



A Study of Sociability Factors' Influence on Educational Spaces: The Case of the School of Art and Architecture of Bu-Ali Sina University*

Saeid Alitajer^{1**}, Hasan Sajadzadeh² and Pooria Saadati vaghar³

¹ Assistant Professor of Architecture, Faculty of Art & Architecture, Bu-Ali Sina University, Hamadan, Iran.

² Assistant Professor of Architecture, Faculty of Art & Architecture, Bu-Ali Sina University, Hamadan, Iran.

³ Master Student of Architecture, Faculty of Art & Architecture, Bu-Ali Sina University, Hamadan, Iran.

Received 28 October 2014;

Revised 20 May 2015;

Accepted 23 May 2015

ABSTRACT: Sociability of educational spaces is crucial to the quality of education because a major part of learning takes place through attending public spaces, acting in spaces, social interaction with peers, and collective life in public spaces. Sociability provides for the users' social needs. The present study seeks to explore the development of sociability in educational spaces through increasing opportunities for social interaction in educational buildings, particularly in their shared spaces. The hypothesis is that human, activity and environmental factors stand in a significant relationship with sociability of the students at the School of Art and Architecture, Bu-Ali Sina University of Hamedan, Iran. Underlying this study is a descriptive-analytical methodology that was applied, in form of a case study, in the School of Art and Architecture of Bu-Ali Sina University. The data were collected by using library research, interview, field observation, and case study. In so doing, a survey was performed by administering a questionnaire to the subjects, i.e. sample students from among the entire population of the students at the school. The correlation of the data was then analyzed by SPSS software and influence of each variable, on the development of sociability in educational spaces, was determined. According to the findings, from among the three variables, the psychosocial characteristics of the users, which tend to be the most influential and physical features of the public environment, are the least influential factors. Also the results of correlation tests show that psychosocial factors and physical factors are directly correlated with activity-related factors.

Keywords: Sociability, Educational Spaces, Users, Environment, Function.

INTRODUCTION

Mankind is a social creature, and therefore, must meet some requirements in order to live a social life. One of such requirements is the need for social interaction which leads to remaining in a space to establish social relationships. The notion of social interaction brings about various issues such as sociability, collective life, gathering spaces, environmental and human factors, as well as public human-built environments. The terms 'sociable', or 'lover of society', and 'sociofugal', or 'lover of scatteredness', in architecture refer, respectively, to spaces that cause people to gather or to separate from each other. Nowadays, social interaction is tending to be neglected in buildings and

architectural structures, and this indicates the importance of addressing public environments as a proper milieu for these interactions. The notion of sociability is related to establishing desirable interpersonal and collective relationships as well as to creating opportunities for social interaction in public environments. It should be noted that social interactions are stronger in public environments, where the relationships among the users are more non-functional and philanthropic, e.g. in cultural, educational and clinical environments (Salehinia & Memariyan, 2009). Public spaces are particularly central to educational places where they help gather the learned groups of society who obviously need increased interaction with their peers (Forgas, 2000, p. 12).

* This article is extracted from the M.A. thesis entitled "Sociopetality in Informal Settlements by Concentrating on Physical Factors (The Case of Study: Hasar and Dizaj Neighborhood in hamadan)" that is written by the third author under the supervision of the first author and the advisory of the second author.

** Corresponding author email: tajer1966@gmail.com



A major question here is: how can we design spaces in a way that social interaction increases? In order to find an answer to this question, the present paper seeks to explain the concept of sociability and describe the key factors in the development of social interaction in educational environments, which leads to the formation of a general framework for designing appropriate social spaces in contribute with sociability. Sociability of a built space is desirable and useful in many ways. This is due to the human need for interaction with peers and it influences on the personality development of users. As a result, built spaces should be the context for social interaction in addition to being functionally oriented. Sociability can be achieved by means of establishing interaction among the users of a public space. Social interactions and sociability in the public spaces of universities are usually resulted from scientific and cultural purposes rather than functional orientations. Therefore, these public spaces are widely known as 'informal educational complements' and, as their users are homogeneous groups, it is not difficult to control their sociocultural intervening variables for research purposes. Over recent years, with the current emphasis on the quantitative growth of universities and on increasing the number of students, intimate public places have been downplayed and changed into educational spaces. Students' interactions in these spaces, however, are of great importance. Moreover, this importance is increased by the students' use of these spaces as a gathering place between class hours. Unfortunately, universities are currently full of lifeless environments, lacking vivacious interactions that could create a suitable place for the development of appropriate individual and collective behavior. A good case of this neglecting is the School of Art and Architecture of Bu-Ali Sina University, in the city of Hamadan, where such spaces have been noticed by the officials and, as a result, students are now being more encouraged to make a change.

