models for sustainable development planning: In this article defines the criteria that the production capacity of natural resources and the use of potential resources, economic and environmental benefits and effects, limit environmental pollution; risk tolerance limits the capacity constraints and challenges were discussed. At the end of the study, examples of thematic indices are presented to prove the efficiency in resource assessment, economic evaluation and strategic development planning. (Schultink, 2000)

Explaining the criteria and indicators of sustainability in residential neighborhood: The present study is an attempt to address the sustainable community recognition of sustainability criteria on a scale residential neighborhood and to focusing on the conclusion of different perspectives, the definition of sustainability criteria will be provided at the local level that documented the concepts and dimensions of sustainability on a global scale.

At the end of this study, with emphasis on the economic, social, cultural, environmental sustainability as a key component of the city on a global scale, each of the three component indexes measure of sustainability on a scale basic residential neighborhood are examined. (Noorian et al, 2008).

The book "challenges of the urban environment" written by Mohammad Ali Firoozi and published in 2009 by the university. The Present book examines environmental change and urban spatial dimensions causing today's challenges and also water and sanitation issues were explored and transportation and environmental issues in the cities of Accra, New Delhi, Manchester and have been studied.

Methodology

This is descriptive-analytic study. To collect the information required mapping exercise library and field studies were used. According to the study objectives, by referring to documents, information resources (upstream projects) and consultation with experts, capabilities and features, along with the limits of environmental sustainability in the region were prepared. Then, analytical methods AHP - SWOT was used to analyze the information and provide strategies and strategies appropriate to the circumstances and conditions of the study area and to prioritize implementation strategies.

Studies conducted by the internal and external conditions affecting the environmental situation in the region recognized a list of strengths, weaknesses, opportunities and threats facing the region's environmental situation by experts. In the next stage, the strategic adjustment of internal and external factors that are the basis of the strategy, the formation of structure in the hierarchy of AHP to determine priorities and adopt the best strategies were developed.

Analytical Hierarchy Process (AHP) is one of the new methods of multi-criteria decision. (Ghaffari et al, 2010, 61). Expert Choice software was used in the process of AHP and computational techniques to rank and prioritize the strategies set forth in the SWOT model. Also sensitivity analysis performed in the Expert Choice software in order to evaluate the effect of changes in the weighting of criteria (priority) the ranking of environmental strategies District 5 and examine how realistic the final results in prioritizing strategies.

Statistical sample in the priority research strategies, experts and environmental experts, urban management, urban planning and urban development are 30 objects and paired comparisons were based on a questionnaire to determine the priority of the strategy

