# The Impact of Public Spaces Physical Quality in Residential Complexes on Improving User's Social Interactions; Case Study: Pavan Residential Complex of Sanandaj, Iran

**Bahareh Behrad[1]\* and Bakhtiar Bahrami[2]**

[1] Faculty of Art and Architecture, Kurdistan Science and Research Branch, Islamic Azad University, Sanandaj, Iran
[2] Faculty of Art and Architecture, University of Kurdistan, Sanandaj, Iran
\*Corresponding author's E-mail: bahar,behrad63@yahoo.com

**ABSTRACT:** Public spaces in residential complexes provide a major framework for social interactions. The active presence of people in social interactions raises the sense of community and improves the quality of life by strengthening civic sense. Urban public spaces form the framework for social relationships. This paper emphasizes on social aspects in the residential complex of Pavan in Sanandaj, aims to assess social interactions in its public spaces to identify the strengths and weaknesses, and offer some proposals to improve them. The research methodology is descriptive - analytical and data gathering was done by using a standard questionnaire validated by PPS institution and documentary studies. In this method, first, literature of review helped find the socialization in public spaces and residential complexes. In order to achieve the influential architectural factors in the socialization of public spaces, a survey method was carried out. After conducting field studies, architectural priorities influence on socialization and social interaction were analysed and classified. Based on the results, the factors affecting the promotion of social interaction in the residential complex of Pavan in Sanandaj were identified.

**Keywords:** Public Spaces, Spatial-Physical Quality, Social Relationships, the Residential Complex of Pavan in Sanandaj

## INTRODUCTION

Development in urban and suburban areas arising from foreign patterns regardless of local contexts has caused some special problems. Accordingly, abundant inexpensive apartments and settlement patterns following foreign designs and non-compliant with local climatic and cultural patterns of behaviour and architecture in Iran were formed (Shonyr, 2010).

In recent decades, urbanization and living in residential complexes have become commonplace in the cities of Iran, especially in large cities and in the urban development, land prices and specific urban issues have caused living in apartments and residential complexes. Among the problems caused by living in apartments, one can mention the weakening of social interactions in the city. Social and cultural relations occur in space, so space is a set of social and cultural relationships between certain groups and certain. These relationships are time-bound, so the social life is limited by time and space. The type of relationships that are established in space and its intensity give meaning to space.

The major role of public spaces in enhancing social and cultural aspects, necessitate their importance in urban design and planning. Spaces with high performance should be designed to meet the needs of the residents of the social and cultural complexes so that their comfort and convenience are guaranteed.

This paper intends to study the current situation in the residential complex of Pavan in Sanandaj and focus on its social aspects, so as to enhance social relationships, according to two general ideas:

First, raising the possibility of social interaction between residents and second, to increase residents' opportunities for community relations at higher levels. The development and implementation of both of these ideas necessitates certain provisions in the design of residential buildings. Including an increase in public spaces and creating a space plan to establish social spaces to increase more social contact. To assess the theoretical model, the appropriate questionnaires were distributed among the residents in the residential complex of Pavan.

### Review of Literature

The simplest element of human life is social interaction. Social action is the range of desirable behaviors done by a human towards another to achieve a goal. People have an innate need to establish social relationships and therefore, they can provide opportunities so they can experience the social relationships. Social relationships occur with a variety of purposes. They are emotional which include relationships with friend, relatives and neighbours or rational in seeking to maximize the chances of individuals to reach the goal or they are based on social values which set attainable goals

without paying attention to its costs or the traditions and customs (Table 1).

