

## Assessing Design Principles of Urban Parks in Iran for Promoting Women's Satisfaction

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### Abstract

*Parks, as one of the most important urban spaces, play an important role in promoting quality of life and community development. Research on urban public spaces has been growing but pays almost no attention to gender differences in the use of these spaces. Although the quality of park design and inclusion of nature nearby urban areas has been established by many scholars as necessary for human physical and psychological health, park design in Iranian cities remains subjective. Studies show that this ever-increasing inattention to the varied preferences of stakeholders has resulted in a decrease in park quality and a diminished sense of ownership that in turn has exacerbated existing social and infrastructural problems. Many studies indicate that in the past, public spaces were occupied mostly by men, and women's activities were allocated to home environment and private spaces. Despite the fundamental changes in gender roles in past 50 years, men and women occupy different social and physical spaces in urban areas, yet this problem exists currently in many countries. It is also argued that urban analysis and theorizing have focused almost exclusively on men and masculinity. After all, the success or failure of urban planning in creating or remodeling public space should be assessed by measuring both the number of male and female users. There is little effort to investigate the design guidelines of a desirable park for women. Women are one of the deprived strata of community in urban contexts in Iran. The primary purpose of this gender-based study with a quantitative-analytical approach is to identify design guidelines to enhance women's satisfaction and accordingly their presence. Data collected from scholarly resources and surveys in Saeed Park, one of the largest and most important urban parks located in central part of Tehran, was analyzed by SPSS and the factor analysis technique. Results indicate that amongst 13 factors, categorized in three groups including participatory design, design with nature and legibility-accessibility, it was found that participatory design is the most important factor of designing parks for women. This result reveals that, women should be involved in the first steps of design process. Accordingly, participation could promote their sense of belonging to conserve their spaces.*

**Keywords:** urban parks; public space; women equality; Iran; design guidelines; satisfaction.

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## **1. Introduction**

The inhabitants of today's cities do not only need food but good accommodation, proper living space, a quiet environment and clean air, all of which are main and fundamental human requirements. In recent decades the idea of enhancing the quality of urban life was introduced along with sustainable development. Urban parks have important social, economic and ecological roles with different benefits such as child rearing, treatment of psychological disorders and social integration (Ghorbani & Teymouri, 2010). Parks and nature are important settings for a number of public-health related reasons, in that they offer psychological restorative experiences, physical activity and social interaction (Nilsson, et al., 2011). Benefits related to contact with nature have been examined by environmental psychologists and generally, such contact has been determined to be necessary for human health and wellbeing. The importance of urban parks is that they can promote residents' quality of life (Mass et al., 2006; Mitchell & Popham, 2007) and create many tangible benefits for human physical and mental health (Handy, Boarnet, Ewing, & Klillingsworth, 2002; Hansmann, Hug, & Seeland, 2007; Hartig et al., 2003; Pretty, Peacock, Sellens, & Griffin, 2005; Takano et al., 2002; Ulrich, 1984; Van Den Berg, Hartig, & Staats, 2007). Public greenspaces are spaces that have social efficiency and people usually use them for recreation, leisure, and social-cultural gatherings (Saeedinia, 1994). Recently, many efforts have been made to understand the human-nature relationship in a more scientific way. These ideas are followed by many natural and social science specialists. They have different attitudes towards landscapes which could explain why contact with nature promotes human health. Finally it can be said that contact with the natural environment is important for human beings and could help human health and wellbeing in many different ways (Parry-Jones, 1990). In this research, we try to prioritize the effective factors which influence women's presence in urban greenspaces and promote their quality of life and wellbeing.

### **1.1 Necessity of women's presence in urban open spaces**

Krenichyn's study (2004) indicated that urban spaces are valuable because of their ability to create and increase social relations. After investigating Prospect Park as a place for daily physical activity, she found that urban parks could provide opportunities for physical activity, psychological restoration and social interactions and research should consider these aspects more seriously. Another study in Ontario has shown that the existence of greenspaces within cities is related to the reduction of the mortality rate in the long term (Wolch, et al., 2011). Studies in the US and UK also have indicated that women usually spend less time on recreational activities than men.

Another study in the US has confirmed that many women, especially African-American women, women who live in rural areas, elderly women and women with a lower level of education do not fully utilize their leisure time (Ransdell & Wells, 1998; Brownson, et al., 2000; Wilcox, Castro, King, Housemann, & Brownson, 2000).

