Analysis the Role of open spaces on enhancing Quality of Life in Mashhad city, Iran

Mohammad Ajza Shokouhi[1], Marjan Akbari[2*]

[1]*Associate professor of Geography and Urban planning, Ferdowsi University of Mashhad, Mashhad, Iran*

[2] *Ph.D. student of Geography and Urban Planning,Ferdowsi University of Mashhad, International Campus, Iran*

(Corresponding author, M-akbari-s@hotmail.com)

Abstract

Significant research supports the notion that urban open spaces offer health benefits as a parameter for QOL to city residents through exposure to a natural environment. "Open space is land or water area with its surface open to the sky, consciously acquired or publicly regulated to serve conservation and urban shaping function in addition to providing recreational opportunities. Present research has a descriptive-analytical method that is of applied kind. Their theory foundation is based on attribution and desk studies and field visits of related organizations. Information has been collected on their ecological characteristics using questionnaires (open and closed questions), along with interviews. Results show that all parts in the Mashhad city at the first stage have less depth than the main axles. It is necessary to say that this kind of morphology structure is a part of Iranian –Islamic cities specifications. Also results show this fact thatopen space areas in the Mashhad city during the years 1987–2014 have become isolated and decreased.

Key Words: Open space, QOL, green spaces, urban region

Introduction

Well designed, accessible open spaces provide health benefits by offering amenities for exercise and peaceful areas to enjoy. They can provide environmental benefits by supporting plant and animal life and by improving natural systems degraded by urban land uses. Open spaces can

educate by revealing history or providing a window into understanding the natural environment. Open spaces also offer areas for human interaction, food production, and an element of beauty in our daily lives (UN, 2009). The understanding, measurement, and improvement of human experience have been major goals of individuals, researchers, communities and governments. The overall assessment of human experience has been commonly expressed by the term quality of life (QOL) across multiple disciplines including psychology, medicine, and economics, environmental science, and sociology.

A search of the Institute for Scientific Information database from 1982 to 2005 reveals over 55,000 citations utilizing the term "quality of life." QOL as a general term is meant to represent either how well human needs are met or the extent to which individuals or groups perceive satisfaction or dissatisfaction in various life domains. Understanding QOL has tremendous potential implications because improving QOL is a major policy and lifestyle goal (Rahnama, Shokouhi&Heydari, 2013). The term "urban open space" can describe many types of open areas. One definition holds that, "As the counterpart of development, urban open space is a natural and cultural resource, synonymous with neither 'unused land' nor 'park and recreation areas." Another is "Open space is land or water area with its surface open to the sky, consciously acquired or publicly regulated to serve conservation and urban shaping function in addition to providing recreational opportunities." In almost all instances, the space referred to by the term is, in fact, green space. However, there are examples of urban green space which, though not publicly owned/regulated, are still considered urban open space (Nowak et al., 1994).

Although concept of Quality of Life has various applications, and it has been used in several and different fields, but it is too difficult to address a clear and complete definition for it (Ogburn 1946). People usually have a light full picture of their QOL in their mind. Also they usually know the conditions that they will feel prospers for example more income, having a house (or a bigger house), nice car, much holydays and so on. Also people declare that in such circumstances everybody will have prospers feeling (collective life quality). For example, existence of beautiful and calm city and without traffic jams, unemployment and poverty and existence of clinical

facility for everyone and so on (George 1981).The most sprit and prevalent distinguished survey of Quality of Life is between subjective and objective Quality of Life. Also it is possible to put distinguish between individual and collective Quality of Life. However difference between objective and subjective aspects of QOL could beknown as distinguish between behavior and perception (Veenhoven, 2007).