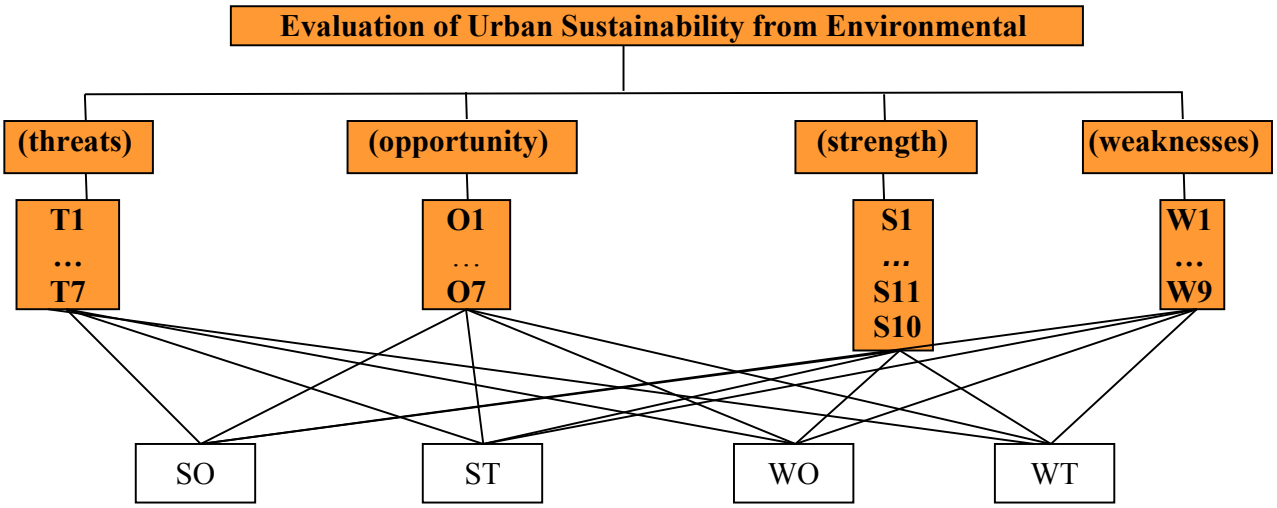

Figure 1: Hierarchical structure research (Resource: Author, 2015)

Theoretical Foundations

Sustainable development is a comprehensive approach to improve the quality of human life in order to achieve economic prosperity, environmental, social and human settlements. (Moztar Zadeh et al., 2014: 84) The most common definition is a definition of sustainability that (WECD) World Commission on Environment and Development is provided. Commission susta defined sustainable development as the needs of the present generation without compromising the ability of future generations to meet their own needs. (Ali Abadi, 2009: 48) .Most important main elements of sustainable development that are considered in this model are:

Social sustainability: creating a culture based on a fair distribution of wealth to reduce the gap between poor and rich

Economic stability: allocation and efficient resource management and self-reliance

Ecological sustainability: to limit the consumption of fuel and other depletable resources, reducing the volume of waste, reduce energy consumption and less environmental pollution

Spatial sustainability: organizing of settlements, more balanced relationship between urban and rural areas, better management of land use for housing and economic activity, preventing

irregular migration, reducing concentration in the big cities (Adeli Gilani, 2010: 24). Forms of sustainable are shown in Table 1.

Table 1: Forms of sustainable city

Resource: Kazemi Mohammadi (1998: 61)	In this city, there is a kind of organic community, the ecological city based on ecological design of the integration processes and reduce the impact of environmental degradation.	Ecologic city	Forms of sustainalbe city
Salehi, 1998: 541 Meshkini, 2007: 34	A healthy city is a city with clean air, clean water, safe food and adequate health care, housing and recreational spaces, but the city was aware that the issue of health and tries to improve it.	Healthy city	
Ziyari et al, 2009: 439 Environment protection organization, 1998	In this green city green space per capita is in acceptable level and pollution Mainstream is lowest per capita waste production and recycling, as well as to separate the best from the origin.	Green city	

The area of Study

District 20 (Shahre Ray) is in south of Tehran with urban area population of about 310,000 people in 1996 (4.9% of the population of Tehran) and in 2011 about 65,000 people. Area of this district is 2973 hectares. District 20 has six regions in the area (Travel Guide Tehran, district 20)

Gross population density is 131 persons per hectare and the gross residential density is 660 persons per hectare and per capita residential land is 15.1 square meters and per capita residential infrastructure is 20 square meters. The average residential plots are 153 square meters, 70 square meter average housing unit basis, average 532 square meter plots the number of floors are 1.56 floors.

Table 2: Twenty districts of Tehran area

District 7	District 6	District 5	District 4	District 3	District 2	District 1	District
	Abbas Abad, Firouz Abad, Taghi Abad	Estakhr, Sar Takht, Nafar Abad Alaein, Valiabad, Shahid Beheshti	Dowlatabad, Shahadat	13 Aban	Javanmard Ghassab, Mansouriyeh and Mangol,Deilama, Hamzeh Abad, Firouz Abadi	Aghdasiyeh, Zahirabad, (Ibn Babviyeh) Ghayouri, safaeiyeh	

Resource: Travel Guide Tehran, district 20

Table 3: Characteristics of the neighborhoods in at district 5 of region 20 of Tehran

