
Explaining Social Criteria in Measuring Urban Environment Quality with Emphasis on Physical activity (Case study: Hijab Neighborhood)

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Abstract

Urbanization growth in recent decades has led to widespread health, social and economic inequalities among residents of many cities. Among its most important consequences is inactivity of citizens around the world as well as Iran. Physical inactivity, as one of the most important issues of public health, is related to the social environment and citizens' daily lifestyle and activities. Among the criteria that should be taken into consideration in today's urban life are social criteria. For this purpose, the indicators obtained from the author's studies were measured within the framework of the study. Accordingly, the purpose of the present study is to explain the social criteria for measuring the quality of urban living environment with an emphasis on opportunities for physical activity, and to investigate the relationship between social criteria and physical activity of citizens in the study area (Hijab neighborhood of Mashhad). The present study is a descriptive-analytical one. Therefore, the theoretical basis was collected using library studies and then a questionnaire was used to check the tools obtained in the hijab neighborhood and the data was later analyzed by SPSS software. This was statistical analysis. The results show that: First, the indicators of social benchmarking in the urban environment fall into two main categories: social security and social interactions, between the two of which there was a significant correlation.

Key words: Urban Environmental Quality, Physical Activity, Social Criteria, Hijab Neighborhood

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1. Introduction

One of the features of the present era is an increasing population of cities and, naturally, development of small and large cities. These urban development and urbanization growth in recent decades has been accompanied by destruction of urban areas and widespread health and social and economic inequalities (Zarabi et al.,2012). Physical activity has always been an important issue in urban communities. In recent years, health has gone beyond the personal dimension and has also included social health. Recent developments in urban life, including increased use of automobiles, have led to increased inactivity in urban environments and necessitated addressing this issue in terms of its contribution to premature mortality and economic costs, which is due to the trend of use of land and the existing transportation systems in cities is not unexpected. Physical activity is one of the essential elements of a healthy lifestyle that needs be addressed by more and more citizens. For this reason, the purpose of the present study is to investigate the types of physical activity in the urban environment (including walking, cycling, etc.) that can enhance the well-being of citizens in urban environments. Many are concerned whether the residential environment can promote physical activity and health of citizens or not; thus, in recent decades researchers have looked for a way to measure and improve the quality of living environment regarding physical activity. Recent research with design

and planning tools has attempted to discuss public health issues in the urban environment; choosing where to live, how to get to work and shopping centers, schools, leisure centers all on activity all influence citizens' physical activity. In this regard, considering the role of urban planners and designers in exploring solutions to curb these adverse effects on society, the necessity of examining the relationship of physical activity to quality of citizens' living environment is highlighted. One of the most important strategies is to increase opportunities for citizens' physical activity that can change the governing conditions of cities. The importance of the foregoing, with the increase in physical activity in the city, can be cited as an indicator for improving quality of housing. The physical activities in urban environments are influenced by different criteria. In this paper, we investigate the relationship between social criteria and physical activity in urban environments. Therefore, the purpose of the present study was to get social benchmarks for measuring the quality of urban living environment with an emphasis on physical activity opportunities of citizens and finally to investigate them in the Hijab neighborhood, in District 10 of Mashhad. A medium-sized, well-planned, economically populated with the middle-class, with a new, predominantly residential area, filled with apartment buildings, was selected as a case study. Thus, the research questions are:





What are the social criteria for measuring citizens' opportunities for physical activity?

Is there a relationship between physical activity and social dimension?

2. Literature review

The quality of a balanced life is defined as the supply of biological and human needs and integration of people into their social situations, which is related to the empirical determination of human needs. Some have interpreted it as the viability of an area, others as a measure of attractiveness and some as public welfare, social well-being, happiness, satisfaction, and so on. However, there is still no universally accepted definition of this concept. Because many scholars believe that quality of life is a multi-faceted, relative concept, influenced by time, place, personal and social values. In general, three groups of functional, social, and aesthetic qualities can be considered as factors affecting the quality of life. In this article, the author has mainly focused on the social criteria. While car-dependence as a model of sedentary travel has dominated urban spaces today, creation of urban spaces tailored to physical activity, such as walking and cycling, in urban design enhances citizens' health. Walking, cycling, and walking from schools to residential areas, and urban spaces for groups such as the elderly and the physically handicapped are measures of expanding vibrant and active urban life. The way

urban spaces are designed and if they are within close proximity to local services and infrastructures, as well as the architectural style of landscapes have a definite impact on the quality and efficiency of these spaces. Overall, it is a vibrant urban community that continuously provides inbuilt opportunities in social environments, and improves and expands community resources to enable all citizens to be physically active in daily life. (Edward, 2012).