Table 1:A Typology of Urban Open Spaces

Type of Open Space	Characteristics
Public/Central Park	Publicly developed and managed open space as part of zoned open space system of city; open space of city-wide importance; often located near center of city; often larger than neighborhood park.
Downtown Parks	Green parks with grass and trees located in downtown areas; can be traditional, historic parks or newly developed open spaces.
Commons	A large green area developed in older New England cities and towns; once pasture area for common use; now used for leisure activities.
Neighborhood Park	Open space developed in residential environments; publicly developed and managed as part of the zoned open space of cities, or as part of new private residential development; may include playgrounds, sport facilities, etc.
Vest pocket Park	Small urban park bounded by buildings; may include fountain or water feature
Squares and Plazas	Characteristics
Central Square	Square or plaza; often part of historic development of city center; may be formally planned or exist as a meeting places of streets; frequently publicly developed and managed.
Memorials	Public place that memorializes people or events of local and national importance.
Farmer market	Open space or streets used for Farmer's Markets or Flea Markets; often temporary or occur only during certain times in existing space such as parks, downtown streets or parking lots.

Resource: Adapted from Carr, Francis, Rivlin and Carr, 1992.

Background

Urban open spaces are one of the importance infrastructure that could be used them in process enhancing Quality of Life as effective and efficient spaces to reduce the damage of disaster (Hesami, 2014). We can use these spaces, while happening crisis as relief base; also we use them as temporary accommodations. No structure or space can fully satisfy all individuals' needs (Chapman, 1996). In order to satisfy these needs, human beings always try to make changes in their environments; however, these changes are not always suitable and in some cases, they are even damaging to the environment. Accordingly, during the history, urban areas and settlement boundaries decreased considerably and made many previous urban areas as unlivable regions for their present and future inhabitants. The importance of this becomes more obvious when we know that more than half of the world population live in urban areas and by the year 2020, this will even reach to 60 % of the world population (UNPE, 2007).Green spaces are as a complement of urban physical structure. These spaces are a type of urban land-use that has ecologic and social traits. On the other hand, today planning and design is adaption green space networks. Today, urban green spaces are introduced as appropriate method for promotion of life quality due to impressive social and ecological influences (Barker, 1968). So, an urban green space is important issue due to creating beautiful landscape, also it is as obstacle air pollution in cities. Last years in Iran, don't achieve sustainable cities especially in Mashhad metropolitan due to development of cities without regard to infrastructure such as green spaces. In different section of cities exist problems such as air pollution, terrific, shortage of green spaces. Appropriate planning & effective management in urban green section are necessary for eliminating these problems. Effective management is led to promotion of humane life quality in cities. Some countries in world are successful to decline shortage of green spaces by implementing different plans of developing green spaces (Eli, 2013).

The value of urban open space can also be considered with regards to the specific functions it provides. For example, the Bureau of Municipal Research in Toronto lists these functions as the nature function, urban design function, economic function, social retreat function, and outdoor

recreation function. Another study categorizes the values open space offers from a sociological viewpoint, listing: civic and social capital, cultural expression, economic development, education, green infrastructure, public health, recreation, and urban form. These studies reiterate the same core benefits of urban open spaces and none of the options create any inconsistencies with the others. Additional beneficial aspects of urban open space can be factored into how valuable it is compared to other urban development. One study categorizes these measures of value into six groups: utility, function, contemplative, aesthetic, recreational, and ecological. These categories account for the value an urban open space holds to the development of the city in addition to just those things citizens consciously appreciate. For example, the "function value" of an open space accounts for the advantages an urban open space may provide in controlling runoff. The final three values listed, aesthetic, recreational, and ecological, are essentially the same as the values that make urban open spaces consciously valuable to citizens. Of course, there are several different ways to organize and refer to the merit of open space in urban planning (Fanni& et al, 2014).

