Journal of Novel Applied Sciences
Available online at www.jnasci.org
©2014 JNAS Journal-2014-3-10/1167-1174
ISSN 2322-5149 ©2014 JNAS

Assessment of Urban Development Plans Affecting on the West Central Area of the City of Mashhad by Compact City Approach

R. Saberifar[1*] and Mohsen Falahat[2]

1- Assistant Professor of Geography, Payam Noor University, Tehran, Iran
2- Student of Geography, Payam Noor University, Tehran, Iran

***Corresponding author*:** R Saberifar

ABSTRACT: Regardless of managers' emphasis on the criteria for sustainable development to achieve to the proportional and livable city, urban design providers do not consider the practice of these criteria. The purpose of this paper is, to evaluate the developmental plans of Mashhad for how to deal with the sustainable development criteria, especially in the approach of the compactness of the west central area in this city and also to study the compliance or non compliance of the compactness for this city. Therefore, in this study the quantitative indicators of compact city set out by descriptive and analytical method and using the AHP model, and then the developmental projects of Mashhad, especially in the western middle district of the city has been evaluated by compact city approach. Results indicate that the detailed design of the western middle area of Mashhad has obtained the highest rate of compliance with the compact city indicators and development plan earned the lowest score of compactness. According to the plan which was already running, it seems that re-evaluation of the goals and procedures can also prevent the credit losses, it can accrue more appropriate benefits to the city and the citizens.

***Keywords*:** Sustainable development, compact city, evaluation, urban plans, Mashhad.

INTRODUCTION

1.1- The Plan

Urban planning in the context of sustainable development is one the main issues raised in the development of urban and regional development pattern (Saberifar et al, 2013, 45). Moreover, the structural complexity of metropolitan and urban population increase since the industrial revolution and the problems of it can be main reason for metropolitan city planners' concern to conduct metropolitan by emphasizing on sustainability. Due to the impressive cultural, historical and economic national and transnational role of Mashhad metropolis, it is no exception.

Major problems such as transportation inefficiencies, high costs of infrastructure, spatial inequality and encroach on the farm land and the project site supporter of the city sustainability of Mashhad when it is remembered as breathing, including problems with Mashhad is the current state of the landscape. These problems have been caused that urban planners and managers search a model for future development and investigate associated complications on the field of management and organize correctly , with a critical approach towards the past development process. To this end, several projects and plans have been implemented in the city.But, despite the huge spending, these projects have not given the expected results. For example, in urban areas design, the focused decentralized pattern has been proposed for the development of Mashhad area, but a variety of factors such as the extent and non-compression of non-compliance, caused the loss of open area between the centralized points that decentralized focused slogan has been tended to intense focus and the next prepared plans have not been able to manage and organize properly the problems associated with this area. However, it seems that some designs are better than the others. Therefore, the aim of the present study is to evaluate the results of these designs and introduce more efficient patterns and give recommendations for resolving the problems of the less successful designs.

1-2 - The importance and necessity of study

Due to the historical records and Sepulcher of Imam Reza (Peace be upon him), Mashhad is the largest religious city in Iran and in terms of population, it is the second largest metropolitan after Tehran and in term of location it has a vast cross-border relations. These factors cause in the special functions for Mashhad which are importance for its regional, national and even international scale (Farnahad, 2005, V. 12). Hence the developed plans for this city have been prepared with a high sensitivity and accuracy and in compilation of them have been considered a particular hierarchy that each level has a certain amount of attention.

For example, on the surface area, Mashhad, unlike many other parts of the country, has enough strengths of economic and social development. Thus, the main strategy in planning and regional development is the redistribution of production factors, labor and community, investment and funds and completion of infrastructure in area surface and decentralization of gravity of Mashhad metropolitan as area center. Given the current situation of Mashhad and regarding the principles of sustainable development and superior goals, the main approach in spatial preparation of Mashhad area is included changing the pattern of the single central development to the focus decentralized model (balance expansion) throughout the region and city of Mashhad (Farnahad, 2005, 41).