Sartakht	Alaein	Nafarabad, Hashemabad	Vali Abad	Beheshti	Criteria
4815 people	24975 people	13667 people	8408 people	9360	Population
410975 squre meter	1469100 squre meter	1000056 squre meter	1070979 squre meter	2168438 squre meter	Area
1399	209	2478	3240	3044	Number of housholds
86%	84%	%85	81%	86%	Literacy percent
31%	12%	20%	36%	20%	Percent of employed
2%	23%	1%	2%	5%	Percent of unemployed

Resource: Municipality site of region 20

Findings of the study

After studies with the Delphi method, expert's opinions about the strengths, weaknesses, opportunities and environmental threats in this area, index and rank were collected. In this part of the research materials (S1-10, W1-8, O1-10 and T1-9) calculations and strategies of empowerment and environmental potential of the area in the form of tables of internal and external factors governing the assessment of the environmental situation environmental and mining were determined (Table 4 and 5)

In the next stage, the total scores using Expert Choice software in conjunction with the criteria (with the opinions of experts) were calculated. Also, the first confirmation of the validity and content of the questionnaire was confirmed by experts with Cronbach's alpha 0.90.

Table 4: Internal factors evaluation matrix of the environmental situation Area 5 (IFAS)

Weakness	Strength
W1 pollution from non-renewable fossil energy consumption	S1 the completion of the wastewater collection channels Emad Avar - Dolatabad Gheysariyeh - Alaein channel
W2 uncertainty and task unfinished buildings that create environmental problems and often a haven for drug addicts and thugs garbage dump	2 transition nuisance to the neighborhood centers and industrial emissions forecasts and alternative non-polluting industry
W3 poor management and lack of comprehensive public to environmental issues	S3 identify and collect unauthorized locations and track the resolution to increase the collection of dry recyclable waste
W4 lack of monitoring and supervision over production and emissions and increasing urban environmental pollutants	S4 annual program areas to address gaps and areas available per capita, green space, technical design and construction and transport and traffic and efficient services to local citizens and local budget for next year
W5 existence of incompatible land uses and activities and obtrusive in the area	S5 speeding up construction projects, including complex raga - Construction of sports facilities Shahid Beheshti - the home of the pool areas - Nafar Abad and Hashem Abad - Vali Abad - home construction greenhouse and Sartakht neighborhood, Vali Abad
W6 growth of pests destroying crops in major canals and channels	S6 completion and operation of the forestry Fatemiyeh Farhangian Park and parks in the south of the boulevard Avini
W7 lack of capacity and lack sufficient channels and environmental efficiency in the utilization of surface water due to the special climate Tehran	S7 Revenues follow up to open parks and teacher knowledge
W8 lack of urban sewage disposal system	S8 large number of NGOs in the field of environmental
	S9 plans to increase levels and per capita urban green spaces

To calculate the weight of each criteria and sub-criteria and compare a couple of them and thus "to determine the priority of each of the following criteria in the hybrid model SWOT-AHP; a hierarchical structure research of objective criteria, sub-criteria and strategy have been created.

Table 5: Evaluation Matrix external factors governing the environmental situation region 5 (EFAS)

Challenges, limitations and threatment	Opportunities
T1 residential damaged uncertainty around the shrine, building complexes with high population density, especially in the south side of town Alaein minimum per capita available and unplanned and accurate	O1 high per capita green space area and create spaces for raising the per capita
T2 there is surface water like Emadavar channel that creates many environmental problems.	O2 waste center station area on the highway Avini
T3 create a huge amount of waste in the area around the shrine because of the old and the new market and the movement of pilgrims at the shrine of Hazrat Abdul's Hasani	O3 empty and agricultural land and green spaces, services and training
T4 distressed areas, especially in the area around the shrine of Hazrat Abdul Azim due to narrow passages major part of the plan mechanization services, the municipality has problems.	O4 possibilities of tourism development in this area in terms of pure existence Abdul Azim shrine and tourist centers in the area
T5 agricultural land on the south side where the environmental pollution increases and is difficult to plan against rats.	O5 professional and effective troops in the environment
T6 out of streams collecting surface water in most of the passages Area	O6 existence of Fourth Development Plan as a document of the twenty-year vision to achieve sustainable development goals
T7 Existence of barren lands high on the sidelines of the possibility of unauthorized discharge of soil and construction debris.	O7 vast resources of economic and technological change and developing clean technologies
T8 existence of itinerant vendors around the shrine of Hazrat Abdul Azim and extra energy that can reduce the area.	O8 waste management and recovery of waste
T9 existence of industries polluting the and annoying	O9 existence of thinking of environmental protection at national and international levels
	O10 existence of huge resources of renewable energies to replace fossil fuels in the country
	O11 existence of appropriate scientific knowledge to deal with environmental problems