Significant research supports the notion that urban open spaces offer health benefits as a parameter for QOL to city residents through exposure to a natural environment. It has been unambiguously shown that there is a strong association between the enjoyment of nature and the health of a city population in general. Studies have examined several aspects of this association and also specific impacts on distinct demographic groups (Health Council of the Netherland, 2004). Most have been reviewed and listed in a comprehensive analysis by the Health Council of the Netherlands study (Mitchell &Popham, 2008). In Britain looked at mortality and morbidity among three income levels in relation to their access to green open space. The study examined about 360,000 deaths in a population of about 41 million. While it confirmed that wealthier individuals were generally healthier than those with lower incomes, it made another remarkable discovery: That all groups irrespective of income showed an improvement in health in proportion to their access to green space and that the differences in health status between income groups, who had equivalent access to progressively more green space, shrank favoring the lowest socio-

economic group with the highest morbidity. In simple terms, everyone benefited but the lowest income group benefited the most (Kiani, 2014). These striking results based on an exceptionally large sample confirm unambiguously the health-related effects of green space and suggest its importance as an element in neighborhood layouts. Not only would it reduce health disparities between incomes but it would also promote general health and well-being.A second epidemiological study in the Netherlands. Examined the health of 17,000 people in relationship to the presence of green space in their surroundings. It found that residents of neighborhoods with abundant green space were, on average, healthier. This correlation was clearly evident in the general population but it was more pronounced among seniors, housewives and low-income people. Also significant was the correlation between health and the total amount of green space, which, in some cases, was located at a distance of 1–3 km from home.

Fig.1. A view of holy shrine of Imam Reza.

Other research looked at specific demographic groups such as age, occupation, socioeconomic status and unusual health conditions or symptoms. Though these studies vary in their degree of scientific, they all point to the potential benefits of nearby nature. For example: • Convincing evidence suggests that nature has a positive effect on recovery from stress and attention fatigue. For example, people in highly stressful occupations such as caregivers or hospital nurses can shed much of their stress by being or walking in natural settings. This détente, evidently, can occur even when the exposure to nature is brief. • Similarly, evidence shows that nature has a positive impact on mood, concentration, mental fatigue, self-discipline and physiological stress. • Likewise, results that show faster recovery rates for hospital patients, who have a view of nature through their window, can be attributed to stress reduction, in the absence of other explanatory mechanisms. • Parents of children suffering from Attention Deficit Disorder, report improvement and fewer attention problems when the area of play is in natural settings • Green spaces may enhance the potential of creating and sustaining community interaction and networks (Crawford, 2007). Generally, have classified hierarchy of urban spaces or social life and private life in sixcategories:1. Urban public space:parks,roads,highways, urban squares;2. Urban semi-public spaces: municipal building, post office, parking lots, stadium and etc,3. Specific public space for one group: postal service, utilities and etc,4. Specific private space for one group: public gardens, playgrounds, stores and etc,5. Family's private spaces: the dining room, entertainment and etc,6. Individual private space: private room for each person.

Methodology

Present research has a descriptive- analytical method that is of applied kind. Their theory foundation is based on attribution and desk studies and field visits of related organizations. Information has been collected on their ecological characteristics using questionnaires (open and closed questions), along with interviews. This information is collected in two documents and field ways. In this part we have applied different approaches to calculate the relative of urban spaces and urban parks in thirty districts of Mashhad city. Then, we have compare the level of

population density in each district with condense of urban parks in the same districts and continuous this process for other regions. After gathering needed data's, we used of different statistical methods for analyzing and discussion about research. Finally based on the gathered information from Mashhad Urban Parks a comparison has been made with Iran existing standards and also international standards.

Case study Region

Mashhad covering an area of 204 sq. km, for centuries, has been an important trade center and junction point on Silk Road caravan routes and highways from India to Iran and from north to south between Turkmenistan towns and Sea of Oman. At the beginning of the 9th century (3rd century AH) Mashhad was a small village called Sanabad situated 24 km away from Toos.Today, Mashhad is the capital of Khorasan Razavi Province of Iran (Fig. 2). It is one of the mostimportant cities because of itsreligious, historical and economic values that attract a large number of people each year. In 1986, its population was 668,000 whereas its current population is about 2.8 millions. Since 1987, built-up areas in the city have expanded significantly (Rafiee, 2007); the city has witnessed a rapid growth in construction which has caused destruction of green spaces areas. This trend in the urban park is in sharp contrast with the rules governing improvement and establishment of new urban parks within the current boundary and the projected future of the city. In fact, municipality closely attends to the urban parks and scrutinizes even single tree uprooting. On the other hand, there are nongovernmental organizations and the general public who watch the trend carefully and exert controlling effects on public urban parks removal. In addition, the provinces of Iran are all under extensive land use evaluation and planning, the results of which will be available in near future. The application is mostly environmentally oriented giving high value to public urban parks and aims to upgrade the per capita green areas in the newly built regions. However, there are other players in the filed including major private stakeholders who have influence in deciding the physical and biological properties of built-up area development plans.