In order to the urban set, Mashhad is a geographic area comprising of Mashhad city and its population, manufacturing, services and tourism centers on the direct interaction and economic, social and physical – spatial interdependence and a unit system of housing and activities and services are constituted ongoing and in future. Planning and management of this collection needs an integrated environment management (Farnahad, Volume VIII, 2005). But the defined projects and plans to achieve these goals have not achieved the desired results, and now the city suffers from several problems. So, the managers and researchers face to different questions. Some of these questions are: why these projects have not achieved to the desired objectives and results? Why, despite the inefficiency of these plans, their implementation is still ongoing? Basically, have all these prepared plans had the same results or not? Which of these projects and why have been more successful? And so on. The main objective of this study is to answer this question that which plans prepared based on sustainable development criteria, particularly by compression approach in western central area of Mashhad has released more appropriate outputs and outcomes?

MATERIALS AND METHODS

To assess the developmental plans, especially in the mid-west of Mashhad, the descriptive and analytical method has been used and the evaluation of the results has been carried by using Analytical Hierarchy Process Model (AHP). In this study, the attractive criteria in all introduced trials plans in relation to Mashhad (Capacitance, Mehrazan and new master plan of Mashhad) have been evaluated. For this purpose, firstly by using the theoretical background, the research analytical framework has been set and sub- variables as the main indicators of evaluation, operationally have been defined:

Social criteria*:*

Population density is calculated by dividing the population per unit area per hectare.

Physical criteria*:*

to avoid the horizontal spread that is obtained by dividing the population growth rate to the area growth rate in the project term.

Functional criteria*:*

include the density of residential units per hectare that is obtained by dividing the number of proposed project dwelling units to the space of term ending, and tend to Use mixing that is obtained based on dividing the proposed terms to the total area of the proposed complex according to the percentage.

According to the analysis of the entire process is considered in detail, in this section we avoid describing and explaining them.

1-4 - The purpose of this study

The aim of this study is to investigate the effect of urban development projects on the development of Mashhad, and in particular west central area of the city with an emphasis on compact city components. To this end, various statistical and mathematical methods have been utilized by using the existing indicators and the compliance of this plan with the proposed objectives and criteria of the compression topic should be evaluated.

2 – The study area

In this study, a limited part of the city of Mashhad has been selected as the largest religious metropolis of Iran and the second largest Iranian metropolis after Tehran. This city is located between the highlands Hezarmasjed, Binalood and Chehel & Yek Tan, in the East North region of Great Khorasan and Razavi Khorasan province. Mashhad has broad exterritorial relations with other countries due to the important religious role and this national and international role has raised its requirements and special needs. Now Mashhad Urban development projects are include the Urban Collection Mashhad plan, capacitive master plan, Mehrazan and new master plan which the latter is not yet fully approved. This city has seven planning area and 13 municipal area. Service area is about 30,030 acres and 56,211 acres are in the privacy area. To obtain accurate and applied results and due to various problems and issues, this study has been assigned only a part of the city of Mashhad, i.e. the west central area.

Mentioned areas, with an area of over 4011.5 acres, are assigned a special role in the Mashhad. The importance of the central west area of Mashhad is very high in the spatial and functional structure of this city. The most basic features that distinguishes this area from the others are included.

- Convenient location and proximity to the center of Mashhad;
- Easy access to other areas;
- Have a high level of service,
- Specific expansion of the city and ultra-city scale users and
- Existing different phylum's and functional areas and high population (Parsoomash, Vol. II, 2009, 4).

According to above explanation, the mid -western area is introduced as work zone index effective on city bone and for this reason it has been selected for the scope of the study.