Resource: Author, 2015

For comparison test four main criteria the SWOT (strengths, weaknesses, opportunities and threats) in order to determine the best strategy; set sub-criteria entered to the Expert Choice software separately and after paired comparisons; the relative weight of each through special value (final value) final weight of each criterion was calculated.

Paired comparisons and to determine the final weight of all the factors at four levels of study are presented in Table 6. Table 6 shows the effect of criteria and sub-criteria in Quadruplet strategies in an overview using the Expert Choice software.

Table 6: Paired comparison of of factors in Expert Choice Software

Level 1	Level 2	SO	ST	WO	WT	Grand Total
Opportunity (G: .199)	o1 (G: .017)	0.003	0.004	0.003	0.007	0.017
	o10 (G: .020)	0.006	0.008	0.005	0.003	0.022
	o11 (G: .016)	0.005	0.006	0.005	0.005	0.021
	o2 (G: .017)	0.003	0.004	0.003	0.006	0.016
	o3 (G: .016)	0.003	0.004	0.003	0.006	0.016
	o4 (G: .019)	0.003	0.004	0.004	0.007	0.018
	o5 (G: .020)	0.003	0.004	0.004	0.008	0.019
	o6 (G: .017)	0.003	0.004	0.004	0.007	0.018
	o7 (G: .020)	0.003	0.004	0.004	0.008	0.019
	o8 (G: .019)	0.003	0.007	0.004	0.006	0.02
	o9 (G: .019)	0.003	0.008	0.004	0.005	0.02
Opportunity (G: .199) Total		0.038	0.057	0.043	0.068	0.206
Strength	s1 (G: .024)	0.004	0.005	0.005	0.009	0.023
	s10 (G: .022)	0.004	0.008	0.007	0.005	0.024
	s2 (G: .022)	0.004	0.005	0.004	0.008	0.021
	s3 (G: .022)	0.004	0.006	0.004	0.009	0.023
	s4 (G: .023)	0.004	0.006	0.005	0.009	0.024
	s5 (G: .024)	0.004	0.006	0.005	0.009	0.024
	s6 (G: .021)	0.003	0.005	0.004	0.008	0.02
	s7 (G: .021)	0.004	0.005	0.004	0.008	0.021
	s8 (G: .026)	0.007	0.009	0.004	0.01	0.03
	s9 (G: .022)	0.006	0.009	0.005	0.006	0.026
Strength Total		0.044	0.064	0.047	0.081	0.236
Threats (G: .302)	t1 (G: .031)	0.004	0.008	0.004	0.012	0.028
	t2 (G: .031)	0.005	0.008	0.006	0.012	0.031
	t3 (G: .037)	0.006	0.01	0.006	0.015	0.037
	t4 (G: .037)	0.009	0.007	0.006	0.014	0.036
	t5 (G: .036)	0.006	0.01	0.007	0.014	0.037
	t6 (G: .030)	0.005	0.008	0.005	0.012	0.03
	t7 (G: .035)	0.005	0.009	0.005	0.014	0.033
	t8 (G: .035)	0.006	0.013	0.006	0.011	0.036
	t9 (G: .031)	0.008	0.012	0.007	0.01	0.037
Threats (G: .302) Total		0.054	0.085	0.052	0.114	0.305
Weaknesses (G: .272)	w1 (G: .030)	0.004	0.005	0.006	0.012	0.027
	w2 (G: .038)	0.005	0.007	0.008	0.015	0.035
	w3 (G: .037)	0.005	0.007	0.008	0.014	0.034
	w4 (G: .031)	0.004	0.006	0.006	0.012	0.028
	w5 (G: .032)	0.004	0.005	0.007	0.012	0.028
	w6 (G: .034)	0.005	0.006	0.007	0.013	0.031
	w7 (G: .040)	0.005	0.006	0.009	0.016	0.036
	w8 (G: .029)	0.005	0.011	0.007	0.01	0.033
Weaknesses (G: .272) Total		0.037	0.053	0.058	0.104	0.252
Grand Total		0.173	0.259	0.2	0.367	0.999