2.1. Physical activity

Physical activity is any type of physical movement performed by skeletal muscles and therefore consumes more energy than the time the body rests. These activities in the city include hiking or cycling for recreation, traditional games, and leisure activities, as well as conscious exercise. All forms of physical activity can be useful, but the goal is to benefit from a health-based physical activity is defined as any physical activity that is beneficial to the body's health and functional ability, which does not lead to injury or danger. This goal is achieved by incorporating mild physical activity into daily life (such as walking or doing other activities that increase breathing and rising the body temperature).

The health benefits of physical activity in all aspects are well known. Regular physical activity improves mental, physical, and social well-being and helps prevent illnesses, disabilities, treatment and overweight. Cities that invest in physical activity programs (including active



transportation) are more environmentally friendly and attractive. While they increase health rate, making citizens and employees more effective, they also provide less pollution and noise, access to more favorable green space, all of which ultimately enhance neighborhoods, cohesion and social identity and develop social systems (Edward, 2012).

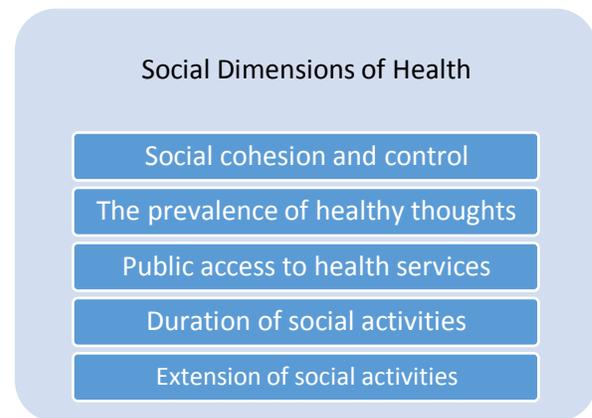
Increasing access to active spaces, including playgrounds, sports venues and parks between sidewalks, incorporating special facilities for children, the youth and people with disabilities, such as free or cheap access to opportunities for doing exercise, as well as access to public transportation, especially for the disabled, the elderly, and disadvantaged, enhance environmental opportunities to use recreational facilities. In general, creating or enhancing physical activity opportunities in places where people spend their leisure time can dramatically increase physical and social activity.

2.2. Social criteria

Over the past few years, the evolution of health in the world as well as Iran has led to an increased focus on social issues (Marandi, 2011). Urban health is primarily about social health because urbanization is a social phenomenon. If the cultural environment of a society conforms to its ethical norms and does not deviate from such norms, there will be social health in that society. Although there is no single universal indexing definition for social health, specific criteria has

been applied to each region. Social factors affecting health have been the focus of attention of the World Health Organization for many years, even in the context of the Third Millennium Development Goals which was also signed by Iran though in our country, this issue has not yet received enough attention. The most important factor affecting health in societies is the social one (Marandi, 2011).

Figure 1: Social Dimensions of Health



The second level of impact on people's health is social impact; urban planning can act to destroy social networks like sensitive urban renewal schemes, or vice versa, which can offer opportunities to create a rich social life. Local social networks, which include mutual support and friendships between people, influence everyday community activities as well as public hangouts such as schools, post offices, cafes and halls, and safe streets. Therefore, the sustainability of such networks and local facilities depends in part on long-term coherent strategies in housing construction, economic development,





and transportation. Economic support for the most vulnerable groups is of particular importance. Without this support, people are likely to be less healthy and more depressed. This does not mean that urban planning is enough to create a whole society. It is the people who decide to form communities, but urban planning affects the different opportunities that people have to make choices. The rise of opportunities for active living in social environments by recognizing and relying on the capabilities of a diverse population, reducing inequality, enhancing social support for active living, enhancing security and crime prevention, and addressing perceived and real risks for participation. It is essential to have effective communication with people, suggesting actions and events and partnering to give innovative programs in the recreation and sports sector for all ages and groups. Walking provides more opportunities to get to know and interact with others in neighborhood units. During hiking, especially recreational-sport hiking, people become acquainted with new friends and the level of social interaction improves. The greater the presence of people on the streets, the greater their indirect control over the surrounding area. In addition, as walking promotes social relationships, the general security of neighborhoods increases. On the other hand, in our society, the use of bicycles is not considered appropriate for women even though women constitute half of the society and often have shorter travel distances than men (traveling for