Many studies indicate that in the past, public spaces were occupied mostly by men, and women's activities were allocated to the home environment and private spaces (Wilson, 1992). Feminism debates in the field of architecture show that built environments are mostly designed and constructed by men and as a result they completely neglect women's needs and desires (Roberts, 1991). Also, despite the fundamental changes in gender roles in the past 50 years, men and women occupied different social and physical spaces in urban environments. This problem exists in many other countries around the world (Hubbard, 2004; Peterson, Wekerle, & Morley, 1978); Middle age women experience higher health risks because of inactivity than young women and men (US Department of Health and Human Services 1996). Deprivation of women from equal rights and facilities to men is caused by gender segregation derived from the patriarchal values ruling on society. These values considered women as the second gender and define them in relation to men (Scott & Marshall, 1998).

Richard Sennett's book, "The Fall of Public Man" (Sennett, 1974), is aptly titled-women's public role is hardly discussed. Sennett argues that public came to mean a life passed outside the family and that the growth of public spaces for men occurred at the same time as the home was newly defined as the refuge from the world. Women were identified with the family –the weaker sex, not strong enough to associate with strangers in the coffee houses, cafes, restaurants, clubs and pedestrian parks (Wekerle, 1980). Deprivation has extensive dimensions but in this study, we take that dimension of deprivation into consideration, which is in association with urban facilities and should be equal for all citizens to use.

Women's use of urban spaces is lower than men because they feel it is mentally inaccessible and difficult to navigate and this doesn't attract them to the spaces. Also, girls face more challenges than boys to use public spaces, for example, for physical activities. This problem is probably because of cultural and religious values of the society. So, there are few proper places for women to spend their leisure time in religious cities as well as industrial ones, such as Tehran.

There is little effort to investigate the design values of a desirable park, especially for women, as one of the main users of public spaces. The primary purpose of this case study research with a quantitative-analytical approach is to identify design values which are influential on satisfaction of urban park users (here women), in order to present design guidelines to enhance their comfort and presence. As women are one of the poor stratum of the community in urban contexts in Iran, the main question of this study is: how can designers increase women's presence and activities in urban public parks based on their preferences?

## **1.2 Effective factors related to satisfaction of parks**

Parks are special places in which people could escape daily stressors and participate in a wide range of activities (Krenichyn, 2006). The success of the design of urban spaces depends on the designers' understanding of the users' needs and requirements. Jacobs believes that people's presence in urban spaces brings up some issues concerning social security and safety. Creating spatial enclosure, increasing densification, mixture and efficiency of uses, proper physical

organization as the qualitative and sustainable aspects of public domain are necessary to control safety (Jacobs J. , 1967). Urban spaces should be safe and welcoming to all social groups in all hours of the day and at the same time provide convenient access. Global experiences have shared that public spaces should be places for social life and interactions (Rafiyian & Khodaie, 2009). In recent years, many studies have been conducted about improving environmental quality indicators. Therefore, assessing residents' satisfaction of their living environment is important (Hourihan, 1984). Satisfaction of people's environment is based on two different viewpoints. Satisfaction is measured based on physical indicators such as temperature, perspectives, noise, and room location in a building... Also environmental indicators are a part of the human-environment relationship and finally, a part of environmental satisfaction (Rafiyian & Khodaie, 2009). First, theoretical framework about satisfaction represented by Marans and Rogers (1975) explains that satisfaction of the living environment is subject to people's perception and evaluation of environmental characteristics. These contain cleanliness, safety and demographics including gender, age and social class. In this research, cleanliness, safety and security, attractiveness, comfort, sustainability, type of environmental design, new context, access and demographics were mainly used to evaluate satisfaction (Marans & Rodgers, 1975). Fluery-Bahi et al (2008) examined four influential factors of environmental satisfaction. These factors are imagination of social environment, social relations, access to services and greenspaces (Fluery-Bahi, Félonneau, & Marchand, 2008). Bonnes et al (1991) found that the social densification factor overcrowding has negative influence on residents' environmental satisfaction (Bonnes, Bonaiuto, & Ercolani, 1991). Mahmoodi et al (2010) figured out sociability and social surveillance has the most influence on desirability of space among women (Mahmoodi, Ghazizadeh, & Monam, 2011). Trancik (1986) believes that five qualities are necessary to overcome urban design problems. These qualities are progression of movements, enclosure of spaces, continuity of edges, axis and perspectives control and connecting outside and inside spaces. Lynch (1981) found that livability, meaning, compatibility, access, control and surveillance are the main factors to promote quality of urban design and these are the quality of urban life. The Prince of Wales represented 10 criteria of place, hierarchy, scale, harmony, enclosure, materials, decorations, art, signs, symptoms and caring about local community as the most important qualities of urban design<sup>2</sup>.