Based on paired comparisons between the Quadruplet options (SO, ST, WO, WT) and each of the weakness, strength, opportunities and threats and normalization of comparisons and numbers assigned to them that is done by professionals and experts in the expert choice software was performed and results obtained. An example is shown in table 7.

Table 7: An example of paired comparisons between the Quadruplet options

Level 2	SO	ST	WO	WT	Grand Total
o1 (G: .017)	0.003	0.004	0.003	0.007	0.017

The impact of the first time (o1) strategy (SO), (ST), (WO) and (WT) were (0.003) (0.004) (0.003) (0.007). The total impact of the first time point (o1) on Quadruplet strategy is (0.017) . The results of Table 6 shows that the weaknesses (w7) with a score of (0.036) and the threat of the option (t9) by (0.038) and the Strengths of option (s8) with a score of (0.03) and in points the chance criterion (o10) with a score of (0.022) have been the most effective on Quadruplet strategies. In other words, Quadruplet strategies are most affected by these factors.

To determine the effect of each option on the entire hierarchy and sub-criteria research and also to assess the impact of each of these criteria with respect to the alignment of the strategies and operational strategies adopted, the use of analytical charts Rose diagram is recommended. This diagram values obtained with assessment and analysis of individual factors facilitate impact on the adoption of superior strategy and therefore systematic approach to the calculation of the priorities. (Figure 3)