**Table1.** Design theories for social interactions

| Researcher | Theory |
|---|---|
| Forgas (2000) | Architecture spaces can be an important component of human interaction with others. As organized, dynamic and talented creature, human is able to modify his behaviour in the face of the changes in the architectural space. |
| Altman (2003) | The amount of social interaction of people in different social position and even at different times of the day varies and changes occur to obtain the desired level of privacy. |
| Kasidi (1997) | If individuals are homogeneous in space, they are more likely to interact and heterogeneity decreases the possibility of communication. |
| Gans (1968) | A potential architectural space provides a wide range of opportunities to satisfy personal needs. |
| Abu-Ghazzeh (1999) | Multiple-family housing design method is effective on the way people interact. The more people are at a distance closer to each other, they are more likely to have social interaction. |
| Marcus (2000) | He investigated the aspects of people's vicinity as a means to increase social interactions in Denmark. |
| PPS (2010) | Social spaces are places that allow individuals to meet friends and acquaintances and attend group activities. |
| Habermas (2002) | Public sphere is a social sphere or realm in which issues of interest are discussed. |
| Arnedt (1958) | Public sphere is the main factor of being extrovert and in general and political life. |
| Zucker (1959) | A square is not merely a gathering place but it's a place to make people communicate. |
| Jacobs (1961) | Sidewalks are the places to enhance the security and social order. |
| Whyte (1980) | Emphasizes on the social role of urban spaces. |
| Gehl (1987) | Suggested three activity groups in urban areas: Necessary, Selective, Social. |
| Oldenberg(1989) | Emphasis on public areas of the city, as the third place. |

### Socialization in public spaces

Based on the definition suggested by Humphrey Osmond, using words such as socialization spaces or isolated spaces indicating the spatial qualities which make people get together or keep distance (Osmond, 1975).Carmona believes that urban public spaces are places and social environments working as a field for the display and behaviour, a common and neutral ground for social interaction and communication and the incorporation of a social consciousness, personal development and exchange of information (Carmona et al., 2003).

Based on John Lang's model, in the urban public spaces, the patterns of social interaction are important. If people are interested in these environments, its most powerful social interaction will occur (Lang, 2002). One of the main dimensions and characteristics of public spaces is creating opportunities for social interaction. When people interact with other people in society, they feel a stronger relationship with the place and its community. These factors determine the presence of different social groups, the formation of social networks and staying in the domicile are measured and evaluated.

The socialization process starts with the establishment of social interaction and communication among users of the shared public space and architecture. The ability to participate effectively in interactions with others, whether in private or public life is of critical

importance (Forgas, 2000). Landscaping can be seen along the spaces and areas of private life. Therefore the design of possible measures should be taken to facilitate the access. Most residents usually tend to those public spaces closer to their environment (Huang, 2010). In fact, the value of public open spaces and residential complex is not due to their vastness but the intimacy of the space and its proximity to the private environment (Huang, 2006) (Figure 1).
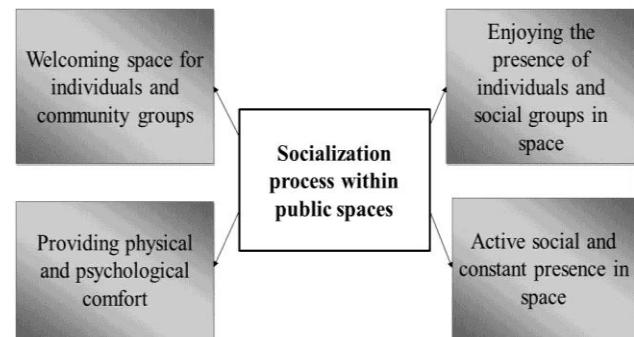


**Figure 1.** The process of socialization in public space

The social factors that affect social interactions in residential complexes are classified into two categories:

1- Social variables: socio-demographic characteristics, how they interact with each other and their neighbours, their use of common spaces in the open spaces of a neighbourhood. Factors such as general characteristics of respondents (age, marital status, and education), the owner / tenant and length of stay are associated with social interactions (Haggerty, 1982).

2- Physical and spatial elements: the physical elements that may have impact on the social communication patterns include pattern design, web site design, scale and proportion, and the layout pattern (Farida, 2013).