London's Planning Advisory Committee (1993) published a report named LPAC<sup>3</sup> which announced that some issues such as human scale, urban densification, appropriate structure, legibility, identity, cleanliness and safety, desirable urban management, visual richness, mixed use, communal places, and easy access can determine the quality of urban design (LPAC, 1993). Haughton and Hunter (1994) also found that diversity; centralization, democracy, permeability, safety, appropriate scale, organic design, economics, creative relations and flexibility are the most important concerns about urban design quality (Haughton & Hunter, 1994). Urban furniture is a group of objects, devices, signs and elements that could organize the main part of activities around cities and increase citizens' use of surrounding environment and increase their comfort and joy in streets, parks and other urban areas (Amini & Samiari, 2006). Urban furniture should

<sup>22</sup> The prince of Wales, "A vision of Britain", 1989

<sup>3</sup> London's Urban Environmental Quality

be compatible with the environment and the users' needs. Sense of belonging to place could increase people's social investment (Rahnama & Razavi, 2013). Participation of young people in social activities could promote their sense of belonging and provide some opportunities for them to be helpful to the community (Sanoff H. , Community Participation Methods in Design and Planning, 2000). Community participation is also one of the most important aspects in sustainable planning which engages local communities in the decision making process to define key issues and priorities related to the goals and strategies of design (Amado, Santoz, Moura, & Silva, 2009).

Access to urban parks and greenspaces increases the variety of physical activities in urban societies (Floyd, Bocarro, Smith, & Baran, 2011; Giles-Corti, et al., 2005). The first step of researching benefits of greenspaces is evaluating their accessibility (Banzhaf, et al., 2014). Accordingly, concerns related to access to green spaces have been taken into consideration in recent years (Higgs, Fry, & Langford, 2012; Zhang, Lu , & James, 2011).

Author	Year	Urban Environmental Quality Factors
Jane Jacobs	1967	Social security, relying on public surveillance in urban spaces' design, creating spatial enclosure, increasing densification and mixing spaces, appropriate physical organization
Marans Rogers	1975	Cleanliness, attractiveness, comfort, safety, sustainability and type of design, newness of urban context, access, individual characteristics
Lynch	1981	Vitality, meaning, compatibility, access, control and surveillance
Violich	1983	Readability, freedom of choice, creating motivation through use, possibility of social life, readability of cultural heritage, considering local-ecological links
Roger Terancik	1986	Maintaining continuity of movements, space enclosure, edge continuity, axis and perspective control, connecting outdoor and indoor spaces
Prince Charles	1989	Place, Hierarchy, scale, harmony, enclosure, materials, decorations, art, signs, indicators and lightings, considering local community
Bentley	1990	Energy efficiency, cleanness (minimizing air pollution,...), nature and wildlife support
Philips	1990	Living environment including location of buildings and people live in them, community, housing system, social relations
Bonnes et al.	1991	Social density (crowd)
Green	1992	Connection, safety, Climatic comfort, diversity, order including: coherence, clarity, integration, balance, identity: forming focal points, unity, character and uniqueness, attractiveness: scale, visual and functional frequency, vitality and harmony
London's Planning Advisory Committee	1993	human scale, urban densification, appropriate structure, legibility, identity, cleanness and safety, desirable urban management, visual richness, mixed use, communal places, easy access and movement



Haughton and Hunter	1994	diversity, centralization, democracy, permeability, safety, appropriate scale, organic design, economics, creative relations, flexibility
Liu	1999	Physical comfort, health, safety, functional appropriateness, mental comfort, psychological safety, aesthetic, security, image/situation, community, spatial surveillance
Fluery-Bahi et al	2008	Imagination of social environment, access to services, greenspaces and social relationships
Rafiyian et al	2009	Sociability of space, social surveillance
Dadapour et al	2011	Increasing social capital and use in different levels of urban planning and design

Table 1- A synthesis of the most important factors

Regarding table 1, some factors have been extracted. These factors are; physical design of greenspaces, access (from outside to inside and vice versa), entrances, open communal spaces, diversity of usage and functions, legibility and perception, human scale, safety and security, participatory management, social dealings and psychological comfort. In the following, factors will be prioritized by factor analysis and the most important factors that will increase women's satisfaction of urban parks will be identified and then key components that must be incorporated into urban park design in order to promote women's presence. Table 1 posed questions to extract the main effective factors of park design. These factors can be categorized in four groups, hierarchically comprising design (greenspace, access, openness, visual and physical diversity, human scale and legibility), safety and security (lighting, sentry and security services), participatory management (human cooperation and notices) and comfort (acoustic and mental comfort, and health services).