3 – Literature

A lot of books and articles have been written on sustainable development and compact city and its fulfillment strategies, . Despite the fact that several people have studied in this connection, first time, Baraheni (1992) discussed the basic principles to be considered in this context. Later this author has followed these principles in each element and function of the city (1994).9999 The Junck and Burgess (2000), Burton (2001), Junck and et al (2003), Nablyk (2012) and ... entered to this area and the phase of extensive research were carried out that mentioned in this article does not fit all. In Iran, also more intensive studies are in the pursuit of sustainable development, that including the book "The urban sustainable development from thought to work, Bahreyni (2001)", the book "The decentralization and sustainable development in Iran" by Javad Etaat and Zahra Mousavi (2004) and also the book "an Introduction to sustainable Development" by the Saberifar and Mazraawi (2011), "Implementing strategies of sustainable Development", Saberifar and et al. (2013), and.... Also many other research papers presented in this field including "Sustainable Development", Reza Maknoon (1995), "Indicators of Sustainable Urban Development" , Gharakhlou (2010), "Sustainable Urban Development", Azizi (2001), "Sustainable Development and Responsibility of Planners in the Twentieth Century", Ziari (2001), "The Nature and Cause of Sustainable Development, Saberifar (2009), "Basic Principles of Sustainable Development (2006) and… can also pointed out several studies in association with a particular intensive city subject that some of them are Mofidi and Eftekhari (2009), Kaffash (2010); Vahidi (2010), and....

3 - Theoretical Foundations

3.1 - Sustainable Development

One of the most accepted definitions of sustainable development has been stated at the World Commission on Environment and Development report in 1978 entitled "Our Common Future". According to the report, in order to achieve sustainable development, planning can enable the current generation to meet the needs without damaging the ability of future generations, (Seitz, 2008, 237). Without doubt, to achieve sustainable development in the settlements and wise management of land we need planning to deal with the problems caused by population growth and the subsequent development of irregular residence especially in urban centers (Ghajar Khosravi, 2010, 90).

Therefore, the urban sustainable development is a kind of development strategy with large and complex administrative, economic, social and environmental and physical scale and relying on a single factor in shaping the action is ill-considered and uninformed (Maleki and Hossein Zade Dalir, 2009, 60).

Sustainable development include two key element of development or sustainability means that the first element refers to a process that improves people life and its meaning is make change (Kazemi, 2007, 126) and the second element is based on the three principles of sustainable development, including economic, social justice and environment (Pirzadeh, 2008, 20). Also based on the principles of sustainable development, the sustainable design

of a city is necessary to notice to the intensity, integrity, protection, comfort, harmony and cooperation (Karyzak and Joe, 2009, 15).

3-2 - Compact City

In current situation with regard to the social, economic, political and geographical structure of Iran, this application approach has a more reliability efficiency. It also should be noted that the compact city theory is a subset of this approach. Urban compact structure reflects the complex reality of everyday life in the many successful cities that it can be true about the city models of radial, longitudinal and organic shapes that are along with communication paths. The patterns have resisted against extremely distribution and spread, (Kaffash, 2010). In some studies, the compact city is known the most stable form and sustainable development goals reflected in the compact urban. These studies mention the benefits of compression as a better access capability to facilities, increasing the economic attractiveness, lack of horizontal development and protect valuable agricultural and environmental lands (Vahidi, 2010). The remarkable thing is that the high density and compactness combined with inefficient management framework and inadequate infrastructure and transportation systems, not only it doesn't lead to environmental health and urban sustainability but also it instigates instabilities. Therefore, it is not considered absolutely increasing compaction be equivalent to increases stability and should consider optimal compression and dispersion stability with the goal of achieving a stability in certain range and according to the properties of that scope (especially economic, social and environmental attributes) and establishing balance in the advantages and disadvantages of the types of urban established forms of is necessary (Eftekhari Moghaddam, Mofidi Shemirani, 2009, 16).

3.3 - Compact City Indicators

3-3-1 - mixed use:

Refers to the diversity of activities; such as presence of commercial works and local industries in residential areas and presence of buildings in commercial and industrial areas.