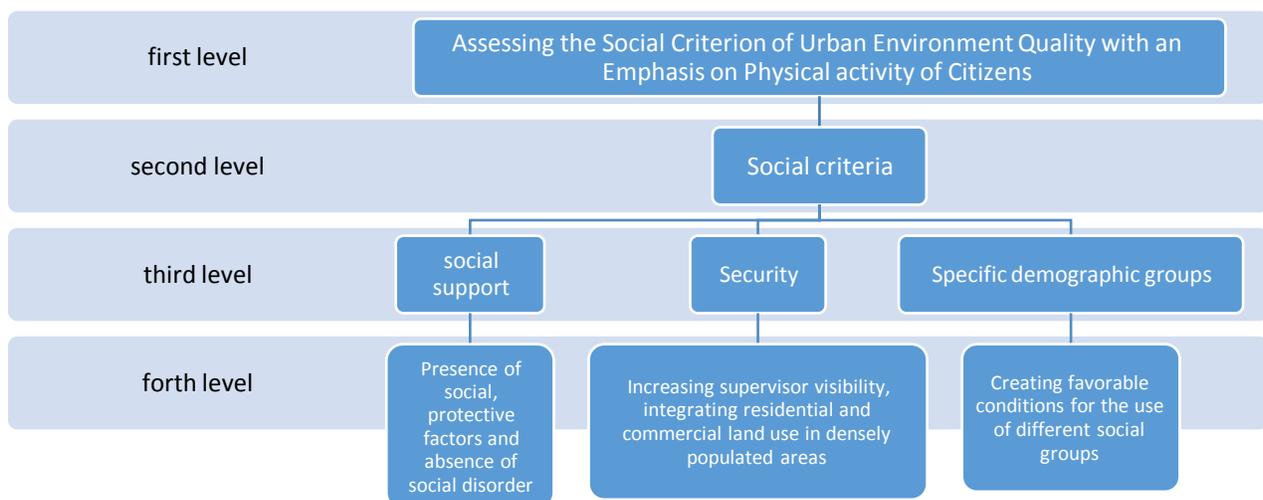
shopping, traveling for picking children up after school). They cannot use bicycles due to cultural and social barriers. What's more, the mothers' not riding bicycles causes these vehicles to be less popular among children. Children learn different behaviors from their parents through modeling. If mothers use bicycles as a means of transportation in their daily commutes, children also learn this behavior. "The views and perceptions of society on the social status of cycling is itself one of the cultural barriers to development of cycling" (Abbas Zadegan, 2007). The dominance of cars over outdoor areas threatens child safety and increases the risk of traffic accidents. The loss of social bonds in neighborhoods also reduces the level of safety for children outdoors while they are alone. Ghaffarian Shoaie et al. (2014), in a study, identified how urban pedestrian elements influence the dimensions and components of pedestrian health using the qualitative correlation method. Marginal uses, color of materials, and pots and flowering shrubs have the highest impact on pedestrian health components. Besides, pedestrian surfaces have the greatest impact on physical health, pedestrian furniture on social health: plants on mental health, and soft elements on the sidewalks on social and mental health. Mohammadi et al. (2014), in an article for measuring the neighborhoods of Isfahan, have tried to find the more deprived neighborhoods in the city with their influential indicators and also attempted to improve the quality of those quarters through making suggestions. The questionnaire



was completed by the city administrators and TOPSIS and cluster analysis were used to analyze the information. Regarding the factors affecting the quality of the neighborhoods, the highest impact of the indicator of "low social status of residents" has the least impact on "lack of access to historical-cultural sites", given the impact of factors affecting quality of the environment. In the end, solutions provided such as maintaining cleanliness in neighborhoods, removing residential land use, protecting existing green space, and more. Kastrzewska (2017), aims to show the architectural and urban features of contemporary public spaces in cities that can help promote physical activity. The results of the case study and study offer spatial solutions and examples of good practices that encourage residents to do various types of physical activity in public space. The main outcome of this research is attention to different needs of different social groups, participation in design and

construction process, aesthetic and interesting design, proximity of residence, free access of all age groups and persons with disabilities to Sports and leisure infrastructures. Therefore, in the present article, after examining different aspects of this issue among theoretical foundations and measures about physical activity methods and their impact on urban environment quality, we attempted to present social benchmarks, described as a theoretical framework for research. Thus, in general, the theoretical implications of the social criterion for opportunities of physical activity were obtained, which were enhanced by sub-criteria and indicators that enhance the quality of the living environment. Therefore, we can summarize the social benchmark components in the urban environment in three main indicators: social support, security, and specific demographic groups (Figure 2).