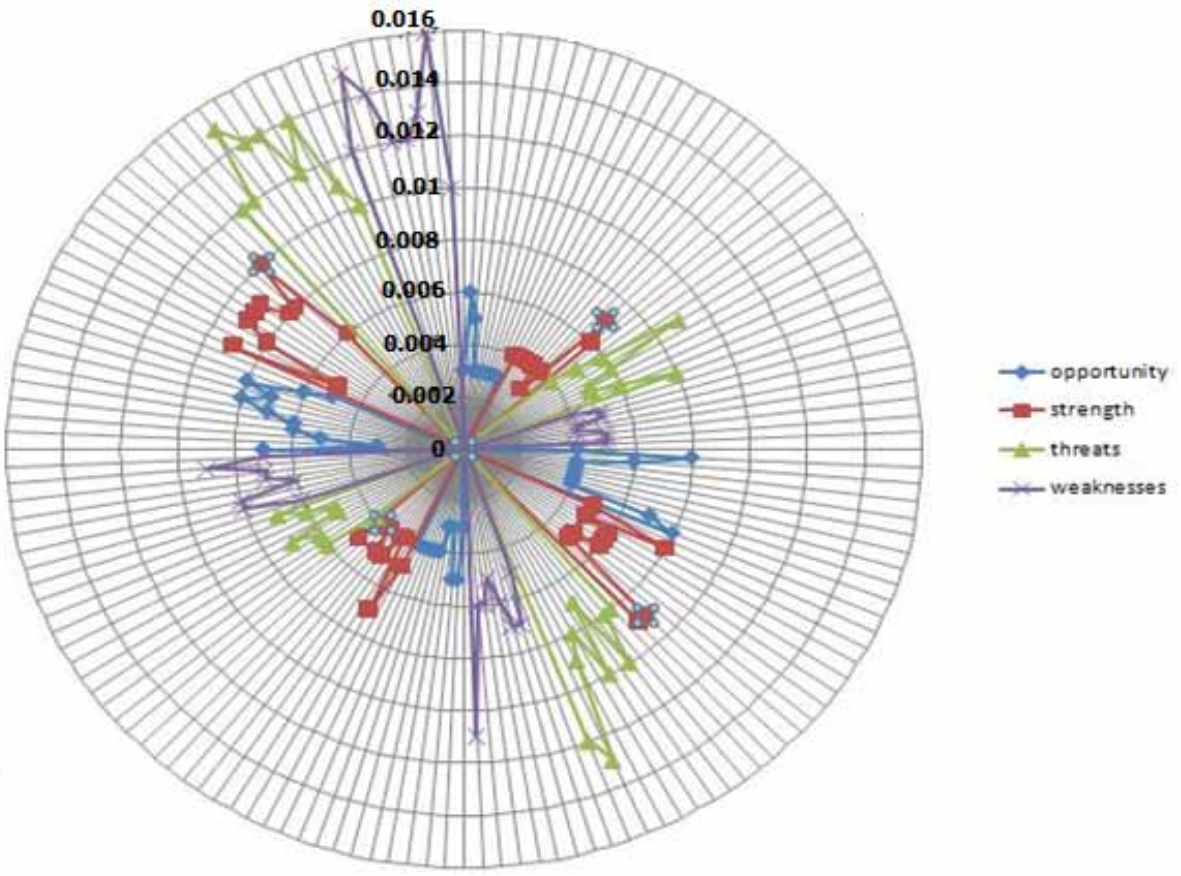

Figure 2: The impact of the standards on Quadruplet strategies

Following paired comparisons, the first two levels and options were calculated as table 8.

Table 8: Comparing the weight of criteria affecting the Quadruplet strategy

Kinds of strategies	Opportunities	Strengths	Threats	Weakness	Final results
SO	0.038	0.044	0.054	0.037	0.173
ST	0.057	0.064	0.085	0.053	0.259
WO	0.043	0.047	0.052	0.058	0.2
WT	0.068	0.081	0.114	0.105	0.368
Final scores	0.206	0.236	0.305	0.252	1

The results of Table 8 shows that opportunities, strengths, threats, weaknesses (either as a single set) at (0.038) (0.044) (0.054) and (0.037) have been effective on the Offensive strategy (SO) Thus the effectiveness of each of Quadruplet strategies of a weakness, opportunities and threats were calculated.

The results of this table indicate that the strategy of WT with a final score (0.363) has the greatest impact on internal and external factors of the environmental situation of the area and the environment in the study area is a dominant strategy.

Previous findings from this phase of the strategy to achieve the ultimate goal of this study (to determine the capabilities and capacities of the environmental situation) states and the results of previous calculations are used in the process of formulating and strategy. These calculations for this area will lead to the formation SWOT matrix.

This study determined the strategy of the environmental situation of the region to prioritize enforcement and the value of each of these strategies in terms of their importance. In this regard the use of Expert Choice software and considering the results of tables and diagrams before the superior strategy was determined by the following diagram (Figure 4).