3-3-2 - Unmixed User:

Refers to the urban and suburban areas where most of these buildings are residential and economic activities are focused in the city centers, town or retail parks.

R

3-3-3 - Accessibility:

It is based on the distribution of utilities and easy access to destination points within the city or town (Masnavi, 2002, 93 - 92).

3-3-4 - overall population density (Gross):

It refers to the total population density of a metropolitan area and includes all other applications and is expressed in hectares (Mashhoodi, 2010, 9).

3-3-5 - Residential Gross Density:

The numbers of housing units per acre which are calculated based on an entire neighborhood area including roads, schools, workshops and etc. and are expressed as housing unit per hectare (Azizi, 2004, 29).

3-3-6 - Household dimension:

The average number of persons living in each dwelling unit or family.

Generally, the criteria and indicators in the form of a compact city, most of its emphasis is on the existing urban center growth and recycled land and at the same time avoid of distribution and development of city in the Margins. So that it connects different neighborhood sectors and neighborhood units together and links the people inside homes, schools, workplaces and community organizations to.

Therefore, efforts related to sustainable development, especially the compact city approach will try to implement the public access to community facilities and, if necessary, an appropriate public transport service such as buses, to fulfill this importance goal. We note that this type of development work efficiently in terms of maximum energy utilization.

RESULTS AND DISCUSSION

Density of population:

Table 1. Breakdown of population density of the proposed project

Proposal	Proposed Population Density
Master Plan , adopted in 1971 (Capacitive)	86.1
Master Plan , adopted in 1993 (Mehrazan)	143.1
Adopted Master	130
Detailed in the Mid- West Passage	162.7

Avoid horizontal expansion:

Table 2. Avoidance horizontal expansion of plans

Urban Development Projects	Population Growth Rate divided by the rate
Master Plan , adopted in 1971	0.83
Master Plan , adopted in 1993	3.50
Master Plan approved in Progress	2
Detailed Design of the Mid-central Areas	1.40

Density residential units per hectare:

Table 3. Proposed Density Residential Units per acre in the Projects

Urban Development Projects	The Proposed Density of Dwelling Units per hectare
Capacitive Master Plan	26
Mehrazan master plan	40
Farnahad Master Plan	38
Detailed Design of the Mid-central Area	44

Mixed Zones:

Table 4. Percentage of Complex Zones in Plans Breakdown

Projects	Mixed Zones (H.)	Total Area	Mixed Percentage of Total
Capacitive Master Plan	3320	14560	22.8
Mehrazan master plan	5274	31476	16.8
Farnahad Master Plan	4073	29815	13.7
Detailed Design of the Mid-central Area	765	4300	17.8

The project evaluations based on criteria and sub-criteria by using the hierarchy analytic of explaining the criteria and sub- criteria importance:

The comparison between the two criteria:

According to the importance of criteria and also the presented Table 9-quantification in Theoretical model, their comparison matrix will carry the sub- form:

Table 5. Determine the Importance of Each Criterion

Criterion	Social	Frame	Functional
Social	1	3	1.7
Frame	1.3	1	1.5
Functional	7	5	1

To calculate the importance coefficient of the criteria, it must first be normalized. Then we calculate the geometric mean of each row and we obtain the importance coefficient of each factor by dividing the geometric mean to the sum of them.

Table 6. Determination of Importance Coefficient of Criteria

Criterion	Geometric Mean	Importance Coefficient
Social	0.753	0.170
Frame	0.405	0.091
functional	3.270	0.738

The sum of importance coefficient is 1that indicates the relative importance of criteria against them.

Binary comparison of sub-criteria:

Functional criterion is composed of two sub-criteria, the residential unit density per hectare and the percentage of complex users. We compare these two sub-criteria together and then we get both ratio of the geometric mean and their importance coefficient.