Figure 2: Conceptual model of research



3. Materials and Methods

This article is an applied, descriptive-analytic method. In this study, according to the problem and our aim, a population analysis unit in the neighborhood was selected. The sample size was estimated using the Cochran formula of 384 persons out of 44834 inhabitants of the Hijab neighborhood in the 10th district of Mashhad metropolitan municipality announced by the Iranian Statistical Center in the 2011 census, using available sampling method. In this study, a large amount of information was collected on the social dimension of the urban environment and physical activity based on field method, documents, libraries (articles, books, and reports) and the Internet. Then, by examining the dimensions and frameworks of physical activity, the most important indicators used were the social criteria listed. Next, the required information was collected from the sample population using a field method and a Likert-type questionnaire whose validity was confirmed by a pre-test. Then, by entering the data from the questionnaire into the SPSS software environment, validity of the research tool was estimated using Bartlett's test, which in most of the questions was more than 0.7, which indicates the high internal consistency of the research instrument and the index. The proper reliability-providing questions checked the physical activity of the study area. Next, the conceptual model framework and the extent to which each of the

indicators (e.g. security, interactions, etc.) influenced the main variable (i.e. physical activity) were shown.

The neighborhood of Hijab, one of the planned and new neighborhoods of Mashhad, is located in the northwestern part of the city. This area comprises districts 10, 12 and part of district 2. District 10 of Mashhad Municipality covers an area of 1918 hectares and has a population of 265205, according to the 2011 census, covering areas northwest of Mashhad that have long been sprawling with open spaces and were known for their scattered villages. The area consists of three districts, the Hijab District is in District 3. It covers a total of 254 hectares and accommodates about 63,000 people in its predominantly residential and condominium complexes. Most of its population are clerks and the economy of the neighborhood is at a moderate level. This neighborhood has its Hijab axis, one of the main trading hubs in the northwest, at its center.

Figure 3: Location of the study area
(Hijab neighborhood)





4. Results

As mentioned earlier, the variables of this research were obtained through extensive review of theoretical foundations. Exploratory factor analysis was used to classify the factors affecting physical activity and to quantify the variance explained by each variable; plus, the KMO test was used to decide suitability of the data collected for analysis. Based on the KMO test result of 0.86, the research data can be reduced to some underlying factors. Also, the result of the Bartlett test (1519/508), which is significant at the error

level of less than 0.01, was used in this study to spot significant factors. (Table 1).

Table 1: KMO value and Bartlett test and significance level

Criteria	KMO	Bartlett value	Sig.
Factors Affecting Physical Activity	0.86	1519.508	0.00

Table 2: Extracted Factors, Eigenvalues, Percentage of Variance, and Cumulative Variance Percentage

Factors	Initial Eigenvalues			Eigenvalues of non-rotating extraction agents			Eigenvalues of rotational extraction agents		
	Total	Percent of variance	cumulative percentage	Total	Percent of variance	cumulative percentage	Total	Percent of variance	cumulative percentage
Social Security	1.405	5.856	62.322	1.405	5.856	62.322	1.890	7.876	58.735
Social interactions	1.235	5.147	67.469	1.235	5.147	67.469	1.808	7.535	66.269

According to factor analysis, only the factors that have an eigenvalue greater than one were extracted. In the present study, two factors have an eigenvalue higher than one. Therefore, out of a total of 14, two factors could be extracted. These two factors account for 66.269% of the total variance of the whole. Each extraction factor consists of several variables. The condition of loading agents after rotation was based on

placement of variables with a factor load higher than 0.5. The social criterion consisted of two components, namely security and social interaction. Security (robbery, youth rallies, etc.), social support and specific demographic groups were also included. Among the several factors studied, the following table variables can be illustrated with the most factor load. The variables mentioned are factor loadings, security