## 2. Methods

This research is an attempt to identify and evaluate effective factors of increasing women's satisfaction of urban parks as communal spaces at the urban scale and propose key components for design in order to promote design for women. To do that, after expressing definitions and framework, and extracting main effective factors, we collected information about each factor by library and field methods and factor analysis model evaluated the data using SPSS software. Finally, a regression analysis model was used to prioritize factors and the design guidelines were proposed accordingly. Quantitative methods, such as surveys, can be useful in naming women's issues, whereas computer aided data analysis programs allow us to delve deeper and more fully explain these issues and, consequently, work towards social change (Metso & Le Feuvre , 2006). Sae Park was selected as a case study because of its special design, various usages of surroundings, and presence of different groups of people in terms of level of income, education, age and gender. After choosing the site, a questionnaire was designed and open ended, Likert scale questions and random sampling were used to reach the research goals. Participants were selected from main entrances and paths and in regards to the core research question, all of them were women. In order to have a comprehensive sample, the study was done on both weekends

and weekdays.160 questionnaires were answered. The first part of the questionnaire was about users' preferences of different activities. The second part determined their satisfaction of different design features. As a result, by summarizing the important values of park design in the format of main values, necessary key components for designing parks were determined. Saeed Park is one of the most popular parks in Tehran located on Valiasr Street, one of the main arteries of the city with an area of 12 hectares. This park has 6 main entrances and its vegetation is very diverse. It also has various spaces such as a pond, waterfall, playground, Japanese garden, and zoo. In addition, various usages around the park and its central location attract the diversity of users of different aspects such as age, level of education and income.

### 3 Analysis, measurement and modeling

In this stage, factor analysis modeling was used to analyze the data collected from surveys and obtain rational and systematic results to summarize indexes. Prior to that, KMO and Bartlett tests were done to inspect the possibility of using this model and its accuracy.

The purpose of factor analysis is to define subjects with the smaller number of factors rather than initial factors. The primary purpose is to determine factors that remained in analysis so some mathematical criterions are used to retain the intended factors.

In regards to the result of these tests (KMO=0.701), it is obvious that using factor analysis is possible in this study and its accuracy is relatively high. This figure (higher than 0.5) shows that data is suitable for factor analysis and the result of the Bartlett test is also significant. Table 2 indicates these results.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.701
Approx. Chi-Square	2143.343
Bartlett's Test of Sphericity df	820
Sig.	0.000

Table2: KMO and Bartlett tests' results

### 3.1 Choosing factors and making matrix

#### 3.1.1 Summarizing factors

In this phase, a criterion should be defined to summarize the indexes. In this study, according to Kaiser, factors with an amount of equal to or greater than 1 were selected. The summarizing method was PCA<sup>4</sup>. With this purpose, the software produced a table as "Total Variance Explained". Factors 1-13 were equal or larger than 1, so they were chosen amongst 41 indexes asked as questions. In addition, total variance explained by all indexes is a criterion to evaluate the accuracy. In this study, the amount of variance is 64.59 which is sufficient.

<sup>4</sup> Principle Components

### 3.1.2 Identifying and naming factors

After factor extraction, factor rotation was used to achieve simpler and more significant factors. In this study, rotation type was Varimax. So, the results are as following:

1-First factor: contained 8.96% of the co-variance and included “design of park furniture” (0.637), “participation” (0.703), and “influence of physical proportions on comfort” (0.693). People’s presence in any space has a direct relationship with sense of belonging and their memory of the experience. It can be said that their participation in the design phase of the park, could be a necessary requirement even before starting construction. We named this factor “participatory design”.

2-Second factor: contained 15.06% of the co-variance and included “cultural activities and sports” (0.644) and “physical proportionality with cultural activities” (0.679). Activity is one of the most important factors of forming any space. Architects could encourage people to do special activities in a space through physical design and these activities could promote the cultural nature of the park. This factor was named “designing communal spaces”.

3- Third factor: included 20.071% of the co-variance and included “satisfaction of greenspace” (0.763). The importance of greenspace is satisfaction of open spaces. This factor was named “greenspace design”.

4-Fourth factor: included 20.95% of the co-variance and included “influence of signs and symptoms on navigating and legibility of space” (0.777). Identifying and wayfinding are important in determining the sense of satisfaction and preventing anxiety. This factor was named “marking in the parks”.

5-Fifth factor: included 29.81% of the co-variance and included “parks’ procurement services” (0.619) and “police services” (0.784). This factor is related to urban policies and security and named “Urban security policies”.

6- Sixth factor: included 34.47% of the co-variance and included “proper pavement design (material and color)” (0.786). This factor could develop users’ “mental image”, so this factor was labeled “pavement and flooring”.

7-Seventh factor: included 39.03% of the co-variance and included “replacing stairs with ramps” (0.777) and this factor was called “vertical pedestrian access”.

8-Eighth factor: included 43.55% of the co-variance and included “open space design” (0.735) and “increase open space in parks” (0.834). The focus of this factor was on open space in the park. This item was named “open space design”.

9-Nineth factor: included 47.97% of the co-variance and included “water design influence on aesthetic aspects of parks” (0.645) and “Non-geometric Park design” (0.791). This factor was named “design with water”.