According to the existing literature, social interactions in public built environments are affected by a number of factors. Recognition of these factors, which is the aim of the present study, will contribute to more efficient and dynamic design of educational environments. Designers of these environments may influence and stand in a relationship with the three variables of the present study, namely, social and psychological characteristics of the users, kinds of activities that are performed in an environment, and the physical design of a space. Given all this, the questions are:

- How much can the designer improve social interactions in an environment?
- Is there any relationship between the activities and sociability in an environment?
- Which indicators should be employed to explore the role of human and functional factors in the development of social interactions in a space?
- Is physical improvement of educational spaces considered as a major step towards the improvement of social interactions?

This study is intended to address the above questions. The general hypothesis is that human, environmental, as well as activity-related, features stand in a significant relationship with the sociability of spaces in the School of Art and Architecture. As social interactions may be a function of the dynamicity of the space which, in turn, may be affected by the above features, our independent variables are human, environmental, and activity-related features while our dependent variable is social interaction. The following hypotheses can be suggested in this regard:

1. Manipulating the physical features of space may create more dynamic educational spaces and encourage social interaction.
2. Psychological and social characteristics of the users of a space are the most important factors in social interactions among students.
3. Improvement of the students' extra activities leads to increased attendance in the public spaces of the university and, consequently, increases social interactions on their part.

REVIEW OF RELATED LITERATURE

The term 'sociability' dates back to 1828, but in the United States it came to vogue in 1895 through the ideas of Georg Simmel (Chicolet, 1999, p. 355). It was then elaborated by Giddens and Burgess and gained widespread acceptance after the publication of two famous papers in 1938 (Hormoz, 1997, p. 9). Interestingly, sociology was academically established as a discipline only in 1837 by August Comte. The terms 'sociable', or 'lover of society', and 'sociofugal', or 'lover of scatteredness', in architecture refer, respectively, spaces cause people to gather or to separate from each other. These terms were coined by Humphrey Osmond and Robert Summer as they were managing a hospital in Canada. Osmond first used these terms to describe semi-stable spaces, i.e. spaces with mobile furniture (Osmond, 1957). Thus, he emphasized the role of furniture in the sociability of a built space. Central to social interaction is the milieu in which it takes place. Public spaces, as the most proper



places for social interaction, have been addressed by numerous scholars since the time of Aristotle (Douglas, 2003). This section offers an overview of major theories that have addressed the influence of the environment on human behavior in terms of the notion of sociability. Collective social interaction has been widely conceived as a phenomenon belonging to all kinds of human-built environments, including private, semi-public, and public spaces. Yet, most researches, so far, have conducted into the relationship between sociability and public environments (Daneshgar Moghaddam et al., 2011).

In numerous recent studies, key factors in the individuals' scope of social interaction have been investigated. Among these factors, physical space has been considered as the most influential in organizing the collective social interactions of the users (Pasalar, 2003). In such studies, the focus is on the relationship between social organization and the structure of the environment. Moleski and Lang (1986) propose three levels in which physical environment supports behavioral events in a certain space. First, the way physical elements, such as light, are determined by the physical structure may facilitate the use of a space. Second, physical environment may organize the space in a way that patterns of activity in a space could be positively influenced. In other words, physical environment facilitates collective relationships by means of operational variables such as size, space geometry, as well as spatial relations. Third, physical environment is associated with feelings, experiences, as well as aesthetic conceptions that are highly likely to

improve the users' perceptions (Moleski & Lang, 1986).

Holland, Clark, Katz, and Peace argue that social interactions in public built environments are influenced by furniture, designs and patterns, lighting, building materials, sounds, and adjacent functions (Mardomi & Ghamari, 2011). Also, Daneshgar asserts that physical environment may create focal points of activity in certain part of the space. He further assumes that perception of natural elements within the public spaces is a major component of sociability. As he puts it, if the relationship between built spaces and natural elements is established and nature is more easily perceived within these spaces, collective activities will be encouraged? Features such as connection with natural environment, natural elements, natural landscapes, direct perception of natural events within the used space, as well as using natural building materials influence the quality of public spaces (Daneshgar-Moghaddam et al., 2011).

For Salehinia and Memariyan, synomorphy between the psychosocial characteristics of the users and the physical features of a public space affect social interactions in educational environments. Synomorphy between certain physical features and psychosocial characteristics of the users (e.g. interest in one's major of study, temporary mental states, motivation, and stopping in space) is increased by permanent attendance of the users, sustaining patterns of interpersonal and collective interaction, as well as improving, correcting, or changing their mental schemata (Salehinia & Memariyan, 2009). This is shown in (Fig. 1).