### Case study areas

According to the Department of Architecture and Urban Planning, City of Sanandaj and with reference to the drawings, the construction the residential complex of Pavan in Sanandaj began in 1999 and continued performing until 2002. It was designed by a company called Pavan. In the design of the complex, seven four-story apartment buildings are designed which include a number of dwelling units. And the total population is 850 people. The primary purpose of constructing the residential complex of Pavan was providing affordable housing for low-income groups.

## MATHERIAL AND METHODS

The research methodology is based on an interactive approach. The ideas of residents in the residential complex of Pavan in Sanandaj were collected using the questionnaires within a descriptive-analytic cross- sectional study. The study was quantitative in nature and in conceptual terms, the methodology was documentary and as for empirical issues, a survey was conducted. During the research process, the data were obtained based on the results of the questionnaire of PPS Institute and impressions achieved by using direct observation of public spaces.

The independent variable in this study is the socialization in public spaces in the residential spaces and the dependent variables include the social relationships and social interaction of the residents. All surveys were done in three non-consecutive days and at different hours between 10 am to 5 pm. In this section, the data from the survey of public space complexes are analysed. The analyses were then interpreted. The interpretation was in the direction of enhancing social interactions in public spaces so as to increase spatial quality. Finally, the results are introduced:

**Social characteristics of residents**

The social characteristics of the users which were interviewed and surveyed included general characteristics (sex, age) and length of residence.

• The gender of the respondents: Gender is one of the general characteristics of users in any architectural space. Whether the gender socialization of architectural space influences sex and how different interactive behaviours can be symptoms of architectural spaces will be required (Table 2 and Figure 2).

**Table 2.** The gender and number of respondents

| Gender | | | | Respondents | | Public spaces in the residential complex |
|---|---|---|---|---|---|---|
| % | No | % | No | % | No | |
| 56 | 65 | 44 | 51 | 100 | 116 | |
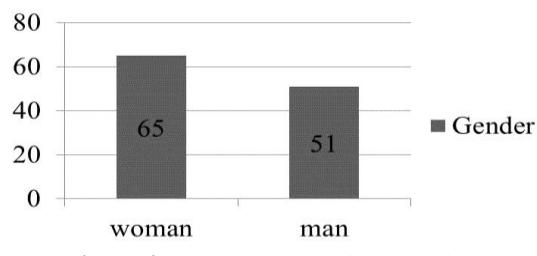


**Figure 2.** Frequency based on Gender

**Table 3.** Age groups of respondents

| Percentage | Number | Age group | Variable |
|---|---|---|---|
| 37.9 | 44 | Under 30 years of age | |
| 30.2 | 35 | 31-40 | |
| 20.7 | 24 | 41-50 | Age |
| 9.5 | 11 | Over 50 | |
| 1.7 | 2 | unidentified | |
| 100.0 | 116 | Total | |
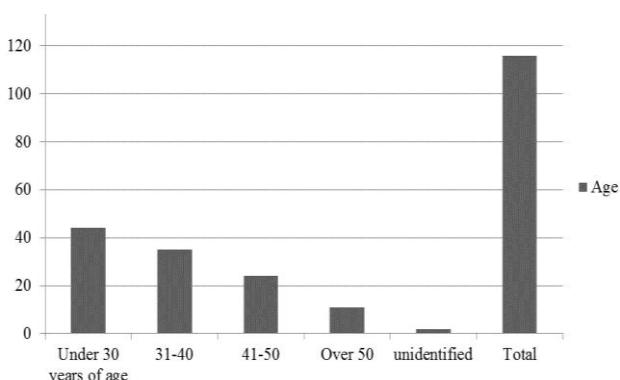


**Figure 3.** Frequency in terms of age

• Age of respondents: The number of respondents was 116. The results showed that more than two-thirds of the subjects were aged forty years or less, and about one-third of people over the age of forty years (Table 3; Figure 3).