10-Tenth factor: included 52.27% of the co-variance and included “appropriate access to the park” (0.744). This factor was entitled “access”.

11-Eleventh factor: included 56.44% of the co-variance and included “influence of vegetation and planting design on mental image creation” (0.647). This factor was named “planting design”.



12-Twelfth factor: included 60.58% of the co-variance and included “the influence of fountain and sculpture design on legibility” (0.888). This factor was titled “memorial design”.

13-Thirteenth factor: included 64.59% of the co-variance and included “increased park enclosure” (0.60) thus named “introspection”.

Extracted factors could be summarized in table 3.

Row	Factor	Percentage of co-variance
1	participatory design	8.96
2	designing communal spaces	15.06
3	greenspace design	20.07
4	marking in the parks	20.95
5	Urban security policies	29.81
6	pavement and flooring	34.47
7	vertical access for pedestrian	39.03
8	open space design	43.55
9	design with water	47.97
10	Access	52.27
11	planting design	56.44
12	memorial design	60.58
13	Introspection	64.59

Table3: Naming Factors

Once the factors were named, they were rated.

### 3.2. Operational guidelines

In the previous steps, the data related to 41 indexes, according to the questionnaire, was analyzed by a factor analysis model and finally 13 factors were chosen. In this step of the study, multiple linear regressions were used. In this model, there are two groups of variables: factors obtained from factor analysis are independent variables and the study topic (design guidelines) is the dependent variable. The method used for entering the data was stepwise and as some factors might have autocorrelation or over correlations, a D-W test was used to overcome this issue.

The work process of analyzing data and prioritizing areas of intervention in SPSS is as follows:

#### 3.2.1 Selecting a Model

After using regression, the software (SPSS) produced several models to analyze. Selection criteria to choose the optimal model were the highest Coefficient of Determination ( $R^2$ ) and the least standard error. Thus, among 3 represented models, the third was selected (table4).

D-W Test	Estimated standard error	Adjusted R <sup>2</sup>	R <sup>2</sup>	R	Model
	0.865	0.104	0.110	0.331 <sup>a</sup>	1
	0.843	0.149	0.159	0.399 <sup>b</sup>	2
1.143	0.825	0.185	0.200	0.447 <sup>c</sup>	3

a: included factor 1

b: included factor 1, 2

c: included factor 1, 2, 10

In the table above, a, b, c are independent variables.

### 3.2.2 Determining common factors

After choosing the optimal model, based on the table of common factors, represented by SPSS, in which standard error and coefficient were determined for all factors, the factor that has a higher Coefficient of Determination (R<sup>2</sup>) and less standard error was more important. The Table indicates the factors' ranking based on their importance coefficient.

Importance coefficient	Model	Non-standard coefficients			T	Sig
		B	Standard error	Beta		
-	Constant	3.988	0.64	0.331	61.923	0.00
3	participatory design	0.302	0.65	0.331	4.679	0.00
2	designing communal spaces	0.204	0.65	0.223	3.150	0.002
1	Access	0.184	0.65	0.201	2.846	0.005

The Table shows that at the present time people want to participate in park design more than any other factor. The second important factor is design of communal spaces and the proportionality of their physical characteristics and social-cultural activities.

This means that people could spend their time in parks individually as well as participating in social activities.

The last factor focuses on access to parks. Thus, these three factors are the most important to promote parks' quality to increase women's presence.

### 3.3 Calculating the average satisfaction

In this phase of study, the average satisfaction of the factors and the average dissatisfaction were calculated.

Average dissatisfaction = 6-average satisfaction = factor loading \* 3.2

Factors	Average satisfaction	Average dissatisfaction
participatory design	2.018	3.98
designing communal spaces	2	3.99
Access	2.23	3.72

After determining the importance coefficient and calculating the average dissatisfaction and satisfaction of each factor, intervention priorities were concluded based on their scores.

Factors	Importance coefficient	Average dissatisfaction	Average satisfaction	Score	Priority
Participatory design	3	2.01	3.98	6.05	1
Designing communal spaces	2	2	3.99	4	2
Physical Accessibility	1	2.21	3.76	2.23	3

This table indicates that the most important intervention factor is participatory design with the score of 6.05. Participatory design reflects self-reliance in decision making and self-confidence in people. Participation is a relatively new idea because conventionally, in national planning decision making, stakeholders were marginalized and deprived of community participation in these processes (Sanoff H. , 2000).

#### 4. Results

This study shows that women's presence in urban spaces is lower than men's and involving them in the early phases of the design process can increase their activity in public parks, the second factor could provide a safe environment for women's activities in public spaces, especially within parks, and the third factor, physical access, could facilitate the ease of access to and within parks.