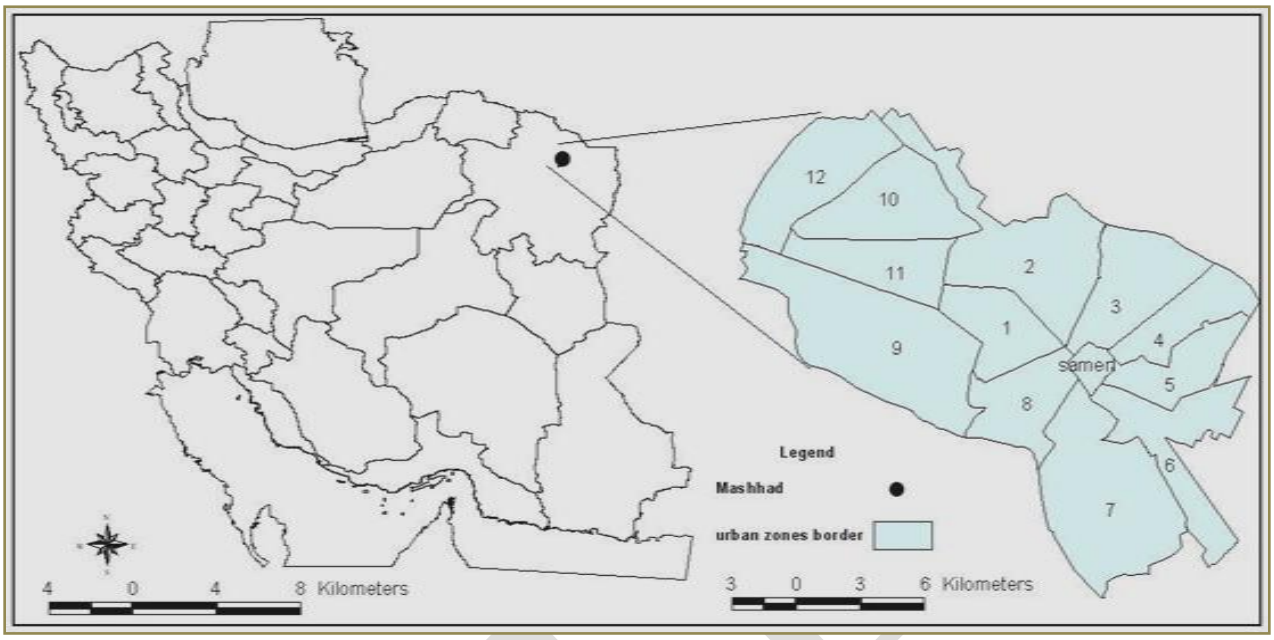

Fig. 2. Case study Region.

Source: authors adopted Rafiee& et al, 2009.