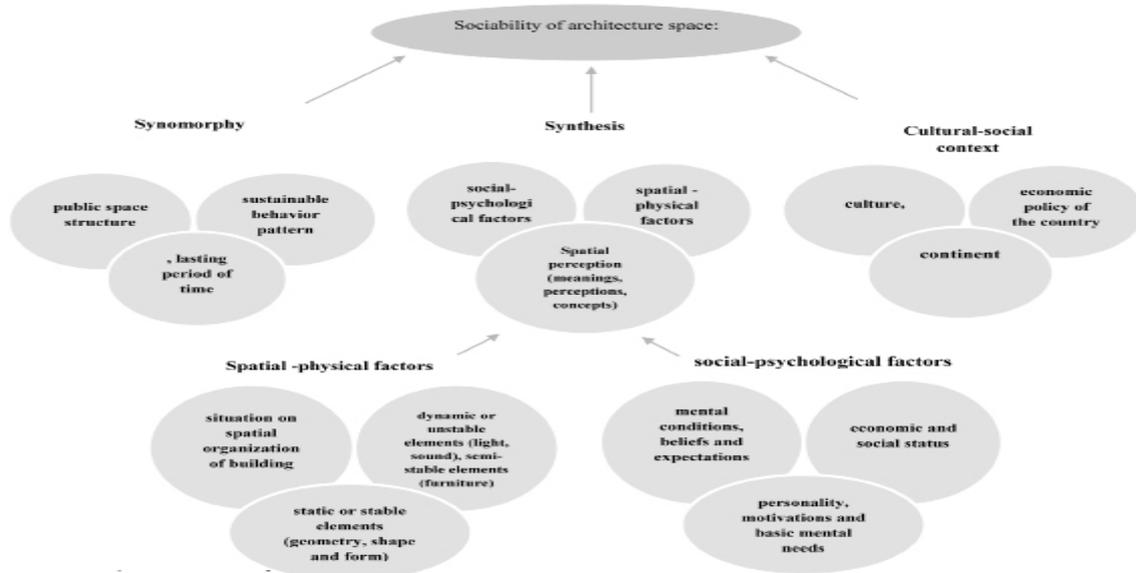


Fig. 1. Sociability Factors (Salehinia & Memarian, 2009)



In a study of the components of collective life and the spatial factors which are most influential on the quality of sociability in public spaces, Charkhchian and Daneshpour (2007) suggest the four following categories:

1. Invitingness
2. Security
3. Desirability
4. Responding to activities (Charkhchian and Daneshpour, 2007)

Their study indicates that physical features and activity-related features are major features of sociable public spaces.

Physical Characteristics of Public Space

Physical quality of public spaces is related to physical and visual modes of access, situation, physiological comfort in various climatic conditions, security, natural elements, suitable furniture for sitting and resting, as well as visual and aesthetic dimensions (Charkhchian & Daneshpour, 2007). Furthermore, such elements as memorials, stairs, and fountains are likely to encourage people to attend a certain space (Whyte, 1980).

According to Pakzad, integration of space, dimensions, proportions, flexibility, form, geometry, restriction, building materials, and physical continuity are the physical components of a public space (Pakzad, 2005).

Activity-Related Features of a Public Built Space

In addition to visual, aesthetic features, functional features of public spaces may increase or decrease social interactions. Sufficient room for sitting and public events like exhibitions can connect people to each other and give

them the opportunity to socialize (Whyte, 1980). Research has shown that sitting in a space, eating, exhibitions, and intimate events (Whyte, 1980) or, as Woolley (2003) calls it, active and inactive employment of space contribute to the attractions of a space. Various activities in a space can be categorized as following:

1. Compulsory activities: These activities take place without any attention to spatial qualities, e.g. passing through a space as a mere connection between two places.
2. Voluntary activities: These are activities that are performed only when a space is inviting and guarantees comfort and security for the users.
3. Social activities: These activities take place when people attend a space, e.g. looking, listening, experiencing other people, and active or inactive participation that contributes to the liveliness of a space (Woolley, 2003).

The study of Charkhchian and Daneshpour demonstrates that voluntary activities are most influential in the development of social interaction in public spaces. Lennard (1984), claims that prediction and creation of social events are more important than physical factors in the development of social interactions which could create opportunities for participation and engender a sense of affinity with space. (Lennard, 1984) Current theories in this regard are summarized in Table 1.

THEORETICAL FRAMEWORK

The above discussions indicate that sociability of people requires a deep knowledge of the relationship between humans and their physical environment as well as the activities performed in it.

Table 1. Constituent Factors of Sociability from the Viewpoint of Major Scholars

Researchers	Characteristic
Charkhchian and Daneshpour	Social dimension of public spaces can be based on a triangle of human, space and collective life; that improves sociability process by recognizing human needs, physical dimensions of public spaces, influential dimensions on collective life, supporting physical needs and required opportunities for social activities
Daneshgar Moghaddam, Bahreini and Einifar	Nature perception of human-made environments and activities in space promote social interaction in space
Lennard (1984)	Along with physical dimension of architectural public spaces, Lennard considers necessity of predicting and creating social events as other significant factors in sociability of people
Mardomi & Ghamari	Socio-psychological characteristics of users and physical factors of architectural public space play significant role on sociability of spaces
Salehi nia & Memarian	sociability of architectural public space is the result of synthesis and combination of human-physical factors



Mankind

The relationship between humans and physical places was called “spirit of place” by Rolf (Habibi, 2008). Schulz conceives this spirit as a factor that forms human perception of place which, in turn, leads to one’s behavior in public spaces (Schulz, 2003, p. 73). In investigating sociability, human being must be considered as a whole consisting of individual, social, cultural, physical, and physiological aspects since humans build on all these aspects to form various attitudes, expectations, and beliefs about their surrounding people and places (Charkhchian & Daneshpour, 2007).