• Residence time: Another factor to have a more accurate measure is the period of residence. Accordingly, the three categories were defined: five years and less, 6 years to 10 years and above 10 years. People in the residential complex of Pavan were classified in one of these categories. (Table 4; Figure 4)

**Table 4.** Distribution of the sample according the period of residence in the residential complex of Pavan

| Percentage | Number | period | Variable |
|---|---|---|---|
| 43.1 | 50 | 5 years & less | |
| 51.7 | 60 | 6-10 years | period of residence |
| 5.2 | 6 | Over 10 years | |
| 100.0 | 116 | Total | |
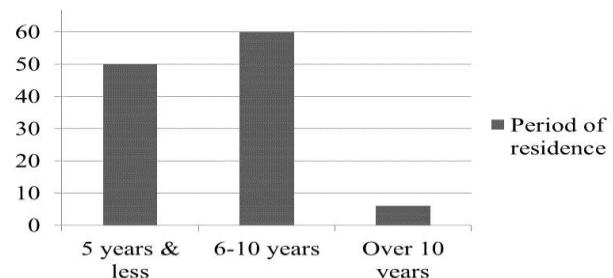


**Figure 4.** Frequency distribution of people living in the complex for Pavan

**The quality of social relationships in public spaces in the residential complex of Pavan in Sanandaj**

The variable for assessing the quality of social relationships in public spaces in the residential complex of Pavan in Sanandaj was one-sample t. The reason for using this test was coming up with an understanding of the numerical difference between being random variable quality of social relationships (neighbourhood) and its theoretical mean. Finally, one-sample t-test results on the evaluation of the overall role of public spaces in the complex relations between residents showed that the observed increase was equal to 3.12 and the expected mean (theoretical) amounted to 3. T value was equal to 1.54 and a significance level of 0.126 was obtained (P> 0.05). Given that the t value was less than 0.05 and was not significant at an error level less than 0.05, it becomes clear that there was no significant difference between observed and expected mean. Overall, it is concluded that the role of public spaces in strengthening relations between neighbouring complexes are moderate (Table 5).

**Table 5.** One-sample t-test results on the role of public spaces in strengthening the relationship between neighbours

| Level of significance | t | SD | Mean | Number | Variable |
|---|---|---|---|---|---|
| 0.022 | -2.31 | 1.40 | 2.69 | 116 | Stairway |
| 0.000 | 6.10 | 0.98 | 3.56 | 116 | Public space |
| 0.126 | 1.54 | 0.90 | 3.12 | 116 | Total of spaces |
| 3 :Expected Mean | | | | | |

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**Effective interaction of existing spaces in the residential complex of Pavan in Sanandaj based on users' comments**

In order to evaluate the effectiveness of social interactions in public spaces, the residential complex of Pavan was first observed to spot the problems and disadvantages. Next, in order to promote an atmosphere of social interaction, physical public spaces were studied. Based on studies in architectural design of public spaces in the residential complex of Pavan, more effort was carried out to meet performance requirements. Social issues and interactions were not considered. According to Table 6, based on the views of current users, public spaces for social interaction were neglected in the current situation and were not appropriate in this context to improve social interactions with the environment and other people (Table 6).

**Table 6.** The existence of social interactions in complex environments based on current views of users

| High | | Average | | Low | | Very low | | The existence of social interactions in the current public spaces based on the survey results |
| % | No | % | No | % | No | % | No | |
|---|---|---|---|---|---|---|---|---|
| 8.6 | 10 | 13.7 | 16 | 37.9 | 44 | 39.6 | 46 | |

Problems associated with public spaces in the residential complex of Pavan in Sanandaj include the following:

- Lack of public spaces designed to coincide with the presentation of architectural projects
- Lack of suitable space for leisure time of the residents
- Lack of attention to environmental pollution in the design of outdoor sets
- Poor performance or inappropriate landscaping projects in housing complexes
- Lack of effectiveness of such projects, the needs of the residents for these complexes
- Lack of attention to ventilation and dust accumulation and stagnant air in residential buildings
- Lack of attention to the role of green space as insulation to prevent energy loss

Considering all the problems and shortcomings, the enhancement of physical quality of public spaces in order to increase social interactions can help in the current situation.