Determining the option importance coefficients the ratio to sub-criteria:

This comparison is done based on this question that how much the item j has priority in relation with the sub-criteria X that the comparing tables of each plans has been noted in relation with the below sub- criteria. To answer this question, in each case, we refer to the curves obtained from the extraction of quantitative indicators are presented in Chapter 5 and the importance of each project on each sub-criteria is simply detectable.

Table 7. Determine the Importance Coefficient of Functional Sub-criteria in Compared with Each Other

Criteria	Mixing of Land Uses	Residential Unit Density per hectare	Geometric Mean	Importance Coefficient
Mixing of Land Uses	1	3	1.732	0.749
Residential Unit Density per hectare	1.33	1	0.570	0.248

Table 8. Determine the Importance Coefficient of Options in Relation to the Sub-criterion of the Residential Unit Density per hectare

Residential Unit Density per hectare	plans	Capacitive Master Plan	Mehrazan Master Plan	Farnahad Master	Detailed Design of the Mid-Central Area	Geometric Mean	Importance Coefficient
	Capacitive Master Plan	1	$\frac{1}{5}$	$\frac{1}{3}$	$\frac{1}{7}$	0.312	0.055
	Mehrazan Master Plan	5	1	3	$\frac{1}{3}$	1.495	0.263
	Farnahad Master Plan	3	$\frac{1}{3}$	1	$\frac{1}{5}$	0.669	0.117
	Detailed Design of the Mid-central Area	7	3	5	1	3.201	0.563

Table 9 . Determine the Importance Coefficient of Options in relation to the Sub-criterion of Land Users Mixing

Land users Mixing	plans	Capacitive Master Plan	Mehrazan Master Plan	Farnahad Master	Detailed design of the mid-central area	Geometric Mean	Importance Coefficient
	Capacitive Master Plan	1	5	7	3	3.201	0.564
	Mehrazan Master Plan	$\frac{1}{5}$	1	3	$\frac{1}{3}$	0.669	0.118
	Farnahad Master Plan	$\frac{1}{7}$	$\frac{1}{3}$	1	$\frac{1}{5}$	0.312	0.055
	Detailed Design of the Mid-central Area	$\frac{1}{3}$	3	5	1	1.495	0.263

Table 10. Determine the importance coefficient of options in relation to the sub- criterion population density

Avoidance of horizontal development	plans	Capacitive Master Plan	Mehrazan Master Plan	Farnahad Master	Detailed design of the mid-central area	Geometric Mean	Importance Coefficient
	Capacitive Master Plan	1	$\frac{1}{9}$	$\frac{1}{5}$	$\frac{1}{3}$	0.293	0.050
	Mehrazan Master Plan	9	1	3	5	3.409	0.581
	Farnahad Master Plan	5	$\frac{1}{3}$	1	3	1.495	0.255
	Detailed Design of the Mid-central Area	3	$\frac{1}{5}$	$\frac{1}{3}$	1	0.669	0.114

Table 11. Determine the Importance Coefficient of Options in Relation to the Sub- criterion Avoidance of Horizontal Development

Population density	plans	Capacitive Master Plan	Mehrazan Master Plan	Farnahad Master	Detailed design of the mid-central area	Geometric Mean	Importance Coefficient
	Capacitive Master Plan	1	$\frac{1}{5}$	$\frac{1}{3}$	$\frac{1}{7}$	0.312	0.055
	Mehrazan Master Plan	5	1	3	$\frac{1}{3}$	1.495	0.263
	Farnahad Master Plan	3	$\frac{1}{3}$	1	$\frac{1}{5}$	0.669	0.118
	Detailed Design of the Mid-central Area	7	3	5	1	3.201	0.564