Environment

As a major component of social interaction, environment is a place where life events take place. According to Herbert Genz, a potential environment provides an individual with a variety of opportunities to fulfill their needs so that whatever an individual achieves is a result of the built environment. Therefore, how a built environment is used depends on the number of opportunities and their quality (Matlabi, 2001).

Public Built Environment:

Human need for love and togetherness entails a physical context which can be best realized by public built spaces (Charkhchian & Daneshpour, 2007). Mardomi and Ghamari (2011) define public environments as following:

“Places and environments of social living” which could act as a common ground for behavior and social interaction as well as a development stage of “social knowledge” and “personal progress”. Public sociable environments allow promotion of solidarity, meeting others, individual growth, and creation of behavioral models. These environments are shared by all people and belong to collective identity. They contribute to the improvement of social interactions. (Mardomi & Ghamari, 2011).

In an educational context, Salehinia and Memarian (2009) refer to public environments as “complements of informal education”. They believe that sociability in these spaces is far more positive and profound than in workshops, educational rooms, religious places, and research centers of universities. (Salehinia & Memarian, 2009).

Physical Features of Public Built Environments

These features include architectural, visual, and aesthetic factors of space. Physical factors of public built spaces as well as physical occurrence of interpersonal and collective interactions can be realized through architectural factors.

Activities and Functions

Types of activities in a public built environment are related to various aspects, other than visual and aesthetic, of environment. These activities can either encourage or discourage people to attend a certain space and participate in social interactions.

Social Interaction

Interaction refers to an action which is responded by another individual. In responding to an action, it is necessary to understand its meaning as completely as possible. Social interaction may consist of a physical matter, a glance, or a conversation, all of which require a definition of suitable activities and events and, therefore, role-playing of individuals in social groups and networks (Charkhchian & Daneshpour, 2007).

Sociability and Collective Life

In public spaces, collective life is influenced by increased social interactions (Sennette, 1974, p. 215), gathering of various groups and individuals (Whyte, 1980), social security, promotion of tolerance, and the liveliness and sociability of space (Marcus & Francis, 1998). Socialization refers to being familiarized with and adapted to the society (Haghshenas, 2008, p. 842). According to Freud, socialization is a process in which the child comes to internalize the norms of the parents and achieves a superego (Tanhaee, 2000, p. 474).

Osmond defines sociability as a spatial quality that gathers people together (Osmond, 1957, p. 26). It refers to moving along the values, norms, and attitudes of the community and learning necessary skills for efficient participation in social life. In his study of social interactions in public spaces, Hall divides environments into sociable and sociofugal (Lang, 2004). Sociable environments encourage social interactions (Hall, 1982).

To summarize the above discussions, it could be said that sociable spaces can be defined as multi-purpose spaces that are central to numerous activities and make people socialize with each other (Lennard, 1998, p. 35). In a sociable organization of space, face-to-face contacts



are possible and physical distance of interactions can be reduced to as short as social-consulting distances

(Mardomi & Ghamari, 2011). The sociability of public spaces is briefly described in Table 2.

Table 2. Features of Sociability (Charkhchian & Daneshpour, 2007)

1. Enjoyment of individuals and social groups from presence on space
2. Providing physical and mental welfare
3. Receptive space for individuals and different groups
4. Socially active and constant presence in space

Based on what has been so far discussed, human, environmental, as well as activity-related factors may improve social interaction and, thus, sociability in a

space. As a result, the conceptual model represented in Fig.2 can be proposed. In the following, this model will be analyzed by means of empirical data.

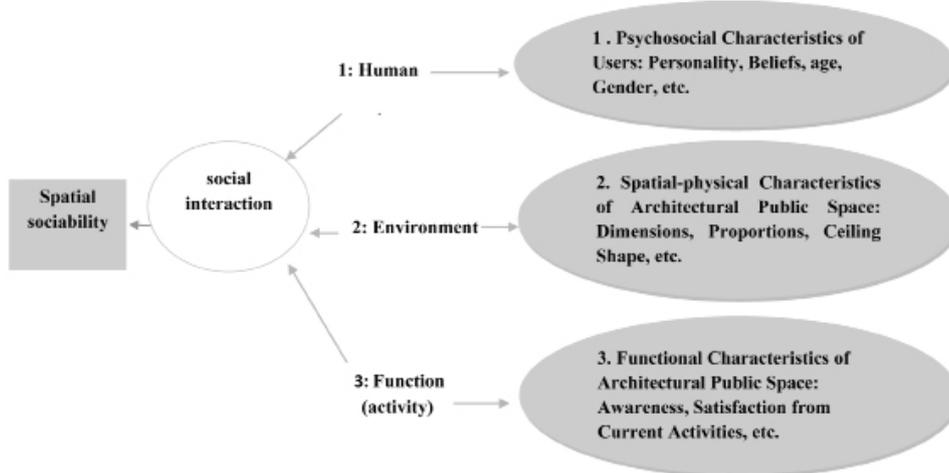


Fig. 2. Conceptual Model of Research

- 1. Human:** socio-psychological characteristics of users: personality, beliefs, age, gender, etc.
- 2. Environment:** spatial-physical characteristics of architectural public space: dimensions, proportions, ceiling shape, etc.
- 3. Function (Activity):** functional characteristics of architectural public space: awareness, satisfaction from current activities, etc.

