

## Criteria for the Formation and Dynamics of Sport Land through Urban Non-Place (with a Focus on the Experiences of Mashhad)

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### Abstract

*Open, arid, unbuilt spaces by roadside, in neighborhoods and urban areas are of hidden urban areas that despite numerous potential, they are left unused. Due to lack of proper public sport places in the cities, by changing into open sports ground, these spaces can be a good opportunity to improve the quality of life, organization of urban spaces, neighborhood orientation, and development of public services and welfare. Although transforming the urban non-spaces into spaces to dynamic sports spaces has happened in some cities based on article 110 of the Municipal Act, the neglect of social and economic structure of consumer groups, non-functional hierarchy of sports grounds, lack of attention to the texture and the absence of clear standards and criteria to choose the kind of exercise in proportion to the size and orientation of user groups have reducing the productivity of the land. The aim of this study is to identify criteria to categorize temporary outdoor sports grounds and classify them according to the criteria extracted. The method of study is based on field research methods and techniques of hierarchical analysis, fuzzy logic models and integrating layers. The results of this research is to develop different standards in terms of social, economic, physical, environmental and management issues about grouping these lands to increase productivity and efficiency. The criteria are determined in terms of location analysis, evaluation and grouping of land.*

**Keywords:** sports fields, criteria, location, evaluation, categorizing

### 1. Introduction

One of the most basic processes of human society has been the process of urbanization, which has increasingly been growing in the past century (Mirei et al, 2012: 104). Because of this growth and its dramatic effects, we witness lost spaces in the context of urban spaces. Defenseless spaces in the context of urban spaces, in addition to the destruction of the urban body and changing its landscape has resulted in unsafe areas within the urban fabric and the creation of social and cultural abnormalities.

In notion of sustainable development, human is considered as the core and the most important asset of any society is human capital (Hussaini, 2009: 4). Hence, development of social welfare, the environmental safety, improving the quality of life in urban areas and with the development of environmental agencies, improving urban management and so on, the issue of locating and organizing the cultural and urban services in the cities has experienced a qualitative change. The issue of how open land scattered in the neighborhoods and urban areas can be adapted to the social structure of nearby residents, the neighborhood and a variety of sports tailored to the texture, maximum performance and the use of

potentials in order to raise quality of life and urban spaces is of cases in which special planning is required.

This article is analytical-applied and attitude is exploration-explanatory. The objective of the qualitative research is the quality of dealing and categorizing the open lands within space. Therefore, regarding the goal, the study is developmental. According to the objectives of this study, 300 residents of Mashhad were surveyed on outdoor sports ground the purpose of which is to achieve better social reality and not to generalize the results. The unit of analysis in this study is "outdoor sport spaces" but the unit of observation has been "person (the respondents)." Thus, analysis level will be moderate.

Initial study (field study) means that data are collected that have not existed before. Initial research is usually done after the second study gave the researcher an overview on the issue. Methods of data collection in the study in studying environment is divided into three main categories including survey, focal points are observation.

In this regard, the current situation of open sports fields in terms of size, location, neighborhood, and type of access are separately evaluated and identified.

In the next step, Mashhad is studied in terms of socio-economic traits and the status of each land is evaluated in terms of socio-economic status. Then various measures have been introduced in the classification of land and land are grouped according to their socio-economic and physical status.

## **2. Renewal of Hidden Urban Spaces**

Open spaces between residential buildings is the bond with nature and the place for spending leisure time in everyday life (Eini Far, Ghazizadeh., 2010: 36). Open space is a part of urban environment that by its facilities whether visually by having a positive impact on the urban landscape and through public access is effective (Mozafar et al., 92: 97-94). These spaces are a reflection of cultural values and helps create a sense of trust and confidence to people and increase the sense of solidarity and belonging in people (Carmona, 1391: 78-70).

Urban hidden spaces are opportunities that have been left without attention and despite the numerous potential no benefits and appropriate use of them is conceived and of course they do not help the city. Opportunities that especially due to lack of proper spaces for public sports in cities could be used more and compensate for this vacuum [1].

Moreover, urban open space is for citizens and their crystallization of collective life, and should meet needs of their social and collective life. In these spaces citizens have face-to-face social interactions with each other. The interlocutors of this space a wide range of social strata, different age groups, and so on [2].

Diversity and complete distribution of sports fields proportional to the social structure of neighboring residents increases authority and power and efficient use of the sports fields will be selected.

In other words, municipality has implemented very useful programs and measures in encouraging citizens to exercise and managing state-sanctioned sports. In this regard, the role of municipal management with a wide range of construction and service tasks in the field of developmental of sports facilities with the aim of providing spaces for spending leisure time of citizens is very important [3, 4].