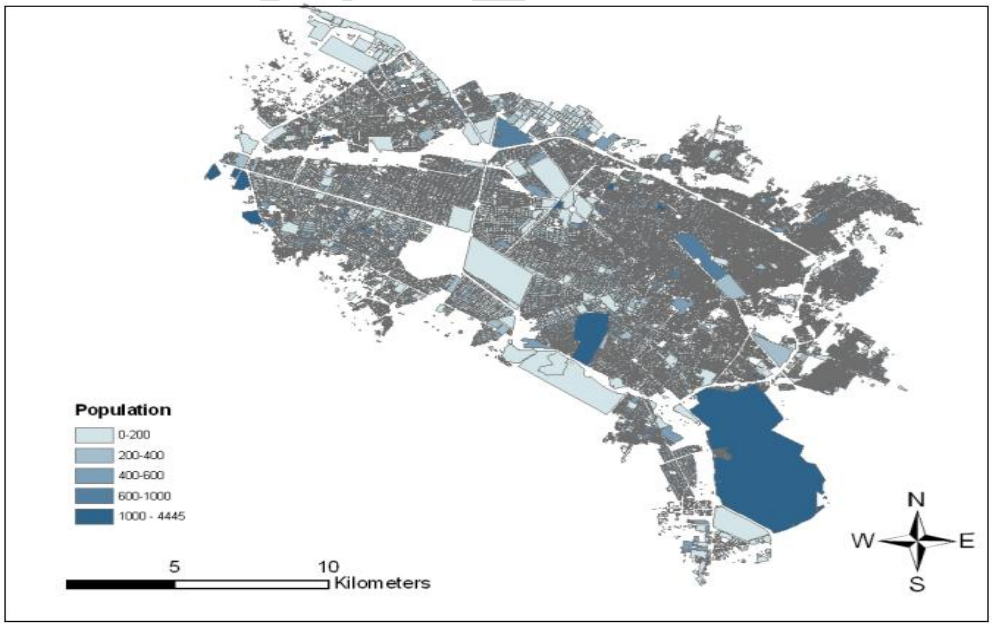

Fig. 3. Population density in Mashhad city.

Source: authors adopted Rafiee& et al, 2009

Results and discussion

Ministry of Housing and Urban Development and their offices in the Provinces are responsible for the overall policy and guideline of the urban development program. Today in many of cities in Iran country especially in Mashhad are reduced open spaces due to uncontrolled construction of building in cities. The reduction of green, open, sport spaces could be studied during in 40 years ago in Mashhad. Although in this period there are urban development plans but these natural potencies and advocacy tools damage more than other times. On the other hand, there are low per capita of green space and sport lands, also imbalance in distribution of function in urban development plans have been led to that is accursed a great shortage such spaces (open space, green space) in many of compact and central area of city. Conversation process of green space, open space and sport space to commercial and office spaces are more faster than conversation other spaces to green & sport spaces.Therefore, urban open spaces are the most important land use that could be used in crisis management processwhile happening disaster such as earthquake and etc. So quality and quantity of open spaces have main role inreducing of disaster damages at case study region. Furthermore, we can use from them in order to improving life quality in city.Temporary needs of open space are defied by some spaces such as: Medium and large and small parks, wideboulevards, wasteland, parking lots, stadiums, private vast areas and etc.

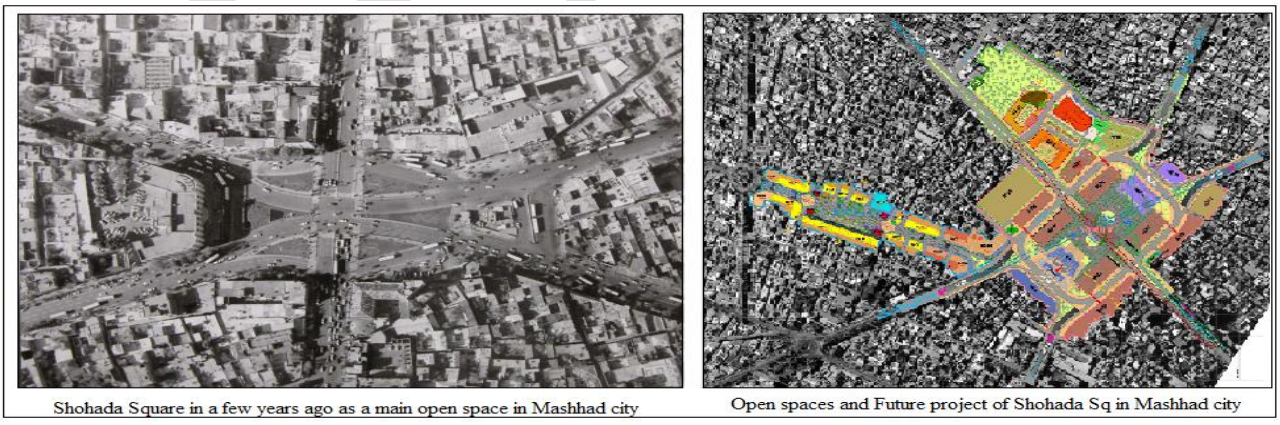

Fig. 4. Urban open space in Mashhad city &Shhoda project square.