Table 12. Final Score of Options

options	Residential unit per hectare		Land user mixing		Population density		Avoidance of horizontal development		Final score
	Option weight	Option sub-criterion	Option weight	Option sub-criterion	Option weight	Option sub-criterion	Option weight	Option sub-criterion	
Capacitive Master Plan	0.055	0.153	0.56	0.26	0.55	0.491	0.05	0.094	0.428
Mehrazan Master Plan	0.026	0.153	0.18	0.26	0.263	0.491	0.581	0.094	0.218
Farnahad Master Plan	0.117	0.153	0.055	0.26	0.118	0.491	0.255	0.094	0.114
Detailed Design of the Mid-central Area	0.563	0.153	0.263	0.26	0.564	0.491	0.114	0.094	0.442

Determine the Final Rating for the Alternatives (projects):

According to the below table , the detailed design of the mid -west has accounted the Best Score. Then Capacitive and Mehrazan and Farnahad master plans are in next categories.

6 – Conclusion

1- The capacitive master plan has been very useful and effective in compact topic. Nevertheless, in the proposed capacitive master plan, the vast areas of agricultural component are considered as lawful part of city, and the city has a horizontal expansion but on other issues, such as unit density per acre and mixed zone offered has had better relative performance.

2. Despite the fact that Mehrazan master plan has determined most of the proposed population for the city of Mashhad, but it has not succeeded to achieve providing intensive development pattern for city.

3. Preparing a master plan for the city of Mashhad in comparison to other urban development projects are considered in a wider pattern. Despite city domain in the project horizon being smaller and also the proposed population had a 1.5 equal growth, in other intensity schemes has not acted as well as other plans.

4. Development pattern of Detailed Design of the Mid-central Area of Mashhad in some indicators such as residential unit density per hectare and mixed areas rather than other plans had a better performance.

5. From different points of the in progress master plan and west central pattern we can conclude that the necessity of synchronization of preparing the urban development plan for the city of Mashhad, the metropolitan area to the area of micro-scale town planning was raised and in regard to this fact, the sustainable development indicators and criteria will be attainable with the lowest cost and highest level.

REFERENCES

Azizi M. 2001. Sustainable Urban Development. Soffe magazine. 33, 23-31.

Birkeland J. 2002. Design for Sustainability. Sourcebook of Integrated, London.

Blakely EJ and Gail Snyder M. 1997. Fortress America: Gated and Walled Communities in the United States. Brookings Institution, Washington, DC.

Breheny M. 1992. The Contradiction of the Compact City: a Review, Sustainable Development and Urban Form. Edited by M.B. Breheny. Pion, London.

Breheny M. 1994. The Compact City and Transport Energy Consumption. Department of Geography, Great Britain.

Burton E. 2001. The Compact City and Social Justice, a paper presented to the Housing Studies Association. Spring Conference, Housing, Environment and Sustainability, University of York.

Capacitive Consulting Engineers. 1967. Mashhad Master Plan. Iran's Supreme Council of Architecture and Urban Planning, Tehran.

Farnahad Consulting Engineers. 2005. Development Plan (Master) of Mashhad area: Knowing the general area and region. Ministry of Housing and Urban Development, Tehran.

Farnahad Consulting Engineers. 2007. Development plan of the holy city of Mashhad Metropolis, landscape and the general pattern of development, first edition. Ministry of Housing and Urban Development, Tehran.

Farnahad Consulting Engineers. 2009. Development Plan (Master) of Metropolis Mashhad, development prospects, goals, strategies and policies, first to the third edition. Ministry of Housing and Urban Development, Tehran.

Ghajar Khosravi MM. 2010. Review of Regional Physical Development Plans in Iran. Journal of Rural Housing and Environment. 130, 1-11.

Gharakhlou M. 2010. Indicators of Sustainable Urban Development. Journal of Geography and Regional Development. 8, 23-31.

Kazemi M. 2007. Tourism Management. SAMT publisher, Tehran.

Hall P and Feiffer A. 2009. 21st Century Urban Future. Translating by Sadeghi and Safaee. Iranian Consulting Engineers Society, Tehran.