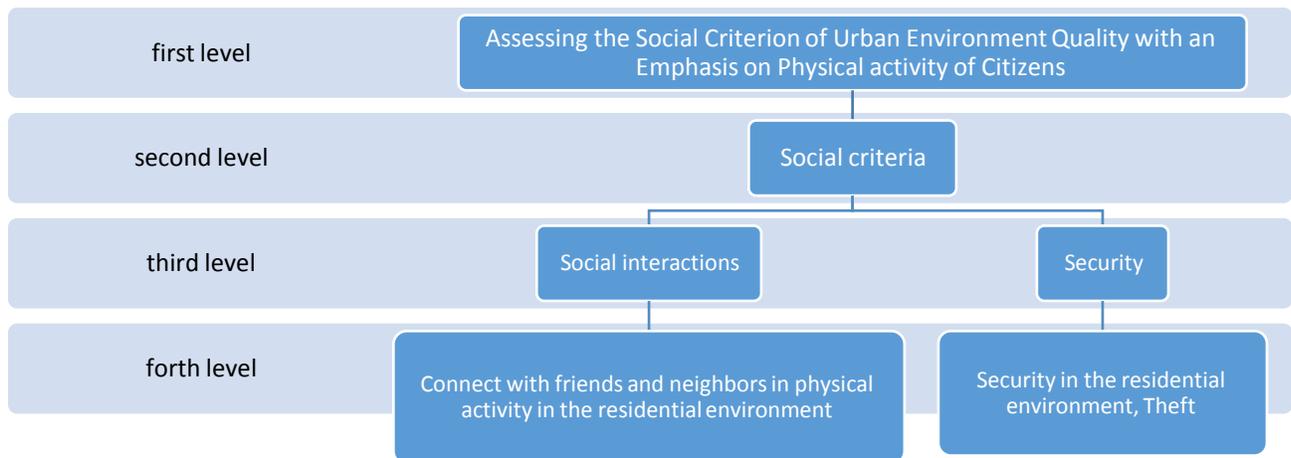
in environment 0.674, neighbor relations with 0.611 and theft with 0.404, respectively. Of course, there were other variables such as traffic, but they were omitted because they had a factor load of less than 0.5. The variables mentioned are factor loadings, social security with a specific value of 1.890 and 58.735% of the variance, and social interactions with a specific value of 1.808, and variance of 66.269%. (Table 2)

Therefore, the last conceptual framework for the research is presented in Figure 4 with four levels and two indicators.

Table 3: Social variables were loaded and factor loadings were obtained from the rotated matrix

Criterion	Factor	Variables	Factor load
social	Social Security	Security in the environment	0.674
	Social interactions	Connect with friends and neighbors in physical activity	.0611
		Theft	.0404

Figure 4: Final conceptual framework of research





4.1 There is a significant correlation between physical activity and social dimension.

The results of Pearson correlation table (Table 4) for the two variables of physical activity and social dimension show that there is a significant correlation between the two. Therefore, the hypothesis of the present study was confirmed.

Table 4: Pearson correlation test to examine the relationship between physical activity and social dimension

independent variable	Statistical Criterion	Physical activity (dependent variable)
Social	Pearson	0.729
	Sig.	0.000

5. Conclusion

In this article, first the social criteria of citizens' physical activity in urban environments were explained and then the conceptual framework derived from theoretical foundations of research in the study area (Hijab neighborhood of Mashhad) was investigated. Studies on Citizens' Physical activity, after exploring and analyzing exploratory factor analysis on the indicators which were obtained from theoretical foundations, show the role of two indicators of security and interactions in social criteria. It noted that although these indices are a key element in achieving development of physical activity opportunities and each plays a specific role in the urban planning system, their mere existence is not

a necessary condition for improvement of the physical activity of citizens. What makes these indicators sufficiently relevant to research on citizens' mobility and the improved quality of the urban environment is necessity of having them all together. Realizing the criteria outlined in this article also requires the mutual attention of city managers and citizens. The main result of this research is attention to different needs of various social groups, participation in the design and construction processes, aesthetic and interesting design, proximity of residence, free access for all age groups and persons with disabilities, Sports and recreation infrastructures used to reach the highest level of physical activity in the urban environment. Overall, this paper has found a positive correlation between social criteria and physical activity of citizens in the urban environment and the benefits of social health. According to the results of studies on physical activity and various variables affecting it, it is generally possible to relate the design and planning of urban environment with the level of physical activity of citizens, and thus its impact on urban environment quality, which substantiated in earlier studies by researchers as well as the results indicated in this article.

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