The key components to designing public parks which support the results of the research are as follows:

- 1- Organize collaboration of authorities and stakeholders to learn more about existing requirements and problems.
- 2- Gather stakeholders including men and women to exchange their ideas, opinions, and viewpoints to talk about their shared purposes.
- 3- Organize professional workshops to discuss different subjects and find favored solutions and ideas.

- 4- Increase women's awareness in shared design phase gatherings and share design presentations with them.
- 5- Provide cooperation opportunities for elderly women.
- 6- Consider users' culture and identity to develop communal spaces.
- 7- Establish group and communal activities such as exhibitions and different ceremonies and provide necessary facilities.
- 8- Diversify uses and activities to gather diverse pool of users.
- 9- Provide private spaces for calm and quiet activities, away from more active group spaces.
- 10- Link park access with existing public transportation facilities.
- 11- Link urban trails with parks' walking paths to integrate the park and city.

## **5. Discussion**

This research puts forth design guidelines that should be considered when designing public parks, especially in areas where cultural differences between genders are prominent. As seen from the factor analysis, the most important factor that should be addressed when designing a new public park is to engage the community as early on in the process as possible. By doing this, designers will learn what community members really need and want, as well as what activities they would be engaging in this new park. It is critical for designers to understand who the users of the proposed park will be so that they can design in a successful manner, in order to address all facets of the community. This is even more critical when designing in areas where cultural gender roles are clearly defined in society, such as in Iran. As the benefits of community involvement in planning and design are widely documented; they include enhancing the capacity of citizens to cultivate a stronger sense of commitment, increasing user satisfaction, creating realistic expectations of outcomes, and building trust (e.g. McClure, 1997, Sanoff, 1991, Smith, 1993 and Towers, 1995). Furthermore, some researchers state that community architecture has the promise of 'good design' because it meets the requirements of users, fulfills their lifestyles, and carries the essence of their desires and expectations (Wates, 1985). Additionally, the challenges of implementing the international commitments on gender equality and empowerment of women in the Beijing Platform for Action, the Millennium Declaration and more recently, and the Outcome of the 2005 World Summit highlight the importance of ensuring an enabling environment. An enabling environment may be interpreted as a set of interrelated and interdependent systemic conditions such as policies, laws, institutional mechanisms, resources, etc., which facilitate the promotion of gender equality<sup>5</sup>.

The second most important factor to address when designing a public park are communal spaces, providing users a place to gather and interact socially. These communal gathering spaces need to accommodate both genders of society in a way that brings everyone together in unity. Communal gathering spaces will create stasis within the park and encourage users to return time after time again. Women are trying to make an opportunity for themselves to escape isolation, make friends and extend their roles outside of the family environment as a lower stratum. As talking and

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<sup>5</sup> <http://www.un.org/womenwatch/daw/egm/enabling-environment2005/index.html>

communicating are fundamental needs of human being<sup>6</sup>. Discussions of public behavior tend to ignore women as separate actors (Wekerle, 1980) and there are many constraints for women to use public spaces (Day, 2000). Communal spaces can help women's sense of safety and security in public spaces as Jacobs (1961) found that the design of pavements and neighborhoods can reduce fear and crime by attracting people and circulating them through an area and by breaking down isolated private spaces to create communal areas. In such communal areas people could establish interpersonal contacts, so promoting natural surveillance and social cohesion ( Jacobs J. , 1961).

Physical access is another extremely important facet to address in park design. Users of all ages and abilities should be able to easily access all parts of the park. If there are topographical elevations to be dealt with, ramps should be used in conjunction with steps, giving handicapped users the same fulfilling experience of access throughout the park. There is evidence that good access to urban green spaces is associated with higher use, higher physical activity levels, and a lower likelihood of being overweight or obese. More frequent green space users were more physically active and less likely to be overweight or obese (Coombes, Jones, & Hillsdon, 2010). Additionally, a growing body of evidence indicates that a range of perceived and objectively measured environmental attributes—including access to public open space—is associated with walking (Owen, Humple, Leslie, Bauman, & Sallis, 2004).

## **6. Conclusion**

Urban spaces can create places for which people can increase social interactions and physical activity. Parks as public spaces promote social morale, livability and comfort. In Iran, regarding issues of gender segregation, it is necessary to address women's presence in urban spaces, such as parks, to promote their morale. In other words, their involvement in the design phase of parks is very important. In this paper, three factors were identified as the main effective factors of increasing women's presence in urban parks. The first and most important factor is participatory design. Participation refers to people's cooperation in order to meet the goals actually determined by them and could help people to become familiar with their rights in decision making and conserving their neighborhoods. Results showed that the second factor that affects women's presence in urban parks is designing communal spaces specifically for women to improve their social interactions and sense of safety and security, and the third factor is accessibility because easy access contributes to higher frequency of use.