Jencks M, Burton E and Williams K. 2003. The Compact City: A Sustainable Urban Form. E. & FN. Spun, London.

Jenks M and Burgess R. 2000. Compact Cities. Spun press, London and New York.
Kaffash M. 2010. Concept of Compact City and Sustainable Urban Forms. Yissr, Tehran.
Gunther B. 2005. Media Research Methods. Minoo Nikoo Translation. Department of Vision Research, Tehran.
Lester BR. 1981. Building a Sustainable Society. Norton, New York.
Maknoon R. 1995. Sustainability Development. Journal of Bana. 1, 12-23.
Maleki S and Hosseinzade Dalir K. 2009. Ranked Urban Areas of Sustainable Development Indicators. Geography and Regional Development. 13, 56-70.
Farnahad Consulting Engineers. 2009. Analysis the Effects of Existing Plans and programs on the City Public Status. Ministry of Housing and Urban Development, Tehran.
Farnahad Consulting Engineers. 2010. Development Projects in Mashhad, Mashhad Metropolitan Development Strategy Plan, first edition. Ministry of Housing and Urban Development, Tehran.
Masnavi MR. 2002. Sustainable Development and New Paradigm of Urban Development (Compact City and Wide City). Journal of Ecology. 31, 45-71.
Mofidi Shemirani M and Eftekhari Moghadam A. 2009. Sustainable Urban Development and Views and Principles of Implementation in developing Countries. Building City. 12, 23-32.
Nabielek K. 2012. The Compact City: Planning Strategies, Recent Developments and Future Prospects in Netherland. TRE, Ankara.
Parsumash Consulting Engineers. 2009. Development Model and Detailed Plan of Mid-Western Area and Analyze the Current Status and Past Developments and the Look Forward Future and Evaluate the Output of the Master Plan was Developed in order to accomplish the Vision, Volume II. The Ministry housing and Urban Development, Tehran.
Parsumash Consulting Engineers. 2009. Development Model and Detailed Plan of Mid-Western Area and Established Pattern of Development, Volume 12, Second Edition. The Ministry housing and Urban Development, Tehran.
Pirzadeh, H., 2008. Improving the Management System of Urban Development Based on a Strategic Approach**.** Ministry of Housing and Urban Development, Tehran.
Saberifar R. 2009. What and Why Sustainable Development?. Education of Geography. 4, 13-20.
Saberifar R, Divsalar A and Akhgari M. 2013. Urban Planning Sustainable Development, Executive Implementations. Noor elm, Tehran.
Saberifar R and Mazraawi M. 2011. Introduction to Sustainable Urban Development**.** Green inscriptions, Ahvaz.
Salehi Fard M. 2004. Evaluate the Role Model for Sustainable Urban Development in Iran Urban Structure. Journal of Political - Economics Information. 200, 12-21.
Seitz LJ. 2008. Global Issues. Markono Print Media, Hong Kong.
Seymoar NK. 2008. The Sustainable Cities: PLUS Planning Cycle. Durban biennial conference.
Vahidi G. 2010. Compact City, sustainable urban form, The First Sustainable Urban Development Conference. Ministry of Housing and Urban Development, Tehran.
Van JK and Modarres A. 2009. City and Environment. Translated by Tabibian. Tehran University Press, Tehran.
Wheeler, S.M., 2006. Planning for Sustainability. Rutledge, London and New York.
Zebardast, A, 2004. Sized City. Urban and architecture Research Center, Tehran. Zebardast, A., 2001. Applying Hierarchical Analytic Process in Urban and Regional Planning. Art Journal. 10, 34-47.
Ziyari, K., 2000. Planning New Cities. SAMT publisher, Tehran.
Ziyari, K., 2001. Sustainable Development and for Planners' Responsibility in the Twentieth Century. Journal of Faculty of Letters and Human Sciences Tehran University. 160, 371- 386.