Also stressing the importance of neighborhood in managing city and urban management due to the development of sport for citizens in urban areas creates a sense of belonging to the neighborhood and the city. In fact, development of sport spaces at local level strengthens social mobility of the population living in urban areas and creates a healthy social connection and creates intimacy with the love and friendship, and sportsmanship [5].

## **3. Understanding the Study Area**

Mashhad with a population of 2427000 people and an area of 29580 hectares is the second largest metropolis in the country. Mashhad city's population growth rate has been high in comparison with other metropolises and from 1966-1977 so far has had the highest growth rate among other metropolises introduced [6]. Thus, the use of hidden urban spaces as the existing potential to provide services for this population growth can be an effective step.

Because social, cultural and economic characteristics of the people are effective in choices and tendency to spend leisure time sports, etc., social studies are done in different areas for social grouping.

From the data collected, three major social variables that have been more involved in determining lifestyle of the community have been the basis for comparison and classification of areas [8].

According to defined criteria and based on studies in Mashhad, five clusters that indicate socio-economic status from weak to optimum are shown in five different colors in Figure 1.

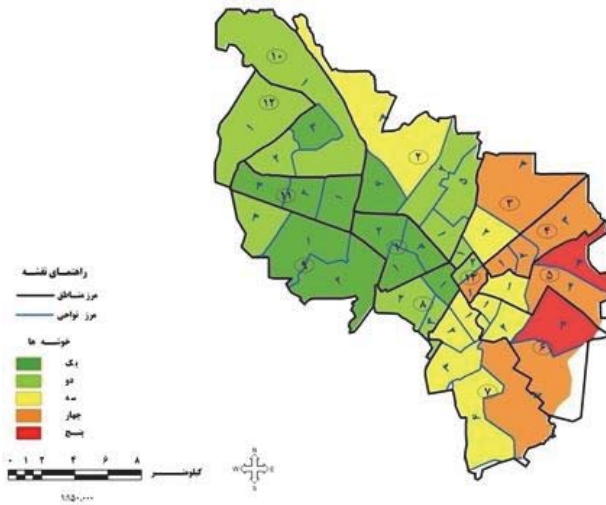


Figure 1: Socio-economic Zoning of Mashhad [9]

#### 4. Sports Fields and Socio-Economic Levels

Identify the relationship between a variety of outdoor sports fields with diverse socio-economic levels in Mashhad is difficult, because open sports fields only have physical entity and do not have social human identity in themselves. Thus, for dividing lands into different proposed levels, consider the the following criteria:

1. The extent or size of the land: about one-third of the sample respondents used open sports land of 1000 meters and smaller and another one-third used between 1001 to 2000 meters (usually a total of 64.4%, or about two-thirds of the total) and the remaining one-third of the respondents used larger lands. As the area of land is less the number of beneficiaries of its land is higher and vice versa.
2. Diversity of each of outdoor sports facilities: diversity in sports facilities and activities causes increase in the population using it.
3. The number of spaces related to each sport in each of the land: this is a very effective in absorption of users. Location of outdoor sport spaces such as access to it by local residents, security index, beauty and so on.

Area of most of the open sports spaces in Mashhad is small (below 2000 or even below 1000 m). High cost of land in a great city like Mashhad does not let construction of a large number of big areas especially in central parts or middle and upper socio-economic grade places, so that in the sample studied 31.3% was lands below 1000 m and 33.3% to lands of 1000 to 2000 meters.

Although various regions and areas of the city have main differences in the enjoyment of facilities, in all of them the same sport is performed. According to a survey conducted in 13 districts in Mashhad, sports such as futsal, 35 percent, volleyball 23.3 percent, small goal football 18.4%, Ping-Pong 12.1%, basketball 9.7% and skating 1% have been played [10].

Therefore, performing the sports mentioned is not related to the level of the socio-economic level, but it is related to sport facilities on one hand and on the other hand to exercise habits of the citizens. However, in case of providing those sports that require more expensive equipment, it is likely that they are more welcomed by wealthy areas of Mashhad.

#### 5. The Criteria for Grouping Sports Fields

On locating areas with important uses, different criteria in terms of social, economic, physical, environmental ones are used. Measures by using which in different models and analyzing them the best position dedicated to activities can be provided. In line with the performance of these activities, in addition to location, they should be evaluated regarding spatial positioning.