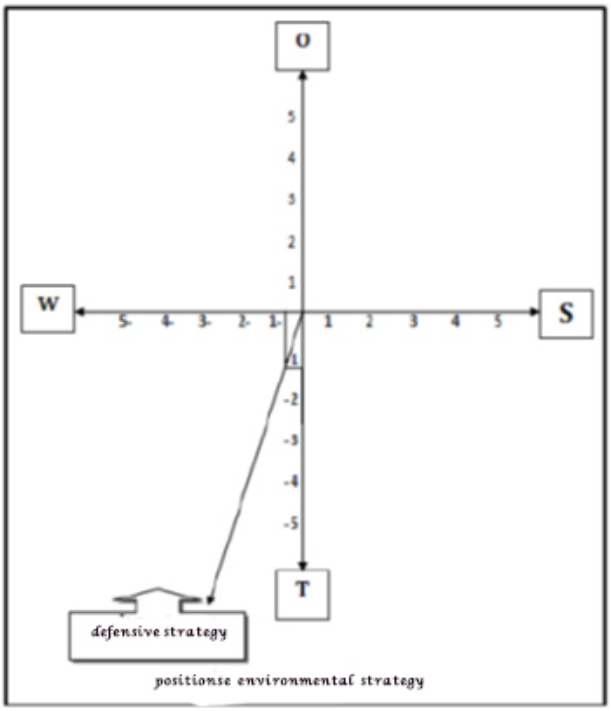

Figure 3: The final graph of SWOT-AHP to adopt the best strategy (Source: author's calculations)

The results of Expert Choice software confirm that the volume and area of the triangle of the weights in the third quarter was higher than other weight trigonometry and prioritize environmental strategy moves towards the region 5 defensive strategy based on the weaknesses and threats (WT) and weight vector from the origin to the point of WT has the highest weight value.

Table 9: Matrix of strategies and solutions to improve the environmental status at District 5 at the region 20 of Tehran

Strategies to promote environment in region 5	Analysis issues	Strategies to promote environment in region 5	Analysis issues
1 - improving the quality of the environment through the organization and development of green spaces and parks with the functioning of urban, regional, local and regional in range 2. The establishment of an appropriate treatment requirements and the use of recycled water in the neighborhood policy and prevention of raw wastewater for agriculture 3. The development of policies for public participation as the main factor in maintaining the urban environment 4. Expanding the use of renewable energy and minimize fossil fuel consumption in the region 5. to reduce dependency on private cars and alternative means of public transport, especially the metro	Diversity strategies	1. development of public transport, particularly rail network and promote the development of production technology and fuel consumption with minimum pollution 2. Modeling approach to urban sustainable development, environmental and strategic partnership with the Committee of urban management 3. institutionalization of environmental management of the municipality and environmental data bank in region 4. The development of the urban environment and levels of expertise in the development and implementation of comprehensive development programs in accordance with sustainable development in the area	Offensive strategies
1. emphasis on the completion of facilities and sewage collection networks in Tehran 2. correct and complete drainage system, collection and transport of surface water in order to increase the water through canals 3. Organizing and refining activities and transfer of pollutants to the outside of the city centers 4. The creation of an integrated management of the urban environment and environmental plans Area 5. Organizing and avoid indiscriminate construction in the vicinity of surface water, groundwater and agricultural lands and orchards	Defensive strategies	1. Strengthening and feeding underground at Karaj and the prevention of contamination of groundwater as part of water supply Tehran 2. organizing and preservation of agricultural land and development of gardens and green spaces in the area 3. Amendment of urban travel demand through the development of ICT in order to achieve the electronic city 4. The gradual replacement of small and medium industries with high technology and clean energy instead of polluting industries and warehouses 5. optimization of waste management and recycling of waste, especially hazardous waste, hospital waste, construction	Revised strategies

Combining AHP method and SWOT of the environmental situation of the area is the highest value obtained confirms the defensive strategy (WT) and the final value is 0.367.

Then, after determining the strategies and priorities and to implementation of strategies set; using the SWOT matrix, and considering the capabilities and potential internal and external and also weaknesses and threats facing the environmental situation at disctrict 5 to combine strategy and implementation strategies related to environmental determining this limit is in line with our sustainability (Table 9)

The next step in the environmental of district 5 of region 20 at Tehran is realistic analysis of the final results and output calculations. A sensitivity analysis can be a systematic method to determine the importance of the evaluation criteria and sub-criteria which influence on the final and decisive strategy or strategies for environmental excellence in the area. In this regard a sensitivity analysis in order to investigate the effect of the weight of criteria (priority) was applied on strategies ranking outlined in the environmental area. Figure 5 shows the sensitivity criteria.