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<sup>6</sup> <http://lincs.ed.gov/lincs/discussions/diversity/09interaction.html>



## References

- Jacobs, J. (1961). *The Death and Life of Great American Cities*. New York: Random House.
- Amado, M., Santoz, C., Moura, E., & Silva, V. (2009). Public Participation in Sustainable Urban Planning. *World Academy of Science Engineering and Technology*, 597-603.
- Amini, A., & Samiari, A. (2006). Designing and appropriating urban furniture. *First Conference of Organizing urban environment*, (pp. 6-13). Tehran.
- Banzhaf, E., Barrera de la, F., Kindler, A., Reyes-Paecke, S., Schlink, U., Welz, J., & Sigrun, J. (2014). A conceptual framework for integrated analysis of environmental quality and quality of life. *Ecological Indicators*, 664–668.
- Bonnes, M. (1993). *Perception and Evaluation of Urban Environmental Quality*. Rome: UNESCO.
- Bonnes, M., Bonaiuto, M., & Ercolani, A. (1991). Crowding and Residential Satisfaction in the Urban Environment. *Environment and Behavior*, 23(5), 531-552.
- Brownson, R., Eyster, A., King, A., Brown, D., Shyu, Y., & Sallis, J. (2000). Patterns and correlates of physical activity among US women 40 years and older. *American Journal of Public Health*.
- Coombes, E., Jones, A., & Hillsdon, M. (2010). The relationship of physical activity and overweight to objectively measured. *Social Science & Medicine*, 70, 816-822.
- Day, K. (2000). The Ethic of Care and Women's Experiences of Public Space. *Environmental Psychology*, 20, 103-124.
- Fleury-Bahi, G., Félonneau, M.-L., & Marchand, D. (2008). Processes of place identification and residential satisfaction. *Environment and Behavior*, 40, 669-682.
- Floyd, M., Bocarro, J., Smith, W. R., & Baran, P. (2011). Park-Based Physical Activity Among Children. *AMERICAN JOURNAL OF PREVENTIVE MEDICINE*, 258-265.
- Ghorbani, R., & Teymouri, R. (2010). Analysis of the parks' role in improving the quality of urban life by using the seeking-escaping, Case study: Tabriz city parks. *Research in Human Geography*, 72, 47- 62.
- Giles-Corti, B., Broomhall, M., Knuiaman, M., Collins, C., Douglas, K., Ng, K., . . . Donovan, R. (2005). Increasing walking: How important is distance to, attractiveness, and size of public open space? *American Journal of Preventive Medicine*, 169–176.
- Handy, S., Boarnet, M., Ewing, R., & Killingsworth, R. (2002). How the built environment affects physical activity: Views from urban planning. *Am. J. Prev. Med*, 23, 64-73.
- Hansmann, R., Hug, S.-M., & Seeland, K. (2007). Restoration and stress relief through physical activities in forests and parks. *Urban Forestry & Urban Greening*, 6(4), 213–225.
- Hartig et al. (2003). Tracking restoration in natural and urban field settings. *Restorative Environments*, 23(2), 109–123.
- Haughton, G., & Hunter, C. (1994). *Sustainable Cities*. London: Jessica Kingsley.
- Higgs, G., Fry, R., & Langford, M. (2012). Investigating the implications of using alternative GIS-based techniques to measure accessibility to green space. *Environment and Planning – Part B*, 326–343.
- Hourihan, K. (1984). Context- Dependent Models of residential satisfaction. *Environment and Behavior*, 16(3).