In evaluation, positioned spaces are prioritized due to their nature, goals, structure, and physical space measured and locations of these activities. The evaluation criteria for programs of monitoring the situation and coordinating and match their overlapping goals in the period of time the program is used. Classification criteria are done in line with grouping according to the characteristics of the sports fields. Table (2) offers criteria to be applied in the space analysis, site selection, evaluation and sport uses.

**Table 1:** Description of the major factors affecting locating, evaluating and categorizing the sports fields [11]

Type of analysis	Socio-demographic	Economic	Physical	Environmental	Management
Positioning	-Population -The age – sex structure -Level of education -Cultural structure	-The value of land - Economic status of households -The type of seizure - The current activity	-Neighborliness -Network access -The extent and breadth of the land -Level / Performance Scale -Details Date Location -Access to infrastructure -Type: -nobility- privacy	-Climatic factors -Soil -Topography -Orientation -Species -Sun - Wind - Rain	- Land ownership
Evaluation	-Population -The number of visitors -The time use of land -Level of education -Age -Material -The level of welfare of citizens - Sporting interests of citizens	-Per capita income -Occupational prestige -The value of ground movement - Impact on the value of land and the environment	-Neighborliness -Network of access -The extent and breadth of the land -The land -Level / Performance Scale -Land position in the area / region / city -Land use mapping City -Aristocracy-privacy - The role of induction and collective memory	-Slope -The Sun -Shading - Wind direction	-Maintenance of land -Land management - Social participation
Land classification	-Population of district / region / area -The amount of visitors -The use of land -Level of education -Age -Material -Ethnic neighborhoods -Willingness to public participation -Social Security -The level of welfare of citizens - Sporting interests of citizens	-Per capita income -Occupational prestige - The value of ground movement	-Neighborliness -Network of access -The extent and breadth of the land -The Earth -Level / Performance Scale -Land position in the area / region / city -Physical standards of sports - The role of induction and collective memory	Slope -The Sun -Shading - Wind direction	-Maintenance of land -Land management - Social participation

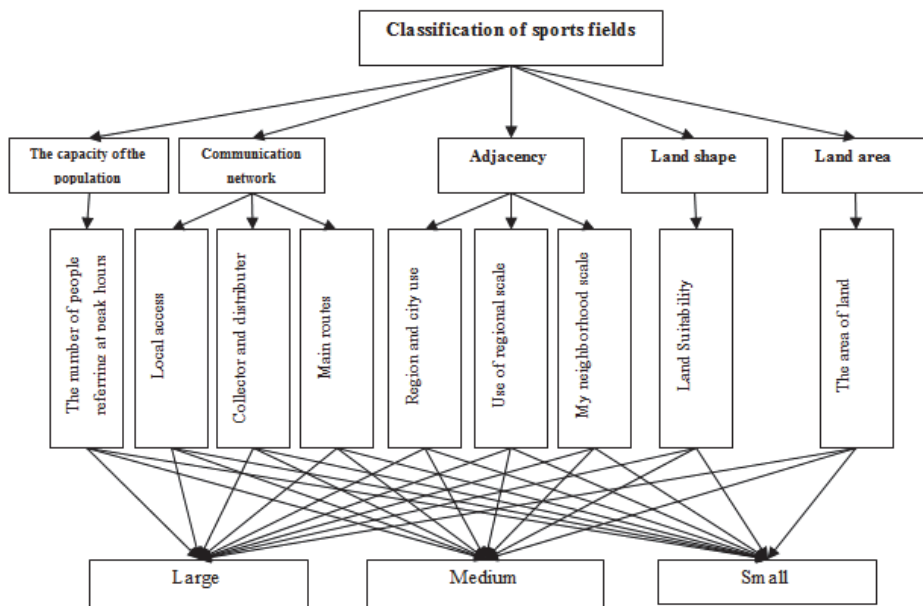
Given that the purpose of this discussion is grouping the sports fields proportional to its physical condition, from among the classification criteria presented in the table above, criteria responsive to the target were selected are introduced:

- The number of visitors at peak hours: The purpose of this standard is to respond to maximum people referring to current exercise activities in the land devoted to these type of activities.
- The land shape (physical proportions of the land): The land shape should be consistent with the standard of sports with priority on the municipal division performance levels and respond to the requests of users along with observing the standards.
- The area of land
- Physical standards for a variety of sports: Standards have a close relationship with the sport with priority selected by the residents of the neighborhood priority and determine the type of sport and physical status of the land in question.
- Network of communication
- Neighborliness of land: By rating and determining the degree of importance for neighborliness criterion, one can reduce its negative effects on the sports ground. Avoiding proximity to residential areas and proximity to public uses such as education, green space, services, etc. are recommended.