Source: authors, 2014.

All parts in the Mashhad at the first stage have less depth than the main axles. It is necessary to say that this kind of morphology structure is a part of Iranian –Islamic cities specifications. This means that however the residential places are in quiet positions of city; they are not very far from the urban daily life and in fact are not the solitude. Being in solitude from the urban daily life can have physical- psychological- social consequences.Stores act as attraction poles but cannot change the space integration value, because the integration is related to the space specifications and in fact depends on the entire system of city. So we can conclude that Mashhad's market development in its north-west part which is the heart of the city (with high comprehensive integration) is a suitable place where its physical specifications attract the pedestrians and change the sore places. As we can see in figures the marginal spaces of Mashhad in the second stage of development have a high depth; meaning that the space centralization with low integration around the city and also some spaces with these specifications are in the middles of the city. These spaces are residential parts which regarding social structure should have been placed in special and private places. This is a specification of the Islamic cities. In the second stage of the city development, the main path ways have lost their importance in comparison to the market and have also lower integration regarding space syntax.Open space areas in the densely populated cities of today are valued more than before while atthe same time are suffering shrinkage due to pressures for more open lands for housing development. The results of this study revealed that open space areas in the Mashhad city during the years 1987–2014 have become isolated and decreased. Even, in some cities per capita of green space land-use is low from optimum range. The green spaces development process of Mashhad city show that the first modern green space is not racemization correctly and different groups have different idea about this subject but what of many of citizens have agreed about that is the Kohsangi urban park is an old urban park in Mashhad but National garden park in fact is the oldest park in Mashhad city. It has been made in 1952. Then, in order to balancing between urban park, green spaces land-use and other land-uses (such as: residential, commercial, administrative and etc.) were made parks in 1962 decade.