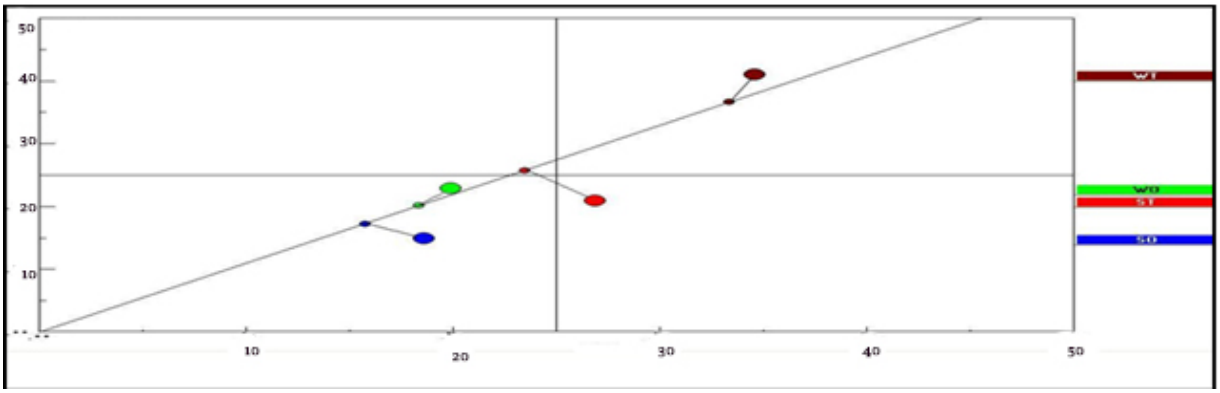

Figure 4: Quadruplet standard two-dimensional sensitivity analysis diagram

The effect of weight changes and their impact on the results of the final four major criteria (superior environmental strategy Area 5) in the Software Expert Choice indicates that the strategy of the ST has the highest sensitivity, and WO strategy has the least sensitivity in environmental area.

Conclusion and recommendations

Sustainable urban development in recent decades gradually became dominant paradigm of modern literature and scientific theory of development and urban planning. Introduction of sustainable development as the main theme of the third millennium of the city results in different aspects of the biosphere and human life. Characteristics of urban communities today lead to the instability of human beings and the environment (natural environment and the built environment).

Environmental problems are considered as one of the major problems as the result of conflict and confrontation with the natural environment. Tehran faces with problems and advantages as a capital and has provided great opportunities for citizens and with over 12 million inhabitants within legal limits province is the largest metropolitan complex shape, metropolis having the aspirations to be residents of other cities in the country.

This population and complications of estimating its needs lead to a variety of environmental problems such as air pollution, water shortage, high density urban traffic, and on the other hand, due to rapid urbanization in the country, changing consumption patterns in society and exogenous development of the country, the massive influx of immigrants from surrounding towns and villages lead to the influx of urban crisis and consequently, the physical development of the city and the degradation and destruction of orchards and agricultural land around the city. This research tried to

identify internal and external factors affecting the ecological situation in district 5 of region 20 at Tehran in form of strengths, weaknesses, opportunities and threats facing the region; feasibility and abilities to learn on the status of its environmental. Results of this research suggest that the potential environmental area, there is still a long way to human enforce make sustainable city.

According to the results derived from a combination SWOT- AHP model and adopt a defensive strategy (WT) on the environmental status of the region, the most important executive options and strategies to deal with the obstacles and improve the environmental sustainability are as follows:

- Provision of sustainable urban development model in partnership with the Committee's strategic approach to environmental and urban management
- Expanding the use of renewable energy and to minimize the consumption of fossil fuels
- Development of public transport, especially the development of the railway network and improve production technology and good fuel efficiency with minimum emissions
- Optimizing waste management and recycling of waste, especially hazardous waste, hospital, construction waste
- Correct and complete drainage system, collection and transfer of surface water in order to increase the water through canals
- Reducing dependency on private cars to public transport, especially metro replacement
- Organizing and filtering pollutants out of the range of activities and transfer centers
- Construction of treatment plants needed in the neighborhood and use of recycled water and prevention of raw wastewater for agriculture policy

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