## RESULTS

**Results and effects of social interaction in public spaces**

Another reason for socialization to improve quality of social interactions in public spaces is a positive outcome. The results show that 57.7 percent of users associate the public spaces with a high degree of positive socialization. 41.8 of the respondents think the effects are insignificant. Promoting the spirit of participation, personal growth, a sense of place and a sense of security are known as the main positive effects of such spaces in residential areas (Table 7).

**Table 7.** Social interaction effects in complex contemporary environments based on the views of

| High | | Low | | Very low | | Complex effects of social interaction in public spaces |
| % | No | % | No | % | No | |
|---|---|---|---|---|---|---|
| 100 | 116 | 11 | 64 | 8.9 | 52 | Promoting personal growth |
| 100 | 116 | 10.3 | 60 | 9.6 | 56 | Promoting a spirit of partnership |
| 100 | 116 | 8.7 | 51 | 11.2 | 65 | Socialization |
| 100 | 116 | 13.1 | 76 | 6.8 | 40 | Sense of place |
| 100 | 116 | 14.6 | 85 | 5.3 | 31 | Sense of security |
| 100 | 580 | 57.7 | 336 | 41.8 | 244 | Total |

**Effects of physical properties of the studied areas on the socialization from the viewpoints of users**

Holland, Clark, Katz, Peace suggest that factors such as furniture, designs and shapes, light, amount of space, materials, sound are important in the promotion of social interactions in urban public space.

**Table 8.** Physical factors affecting social interaction in public space based on the comments of users

| Total | | Very high | | high | | low | | Very low | | Physical elements of effective social interaction in public spaces |
| % | No | % | No | % | No | % | No | % | No | |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | 116 | 4 | 32 | 6.1 | 48 | 3.5 | 28 | 1 | 8 | driveway |
| 100 | 112 | 4.8 | 38 | 6.6 | 52 | 2 | 16 | 0.7 | 6 | Floor material |
| 100 | 116 | 5.7 | 45 | 7.1 | 56 | 0.7 | 6 | 1.1 | 9 | Accessibility to facilities |
| 100 | 116 | 6.7 | 53 | 6.4 | 51 | 1 | 8 | 0.5 | 4 | Presence of residence |
| 100 | 116 | 8.2 | 65 | 5.3 | 42 | 0.7 | 6 | 0.3 | 3 | Recreational facilities |
| 100 | 100 | 3.8 | 30 | 7.3 | 58 | 0.8 | 7 | 0.6 | 5 | Urban furniture |
| 100 | 110 | 2.5 | 20 | 5.5 | 44 | 4.4 | 35 | 1.3 | 11 | Amount of light (natural or artificial) |
| 100 | 786 | 35.7 | 283 | 44.3 | 100 | 13.1 | 106 | 5.5 | 46 | Total |

According to Table 8, in summarizing the survey results of the study of architectural space, the users, the effects of physical factors - environment interactions and relationships among them was very low at 5.5 percent, for 31.1 percent, it was low and 44.3 percent thought it was high and 35.7 percent of them believed the impact of structural elements was high in shaping and enhancing social interactions.

## CONCLUSION AND DISCUSSION

Some public spaces influence general architectural and anatomical factors, the amount and type of social interaction between individuals. Applying these factors can increase the amount of interactions on data indicating its socialization effect. In this regard, there are requirements such as adequate appropriate roadway route, the presence of residents and fellows, recreational facilities and services and other functions in the public spaces as the main factors influencing the amount of social interactions.

It is recommended that in public spaces should be paid attention in designing residential complexes to develop and enhance these spaces and improve the quality of users' interactions and gain satisfaction and mental peace. The results of this study indicate that public spaces having attributes such as socialization are an important supplement to the socialization of individuals.

Furthermore, the socialization of public spaces promotes a spirit of solidarity, personal growth, development and improvement of appropriate behaviour patterns.

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