RESEARCH DESIGN

Underlying this study is a descriptive-analytical methodology. It is intended to investigate the relationship between three independent variables, i.e. human, environment, and activity, and social interaction as the dependent variable.

Population and Sample

In this study, which is a survey, the aim is to measure the influence of human, activity-related (functional), and environmental (physical) factors on the sociability of spaces. The population consisted of 757 students at the School of Art and Architecture of Bu-Ali Sina University. Finally, by means of Cochran's formula, 256 students were selected as sample with a significance level of 95% and an error margin of 5%. The sample was comprised of four groups of students of architecture, graphics, archeology, and veterinary medicine, each consisting of 64 students. The questionnaire, which was distributed by the researcher over several days, included 17 statements and four questions regarding age, gender, major of study and university degree. The first five statements addressed the psychosocial features of space, statements 6 to 15



dealt with physical features, and the last three statements addressed the type of activities or functions assigned to the environment. The participants specified their answers on a five-point Likert scale, ranging from ‘totally agree’ (1) to ‘totally disagree’ (5) (1: Totally agree, 2: agree, 3: no idea, 4: disagree, 5: totally disagree) (Khaki, 2005: 258). Afterwards, the answers of each participant to the statements of each variable were quantified based on the point they had given to each group of statements.

The variables in question were as following:

1. **Psychosocial Characteristics of the Users:** This includes questions about age, gender, interest in educational progress, temporary mental states, and financial status.
2. **Physical Features of the Public Built Environment:** This includes questions about furniture for sitting and resting, spatial proportions, size, vivacity, elements of stop and pause, signs of art and architecture, color and texture of building materials, form of ceiling, wide windows, natural elements in open spaces, natural elements in public built environment, sufficient light, as well as elements like memorials, stairs, and fountains.
3. **Function or Activity in a Space:** This area covers factors such as current activities, being informed about current activities, attendance and social interactions of space.

Analysis of the Case Study

The School of Art and Architecture: This school is situated at Ghoobar Hamedani Street, Felestin Square (Fig. 3).



Fig. 3. Position of Main Building of Faculty of Art and Architecture, Bu Ali Sina University, Google Earth, 2014

(Figs.4 to14). It was founded in 2002 as a result of architecture department merging from the School of Engineering and archeology department, and the School of Humanities. Now it includes departments of archeology and urban planning, archeology, and graphics.



Fig. 4



Fig. 5



Fig. 6

Figs. 4 to 6. Expansiveness, Proper Lighting, form of Ceiling, color and Texture of Materials, Windows’ Surrounding, Ability to Perceive the Nature in Main Entrance Lobby and front Lobby of Library of the School of Art and Architecture, Bu-Ali Sina University, Hamadan.



Fig.7. Spacious, Proportions, Ability to Perceive the Nature by the Space of Sitting and Resting, all-Around Windows in The School of Art and Architecture Campus, Bu-Ali Sina University, Hamadan



Fig. 8



Fig. 9



Fig. 10

Figs. 8 to10. Color and Texture of Materials, Decorations, type of Ceiling, and Proper Lighting in the Cafeteria of the School of Art and Architecture, Bu-Ali Sina University, Hamadan.



Fig.11



Fig.12



Fig.13



Fig.14

Figs. 11 to 14. Informing Panels, Pause Elements, Stop and Sitting in Lobbies of the School of Art and Architecture, Bu-Ali Sina University, Hamadan.



Calculation of Reliability

In measuring the reliability, Cronbach’s alpha was calculated to be .72 which seems to be appropriate as it is greater than .7 (Table 3).

**Table 3. Reliability Statistics
(by Determining Cronbach’s Alpha)**

Reliability Statistics	
Cronbach's Alpha	N of Items
0.72	3

Multiple Linear Regression

Multivariate regression can help the researcher to study the linear relationship between a set of independent variables and a dependent variable in a way that, at the same time, the relationship between independent variables are also considered. Regression is useful in determining the variance of a dependent variable and this is possible to some extent by estimating the contribution of variables (i.e. two or more independent variables) to the variance. Multivariate regression is an appropriate method for studying the influence of multiple independent variables on a dependent variable. One of the output tables of multivariate regression test is called Model Summary which represents the correlation coefficient between variables and adjusted coefficients of determination (Table 4).