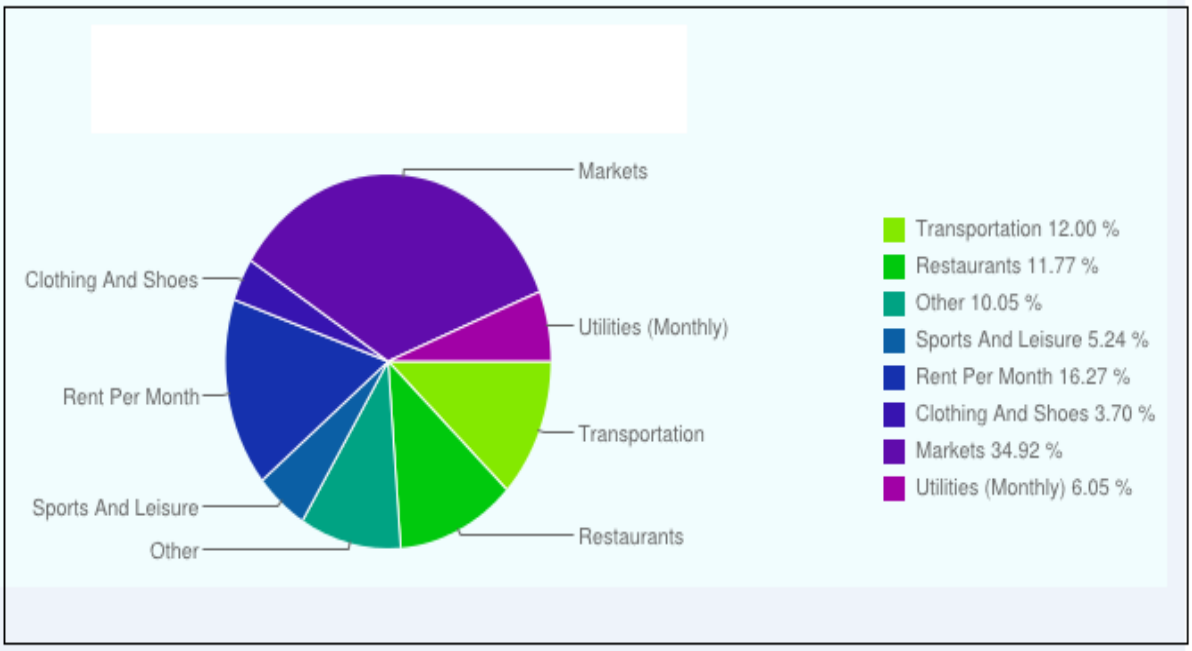

Fig. 5. Distribution of cost of living expenses in Mashhad city.

Source: authors, 2014.

The studies show urban green spaces increase to 11.1 km^2 in 1998 that the numbers of parks are 184.Furthermore, aesthetic, historical and recreational values of urban parks in case study region increase the attractiveness of the city and promote it as tourist destination, thus generating employment and revenues. Furthermore, natural elements such as trees or water increase property values, and therefore tax revenues as well. So, the organizations need to cooperate each other. However, there are some organizations for administrating of city, but also the main organization is parks and green spaces organization. For promoting of green space management, gardens official was established in 1961.After that, change to parks and green space organization in 1964. Also, the basic changes were created in structure. The traditional methods were removed and were replaced modern technique for administrating city. In Mashhad city, projects for the enhancement of urban improvement mainly with the arrival of the Islamic city council, the organization of gardens and sidewalks was dedicated to the interests of the native symbols

with respect of the economic aspect of nature in Iran. The projects were related to the interests of promoting knowledge about the economic possibilities of the local and exotic flora.

Table 2

Total Area of Urban Parks and Green Spaces in Mashhad city

Area	Urban parks and urban green spaces in Mashhad city	Total area
1	36	263037
2	58	6493534
3	24	6480747
4	10	5157623
5	17	3446556
6	34	4994155
7	22	24119223
8	20	733.025.1
9	68	10574022
10	65	5987321
11	25	9069732
12	9	549629
Samen	9	282147
Total	397	8.711.531

Source: Mashhad municipality, 2013.

So, it is necessary that is predicted these open spaces to preventing reduce these spaces, also creating balance in order to improving quality of urban environment and preparation for possible crisis in future development of Mashhad city.

Table 3

Number of educational, cultural, health, sports centers and hotels of Mashhad in Year 2006 and its projections for the Year 2016

	Educational Center	Religious & Cultural Center	Health	Public Buildings	Industry	Sport and Recreation	Hotel	Infra-structure	Parks
Number 2006	1371	562	99	189	44	32	197	98	328
m^2/Person: 2006	3.9	0.5	1.03	1.32	2.75	2.74	0.45	1.99	10.3
m^2/Person Expected: 2016	4.66	1.57	1.57	1.97	3.17	3.56	0.87	2.91	15

Source: Mashhad municipality, 2013.

Conclusion

All parts in the Mashhad at the first stage have less depth than the main axles. It is necessary to say that this kind of morphology structure is a part of Iranian –Islamic cities specifications. This means that however the residential places are in quiet positions of city; they are not very far from the urban daily life and in fact are not the solitude. Being in solitude from the urban daily life can have physical- psychological- social consequences.Stores act as attraction poles but cannot change the space integration value, because the integration is related to the space specifications and in fact depends on the entire system of city. So we can conclude that Mashhad's market development in its north-west part which is the heart of the city (with high comprehensive integration) is a suitable place where its physical specifications attract the pedestrians and change the sore places. As we can see in figures the marginal spaces of Mashhad in the second stage of development have a high depth; meaning that the space centralization with low integration around the city and also some spaces with these specifications are in the middles of the city. These spaces are residential parts which regarding social structure should have been placed in

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