## 6. The Application of the Criteria for Classification of Land

The criteria used in the classification of the sports fields are huge qualitative and quantitative criteria that are in conformity with each other have the capability of grouping open sport land. Since Mashhad has heterogenous social and economic tissue, one cannot consider the same rank and weight for each criterion, these differences along with other criteria such as proximity, the capacity of the population, area, and access create complex conditions. To this end, and in line with the criterion of realism in the region, in categorizing, fuzzy analytical and hierarchical models are used.

In using fuzzy logic, at first the criteria are made homogenous and then according to the structure of each area and urban area, the criteria associated with the classification are weighed. Then, by combining them, a classification in small, medium and large categories is achieved that encompasses not only the land area but also other standard such as population capacity of each of the areas, adjacency of land, levels of performance, network of access, shape and size of the land. At this stage, the relationship between criteria and sub criteria is hierarchically defined. Then after the weighting criteria, in order to assimilate criteria and more realism in the work, fuzzy criteria are used and each criterion and their sub criteria are classified between 0 and 1. Chart 1 shows how to make the hierarchy relevant to the subject and target.



**Figure 1:** Hierarchy for classification for land

According to the weighting of the criteria in each area the lands are grouped. Thus, land in any area is classified regarding the type of sport, the situation in the region and its territories, the total weight of each criteria and finally classified to large to small classes.

It should be noted that in classification of each land in categories of small to very large, in addition to the criteria of land area, various criteria in terms of proximity, communication network, shape and form of the land and the number of people referring at hours peak are also considered. Thus, according to the standard weight in any urban area, lands with different areas may be placed in each small to large groups. This fact indicates that are criterion is not the only applicable criterion.

**Table 2:** A model for establishing open sport land with area groups of ideal social structure [11]

Area Grouping	Qualitative indicators to determine the (type of sport after 2010)	Area		Prioritization of the proposed sports	
				Team sports	Individual sports
Small	Distance more than 250 meters from the main road network and closeness to the local road network (access) Proximity to local services are less than 100 meters (schools, green spaces, local businesses, etc.) The maximum people referred to in the peak hours, less than 20 people	Less than 500 square meters	100-200	Basketball Volleyball Mini handball	Badminton Table tennis Chess
			200-300		
			300-400		
			400-500		
		500 to 700 square meters	500-600	Small goal Basketball Volleyball Mini handball	Tennis Badminton Table tennis Chess
600-700					
700 to 800 square meters	More than 800 meters	Futsal Small goal Basketball Volleyball Mini handball	Tennis Badminton Table tennis Chess		
Medium			1000 square meters or less	With small field sports proportional to the area of land	
	50 to 150 meters distance from the main road network (MAP) and the proximity of the road network and players Proximity to local services are less than 100 meters (schools, green spaces, commercial areas, etc.) The maximum people referred in the peak hours between 20 and 40	100 to 1600 square meters	Small goal Futsal Basketball Volleyball Mini handball	Skate Tennis Badminton Table tennis Chess	
		1600 square meters and more		Track and field Skate Tennis Badminton Table tennis Chess	
Large	Distance less than 50 meters from the main road network (MAP) Adjacent to the service area are less than 100 meters (schools, green spaces, commercial areas, etc.) The maximum people referred in the peak hours between 40 to 50	Less than 3,000 square meters	With medium and small sports fields		
		3000 to 4000 square meters	3000-3600	Futsal Small goal Basketball Volleyball Mini handball	Track and field Skate Tennis Badminton Table tennis Chess
			3600-3800		
		4000-4800	Futsal Small goal Basketball Volleyball Mini handball	Track and field Skate Tennis Badminton Table tennis Chess	