- Hubbard, P. (2004). Revenge and injustice in the neoliberal city: uncovering masculinist agendas. *Antipode*, 36, 665–686.
- Jacobs, J. (1967). *The Death and Life of Great American Cities*. New York: Random House.
- Knut, H., & Hans, V. (1993). Environmental Quality Indicators: Background, Principles and Examples from Norway. *Environmental Resource Economics*, 3, 415-435.
- Krenichyn, K. (2006). The only place to go and be in the city?: Women talk about exercise, being outdoors, and the meanings of a large urban park. *Health & Place*, 12(4), 631-643.
- LPAC. (1993). *London's Urban Environmental Quality*. Romford: Tibbalds Colbourne Karski.
- Lynch, K. (1981). *A Theory of Good City Form*". Cambridge: Mass: MIT Press.
- Mahmoodi, A. S., Ghazizadeh, N., & Monam, A. (2011). The Impact of the Architectural Design on the Thermal Comfort of the Outdoor Spaces in Residential Complexes\* Case Study: Ekbatan Complex, Phase III. 2(42), 59-70.
- Marans, R., & Rodgers, W. (1975). *Toward an understanding of community satisfaction* (Metropolitan America in contemporary perspective ed.). (I. A. (Eds.), Ed.) New York: Halsted.
- Mass et al. (2006). Green space, urbanity and health: how strong is the relation? *Epidemiol Community Health*, 60, 587-592.
- McClure, W. (1997). *The Rural Town: Designing for Growth and Sustainability*. Moscow: Center for Business Development and Research: University of Idaho.
- Mitchell, R., & Popham, F. (2007). Greenspace, urbanity and health: relationships in England. *Epidemiol. Community Health*, 61, 681-683.
- Nilsson, K., Sangster, M., Gallis, C., Hartig, T., Vries, S., Seeland, K., & Schipperijn, J. (2011). *Forests, Trees and Human Health*. Dordrecht: Springer Science, Business Media B.V.
- Owen, N., Humple, N., Leslie, E., Bauman, A., & Sallis, J. (2004). Understanding of Environmental Influences on Walking. *Am J Prev Med*, 27, 67-76.
- Pacione, M. (1984). Evaluating the quality of the residential environment in a high rise public housing development. *Appl. Geogr*, 4(1), 59-70.
- Parry-Jones, W. (1990). Natural landscape, psychological wellbeing and mental health. *Landscape. Res.*, 15(2), 7–11.
- Peterson, R., Wekerle, G., & Morley, D. (1978). Women and environments: an overview of an emerging field. *Women and Environment*, 10, 511–534.
- Pretty , J., Peacock, J., Sellens , M., & Griffin , M. (2005). The mental and physical health outcomes of green exercise. *International Journal of Environmental Health Research*, 15(5).
- Rafiyian, M., & Khodaie, Z. (2009). Assessing the indicators and criteria affecting the satisfaction of citizens from urban public spaces. *Guidline Quarterly*, 227-248.
- Rahnama, M., & Razavi, M. (2013). An Study of Sense of place Effect on Social Capital and Participation in Mashhad's Neighborhoods. *Honar-Ha-Ye-Ziba*, 29-36.
- Ransdell, L., & Wells, C. (1998). Physical activity in urban white, African-American, and Mexican-American women. *Medicine and Science in Sports and Exercise*, 30, 1608–1615.
- Roberts, M. (1991). *Living in a man-made world*. London: Routledge.

- Saeedinia, A. (1994). *Design of urban furniture and spaces*. Tehran: The municipalities and village administrations of the country.
- Sanoff, H. (1991). *Visual Research Methods in Design*. New York: Van Nostrand Reinhold.
- Sanoff, H. (2000). *Community Participation Methods in Design and Planning*. New York: NY: John Wiley & Sons, Inc.
- Sanoff, H. (2000). *Community Participation Methods in Design and Planning*. New York: John Wiley & Sons.
- Scott, J., & Marshall, G. (1998). *A Dictionary of Sociology*. Oxford university press.
- Sennett, R. (1974). *The Fall of Public Man: On the Social Psychology of Capitalism*. New York: Vintage Books.
- Smith, H. (1993). *The Citizen's Guide to Planning*. Chicago: Planner's Press.
- Takano et al. (2002). Urban residential environments and senior citizens' longevity in megacity areas: the importance of walkable green spaces. *Epidemiol Community Health*, 56, 913-918.
- The Prince of Wales. (1989). *A Vision of Britain*. London: Doubleday.
- Towers, G. (1995). *Building Democracy: Community Architecture in the Inner Cities*. London: University College London Press.
- Trancik, R. (1986). *Finding Lost Space: Theory of Urban Design*. New York: Van Nostrand Reinhold.
- Ulrich, R. (1984). View through a window may influence recovery from surgery. *Science*, 224, 420-421.
- Van Den Berg, A., Hartig, T., & Staats, H. (2007). Preference for nature in urbanized societies: stress, restoration, and the pursuit of sustainability. *J. Society*, 79-96.
- Wates, N. (1985). Co-op Consolidation. *The Architectural Review*, 177 (1058), 57-64.
- Wekerle, G. (1980). Women in the Urban Environment. *Chicago Journals*, 5(3), 188-214.
- Wilcox, S., Castro, C., King, A., Housemann, R., & Brownson, R. (2000). Determinants of leisure time physical activity in rural compared with urban older and ethnically diverse women in the United States. *Journal of Epidemiology and Community Health*, 54, 667-672.
- Wilson, E. (1992). The Invisible Flâneur. *New Left Review*, 1/191, 90-110.
- Wolch, J., Jerret, M., Reynolds, K., McConell, R., Chang, R., Dahmann, N., . . . Berhane, K. (2011). Childhood obesity and proximity to urban parks and recreational resources: A longitudinal cohort study. *Health Geographies of Voluntarism*, 17(1), 207-214.
- Zhang, X., Lu, H., & James, B. (2011). Modeling spatial accessibility to parks: a national study. *International Journal of Health Geographics*.