Table 4. Model Summary Table

Adjusted R Square	R Square	R	Model
0.624	0.703	0.548 ^a	1

The results of the above table indicate that correlation coefficient (R) between the independent variables and the dependent variable is 0.548, which shows that there is a medium correlation. Moreover, the adjusted coefficient is 0.624, which shows that 62.4 percent of the changes in spatial qualities are due to the three independent variables.

The next table represents the data of ANOVA test which address the model fitting (Table 5).

Table 5. ANOVA Table

ANOVA ^b			
Model	df	F	
Regression	3	42.724	0.003 [*]
Residual	83		
Total	86		

Given the significance of the results of F-test (42.742) in a level of <0.003, it can be safely inferred that the regression model of this study can successfully explain the influence of the independent variables on the dependent variable. The next output will be coefficients table which shows the influence of each variable on the model (Table 6).

Table 6. Coefficient Table

Coefficient			
Model	Standardized Coefficients	t	Sig.
	Beta		
(Constant)		23.720	0.000
Psychosocial Characteristics of Users	0.693	8.631	0.000
Physical Characteristics	0.337	2.137	0.046
Characteristics of Activities in Environment	0.572	6.214	0.003



ANALYSIS OF COEFFICIENTS TABLE

1. Psychosocial Features of the Users

This factor is significant since its Sig value is less than 0.05 As with Beta value, its value is 0.693 and shows a high amount of positive influence on spatial qualities.

2. Physical Features

Its Sig value is .046 which means that it is significant. However, its Beta value suggests that its positive influence is too small to be regarded as important.

3. Activities in the environment

The Sig value here is 0.003 which is also significant. Similarly, the Beta coefficient, which is 0.572, seems to be positively influential.

As a result, we could safely assume that psychosocial factors are the most important factors in spatial qualities. following are activities performed in an environment and ,then, physical features.(Fig. 15)

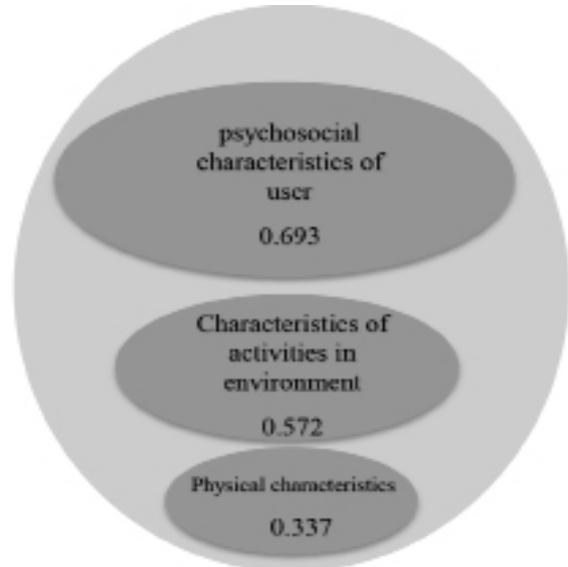


Fig.15.The Stages of Socialization in a Hierarchical Order of Importance

Pearson correlation coefficient was used to study the relationship among the main factors of the quality of public spaces in the School of Art and Architecture (Table 7).

Table 7. The Correlation of The Qualitative Factors of the Quality of Public Space

Quality	Characteristics of Activities in Environment	Physical Characteristics	Socio-psychological Characteristics
Characteristics of Activities in Environment	1		
Physical Characteristics	0.452*	1	
Socio-Psychological Characteristics	0.396*	0.276	1

**p<0.01, *p<0.05

The table shows the relationship between human factors, which are the most important, and activity-related factors as $r=0.396$ at a significance level of 0.01. Therefore, we can assert with a certainty of 95 percent that there is a direct correlation of 0.396 between these two groups of factors. This means that activity related indicators rise as human indicators increase and vice versa. There is also a correlation ($r=0.452$) between physical factors and activity-related factors at a significance level of 0.01, which means that improving

the quality of physical factors leads to increase in social activities and vice versa.

Friedman Test / Bivariate Analysis of Variance: Friedman test was used to evaluate the opinions and ranking the qualities of human indicator according to their importance. Friedman test is usually used for bivariate analysis of variance by means of ranking and comparing the average ranking of different groups (Habibpour & Safari, 2012, p. 694) (Table 8).



Table 8. Friedman Test

Quality	Average Grade
Age Growth	3.80
Degree Incensement	2.96
Interested in Learning	2.91
Financial Status	3.44
Person Vitality	1.89

In interpreting the results of Friedman test, in order to determine whether the difference of average ranking from the main components is significant or not, we should make use of the results of the second table (Test Statistics).

In this table, with reference to the results of Chi-square test (27.209) which is significant at 0.01,0 the role of all features in human indicator is significant (for a level of 0.000). In addition, to determine the significance of difference in the human factors average ranking of qualities, Friedman test hierarchizes these five factors from the subjects' viewpoint. In doing so, we can make use of the results of the table (Ranks) which are represented in Table 8. Table 8 shows that, from the subjects' point of view, the most important component of human indicator is the financial status of people as well as their age growth and educational level. The least amount of influence belongs to people's liveliness.(Fig.16) depicts the relationship among different indicators .