**Table 3:** Model of setting outdoor sport area with the average social groups [11]

Area Grouping	Qualitative indicators to determine the type of sport (after 2010)	Area		Prioritization of the proposed sports	
				Team sports	Individual sports
Small	Distance more than 250 meters from the main road network (MAP) and close to (the local road network access) Proximity to local services is less than 100 meters (schools, green spaces, local businesses, etc.) The maximum people referred to in the peak hours, less than 20 people	Less than 500 square meters	100-200	-	Basketball Badminton Table tennis Chess
			200-300	Volleyball	
			300-400		
			400-500	Basketball Volleyball	Badminton Table tennis Chess
		500 to 700 square meters	500-600	Basketball Volleyball	Tennis Badminton Table tennis Chess
			600-700	Small goal Basketball Volleyball	
		700 to 800 square meters	Futsal Small goal	Skate Tennis Badminton Table tennis chess	
More than 800 square meters	Basketball Volleyball				
Medium	Distance 50 to 150 meters from the main road network (MAP) and close to (the local road network access) Proximity to local services is less than 100 meters (schools, green spaces, local businesses, etc.) The maximum people referred to in the peak hours, less than 20 to 40 people	1000 meters and less		With small field sports proportional to the area of land	
		1000 to 1400 meters		Small goal Futsal Basketball Volleyball	Skate Tennis Badminton Table tennis chess
		1400 meters and more			
Large land	Distance less than 50 meters from the main road network (MAP) and close to (the local road network access) Proximity to local services is less than 100 meters (schools, green spaces, local businesses, etc.) The maximum people referred to in the peak hours, less than 40 to 50 people	Less than 3000 square meters		With medium and small sports fields	
		More than 3000 square meters		Football on the ground Small goal Futsal Basketball Volleyball	Skate Tennis Badminton Table tennis chess
Very large lands	The proximity of arteries 1 and 2 Proximity to local services and the city are less than 100 meters (schools, green spaces, commercial district, hospital and so on) The maximum people referred to in the peak hours more than 50 people	Less than 5000 square meters		With medium, large and small sports land in proportion to the land area	
		5000 to 6000 square meters		Football on the ground Handball Small goal Futsal Basketball Volleyball	Skate Tennis Badminton Table tennis chess
		6000 to 7000 square meters		Football on the ground Handball Small goal Futsal Basketball Volleyball	
		More than 7000 square meters		Football on the ground Handball Small goal Futsal Basketball Volleyball	

**Table 4:** A model for the establishment of an outdoor sport area in groups with weak social structure [11]

Area Grouping	Qualitative indicators to determine the type of sport (after 2010)	Area		Prioritization of the proposed sports	
				Team sports	
Small	Distance more than 250 meters from the main road network (MAP) and close to the local road network (access) Proximity to local services is less than 100 meters (schools, green spaces, local businesses, etc.) The maximum people referred to in the peak hours, less than 20 people	Less than 500 square meters	100-200	-	
			200-300	Volleyball	
			300-400	Volleyball	
			400-500	Basketball Volleyball	
		500 to 700 square meters	500-600	Basketball Volleyball	
			600-700	Small goal Basketball Volleyball	
		700 to 800 square meters	Small goal Futsal Basketball Volleyball		
More than 800 square meters	Small goal Futsal Basketball Volleyball				
Medium	Distance 50 to 150 meters from the main road network (MAP) and close to the local road network access) Proximity to local services is less than 100 meters (schools, green spaces, local businesses, etc.) The maximum people referred to in the peak hours, less than 20 to 40 people	1000 meters and more		With small field sports proportional to the area of land	
		1000 meters and more		Small goal Futsal Basketball Volleyball	Badminton Table tennis Chess
Large land	Distance less than 50 meters from the main road network (MAP) and close to the local road network access) Proximity to local services is less than 100 meters (schools, green spaces, local businesses, etc.) The maximum people referred to in the peak hours, less than 40 to 50 people	Less than 3000 square meters		With medium and small sports fields	
		More than 3000 square meters		Football on the ground Small goal Futsal Basketball Volleyball	Badminton Table tennis Chess
Very large land	The proximity of arteries 1 and 2 Proximity to local services and the city are less than 100 meters (schools, green spaces, commercial district, hospital and so on) The maximum people referred to in the peak hours more than 50 people	Less than 5000 square meters		With medium, large and small sports land in proportion to the land area	
		5000 to 7000 square meters	5000-6500	Football on the ground Small goal Futsal Basketball Volleyball	
			6500-7000	Football on the ground Football Small goal Futsal Basketball Volleyball	
		More than 7000 square meters		Football on the ground Football Small goal Futsal Basketball Volleyball	



## 7. Conclusions

To transform urban non-place spaces to dynamic places and exploitation of these spaces into spaces with temporary sports, the physical land, social and economic characteristics of the land and residents need from the complex and so on should be examined and the proposed final sports resulting from the integration of socio-economic criteria and physical criteria for classification of land should be offered.

In this regard, the areas should be divided and grouped into social and economic areas in three categories: good, moderate, and weak by criteria such as land area, land shape, the neighborhood, communication network and the population capacity and accordingly, the type of team and individual sports and performance measures should be determined, so that using the tables provided for each of the land according to the social structure the following can be revealed:

- Placement of land in each of the categories of small, medium, large or very large
- Indicators of the quality required according to the grouping of peripheral arteries, proximity to local, district, regional or municipal, the maximum amount referred to in peak time
- Area classification of the land
- The priority of the proposed sports as individual and team respectively

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