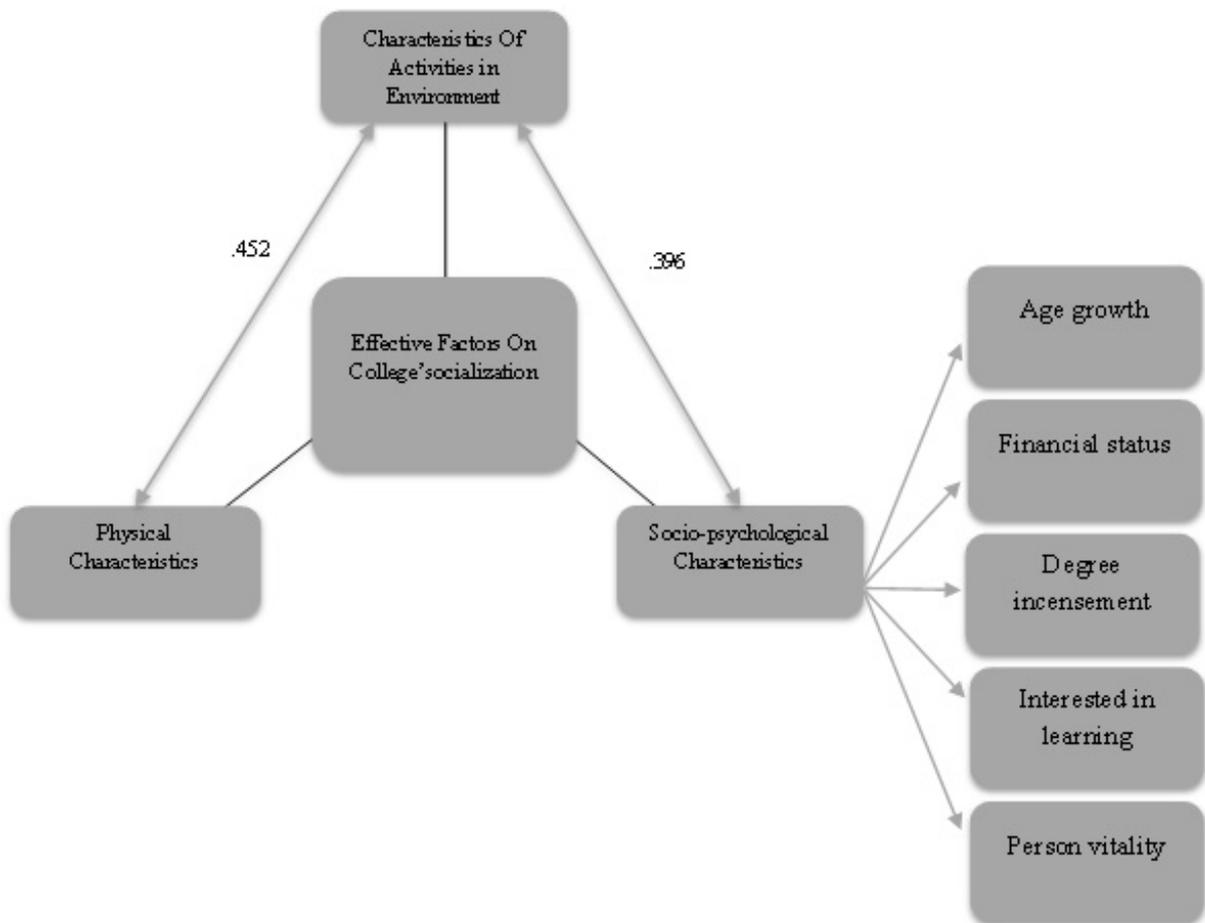


Fig.16. The Relationship of Difference Indicators of the Sociability of Space



CONCLUSION

This study was aimed to determine the key factors of sociability development in educational environments. According to the findings, from among the three variables, the psychosocial characteristics of the users of the space tend to be the most influential and physical features of the public environment are the least influential factors in the development of sociability and creation of highly interactive spaces.

The results of Pearson correlation test confirm the significant, positive correlation between the psychosocial indicator and the activity-related indicator. It means that any increase in activities in a space leads to improvements in the psychosocial indicator and vice versa. Moreover, there is a significant, direct correlation between the physical indicator and the activity indicator. Therefore, improvement of the physical quality of space may extend activities and vice versa. This contributes to the sociability of a space.

It appears that the students' mental interpretation of the existing spaces forms the process of transformation of the individuals into a community. In this regard, psychosocial factors are most influential in the transition from isolated into social structures of space. As the high correlation coefficient suggests (0.693), this influence is remarkable and forms the basis of sociability in existing spaces. Of course, the next factor, i.e. the role of functions and activities, with a correlation coefficient of .572 is also strongly influential in social interactions in the School of Art and Architecture. For instance, various activities such as exhibitions in the lobby, art galleries in the corridors, and architecture competitions in the main yard and ateliers, all contribute to the sociability of the environment.

As a conclusion, it is suggested that designers of educational environments consider space consumers, the intended collective activities, and physical factors while also paying enough attention to their micro-variables. Some micro-variables related to the social and psychological characteristics of users include: age, gender, interest in one's major of study, temporary mental states, and financial status. A number of physical micro-variables include: furniture for sitting, spatial proportions, wideness and vivacity of space, elements of pause and stop, signs of art and architecture, color and texture of building materials, form of the ceiling, decorations, wide (and perhaps panoramic) windows, natural elements in open spaces or within the built environment, sufficient indoor light, and elements like memorials, stairs, or fountains. Finally, micro-variables of activities refer to users' satisfaction with the current activities in the environment, users' attendance in public spaces, and the degree of social interaction.



REFERENCES

- Chicolet, R. (1999). *Theories of Comparative Politics* (V. Bozorgi & A. Tayeb, Trans.). Tehran, Iran: Rasa Press, 355.
- Cooper Marcus, C., & Carolyn, F. (1998). *People Places: Design Guidelines for Urban Open Spaces*: Van Nostrand Reinhold.
- Daneshgarmoghdam, G., Bahraini, S. H., & Eynifar, A. (2011). An Investigation on Sociability of the Spaces Based on Perception of Nature in the Built Environment. *HONAR-HA-YE-ZIBA*, 45, 25-36.
- Daneshpour, A., & Charkhchiyan, M. (2007). Public Spaces and Influential Factors on Collective Life, *Bagh-e Nazar*, 7, 19-28.
- Douglas, M. (2003). *Urban Space in Globalization Era*.
- Forgas, J. (2000). *Psychology of Social Interaction: Mia Behavior of the Individual* (M. Firoz-Bakht & K. Beygi, Trans.). Tehran, Iran: Mahd Publication.
- Habibi, R. S. (2008). Mental Image and the Concept of Place, *HONAR-HA-YE-ZIBA*, 35, 39-50.
- Habibpour, K. & Safari, R. (2012). *Comprehensive Manual for Using SPSS in Survey Researches*. Tehran: Looyeh.
- Hagh-Shenas, A. M. et al., (2008). *Hezareh English-Persian Dictionary* (13th Ed.). Tehran: Farhang Moaser.
- Hall, E. T. (1982). *The Hidden Dimension*. New York: Anchor Books.
- Holland, C., Clark, A., Katz, J., & Peace, S. (2007). *Social Interaction in Urban Public Spaces*. Britain: Joseph Down tree Foundation.
- Hormoz, M. (1997). *Background of Political Sociology: Political Sociability*. Tehran, Iran: Pazhang.
- Khaki, G. (2005). *Research Methodology with an Approach to Thesis Writing*. Tehran, Iran: Baztab Publication.
- Lang, J. (2004). *Creating Architectural Theory: The Role of Behavioral Sciences in Environmental Design* (A. Einifar, Trans.). (3rd Ed.). Tehran, Iran: Tehran University Press.
- Lennard & Lennard (1984). *Public Life in Urban Spaces*. Southampton: Godlier.
- Leonard, S. (1998). Designed Urban Space and Social Life (R. Mojtaba pour, Trans.). *Journal of Architecture and Urbanism*, 44, 45.
- Mardomi, K., & Ghamari, H. (2011). Influential Architectural Requirements on Sociability of Metro Stations Spaces. *Urban Management*, 27.
- Matlabi, G. (2001). *Environmental Psychology: A New Knowledge in the Service of Architecture and Urban Design*. *HONAR-HA-YE-ZIBA*, 10.
- Moleski, W. H., & Lang, J. T. (1986). *Organizational Goals and Human Needs in Office Planning*, In Jean D. Wineman (Ed.), *Behavioral Issues in Office Design*. New York: Van Nostrand Reinhold Company.
- Osmond, H. (1957). *Function as the Basis of Psychiatric Ward Design*. New York: Holt Rinehart and Winston.
- Pakzad, J. (2005). *Guidelines of Designing Urban Space in Iran*. Tehran, Iran: Payam Sima publication.
- Pasalar, C. (2003). *The Effects of Spatial Layout on Students' Interactions in Middle Schools: Multiple Case Analysis*. Unpublished Ph.D. thesis, Faculty of North Carolina State University.
- Salehinia, M., & Me'marian, G. (2009). Sociability of Architecture Space. *HONAR-HA-YE-ZIBA Architecture and Urbanism*, 40, 5-17.
- Schultz, N. (2003). *Architecture: Meaning and Place* (V. Norouz-Borazjani, Trans.). Tehran, Iran: Jan-e Jahan Publication.
- Sennett, R. (1974). *The Fall of Public Man*. New York: W.W. Norton & Company.
- Tanhaei, H. A. (2000). *An Introduction to Schools and Theories of Sociology*. Mashhad: Ney Negar.
- Whyte, W. (1980). *Social Life of Small Urban Space*. Conservation Foundation.
- Woolley, H. (2003). *Urban Open Space*. New York: Spon press.

