Analytical Approach to Find Effective Factors

On Users' Attachment to Public Spaces (Case Study: Khayyam Street, Qazvin)

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Abstract
Different physical, social, activity and meaning aspects define public spaces as a social space. Several studies argue the relations between those main aspects and users' attachment to such spaces. In this regard, this study tries to evaluate the significance of the relations between those four mentioned aspects in a selected public space based on the citizens' choice as a successful and desirable urban space. Data have been analyzed by SPSS software and the results indicate all of mentioned dimensions have a positive significance correlation users' attachment to the place. Although, the result of path analysis shows activity aspect has an indirect effect on users' attachment to the place the regression analysis result shows activity aspect has no significant effect on place attachment (P value> 0.05). In contrast, social aspect of the place which affected by other aspects, mainly by activity aspect; has the highest score (T=11.680). In addition, users' attachment degree depends on the physical potential of space during time and involving to the place activities. In this regard, three indicators: aesthetic values, variety of activity and time play key role in formation of the users' attachment in the public spaces.

Keywords: *Place Attachment, Public Space, Social Aspect, Physical Aspect, Meaning Aspect, Activity Aspect, Aesthetics Values, Iran*

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Introduction

The factors that contribute to place attachment are multifaceted. It is a process that has many inseparable and mutually defining place characteristics: activity, physical and meaning (based on Canter's place theory). In order to investigate such an important aspect of the relation between human and environment, place attachment; a public space as an important social space in the public life of cities was selected. Following several researches studying public spaces by their different characteristics such as climate comfort (Linday, 1978), contextual features (Chidister, 1988), natural elements (Kaplan and Kaplan, 1982 and Stedman et al, 2004) and activities (Whyte, 1980 and Wooley, 2003) we tried to gather different aspects of a successful public spaces. As there was a wide range of indicators each of which refers to different aspects of a place we tried to categorize them into four aspects including physical, activity, social and meaning aspects.

Now in this study, there are some important questions to be answered. The questions are: Do physical, activity, social and meaning aspects have any effects on user's attachment to Khayyam Street as a public space? How the degrees of these effects are and which of them is the most effective factor anticipating place attachment degree? Which indicators of those mentioned aspects have the most significant impact on place attachment? Finally, how we can develop place attachment to public spaces and in this regard which place characteristics should be taken into consideration while we are designing and programming those spaces?

A Definition of Place Attachment

Place attachment is an affective bond or link between people and specific places (Hidalgo & Hernandez, 2001; Moore & Graefe, 1994; Williams et al, 1992) based on cognition and affect (Low & Altman, 1992; Proshansky et al, 1983). This term has been defined as a positive emotional bond with a particular place (Low & Altman, 1992). Altman and Low explain that, "place attachment subsumes or is subsumed by a variety of analogous ideas, including topophilia, place identity, insidedness, genres of place, sense of place or rootedness, environmental embeddedness, community sentiment and identity to name a few" (ibid:3). In addition, place attachment facilitates a sense of security and well-being, defines group boundaries, and stabilizes memories (Halbwachs, 1980) over the passage of time (Logan & Molotch, 1987; Chawla, 1992; Marcus 1992; Read et al 1997; Rubinstein & Parmelee 1992). The studies show that place attachment not only can be considered as an emotional needs in our place but it has different effects in our life and can enhanced the effect of restorative experiences on perceived health benefits and more importantly positively moderated the mediating effect of restorative experiences (Zhou et al., 2024). Moreover, Dalavong and his colleagues emphasized the mediating roles of place attachment and place image in the relationship between placeness and behavioral intention (Dalavong et al. 2024).

Gieryn (2000) argues that place attachment results from many factors including accumulated geographical experience, socially and culturally shared activities and the geography and architecture of the place. Experiences that produce place attachment are described as "fulfilling, terrifying, traumatic, triumphant, secret events that happen to us there" (Gieryn, 2000:481). The longer people have lived in a place, the more rooted they feel, and the greater their attachment will be (Elder et al, 1996). Gieryn stated that the loss of place and its meaning have negative implications for individuals' collective identity, memory and history

(Gieryn, 2000). In a study about the workplace, Milligan (1998) found that place attachment is based on nostalgic memories of past experiences in a physical setting and anticipations that positive encounters might continue in the future.

Giuliani and Feldman defined place attachment as the multiple affective, cognitive, and behavioral relationships between people and socio-physical environment (Giuliani & Feldman, 1993:273). Similarly, Low and Altman (1992) considered the range of place attachment definitions in literature and noted that one consistently defining aspect of the concept was its emotional quality. They did not over emphasize this quality, but pointed to others in the field who had argued that place attachment also includes cognition and behavior: "That is, an interplay of affect and emotions, knowledge and beliefs, and behaviors and actions in reference to place" (Low and Altman, 1992:5).

Theorists have tried to categorize place attachment. For example, Schreyer et al (1981) considered place attachment in terms of two dimensions; functional and emotional. Williams and Roggenbuck (1989) also empirically defined place attachment as consisting of two-dimensions: place identity and place dependence. In a study by reviewing the relevant literature, 10 sub-categories for place dependency and place identity were introduced. In this research place dependency defined by 7 sub-categories including practical use, visual appreciation, linking to place via tangible elements, feelings and emotions, safety and privacy, social bonding and gathering, and individual preferences, and place identity described by 3 sub-categories including memory and meaning, identity building with reference to history, defining place attachment (Bazrafshan et al, 2021).

Place Identity

This term refers to Proshansky's concept of place identity. The notion of place identity is described as "those dimensions of self that define the individual's personal identity in relation to the physical environment by means of a complex pattern of conscious and unconscious ideas, beliefs, preferences, feelings, values, goals and behavioral tendencies and skills relevant to this environment. While an individual's place identity reflects the specific experiences and socialization unique to that individual, place identity also reflects those experiences common to all individuals and groups of individuals living in particular kinds of settings" (Proshansky, 1978:155). Place identity is also described as the symbolic connection between an individual and a place (Stedman, 2002). Place identity is a psychological investment in a place that has developed over time. In this regard, place affirms individual or group identity referring to indicators of emotional or affective attachment. Place identity can be both cognitive and affective; yet it remains unclear how these separate factors operate in defining place identity (Williams & Patterson, 1999). "These cognitions represent memories, ideas, feelings, attitudes, values, preferences, meanings, and conceptions of behavior and experience, which relate to the variety and complexity of physical settings that define the day-to-day existence of every human being. At the core of such physical environment-related cognitions is the 'environmental past' of the person; a past consisting of places, spaces and their properties which have served instrumentally in the satisfaction of the person's biological, psychological, social, and cultural needs" (Proshansky et al, 1983:59). Following Proshansky's study, Twigger-Ross and his colleague attempted to describe place identity. They developed key aspects of identity: self-esteem, self-efficacy, distinctiveness and continuity; based on Breakwells' identity process model. Their study can be used as a means of conceptualizing the relationship between individuals or groups and places (Austin, 2003).

Place Dependence

The second component of Williams and Roggenbuck's scale, place dependence, is conceptually similar to both Schreyer et al. (1981) and Stokols and Shumaker's (1981) components. Functional attachments, or what Stokols and Shumaker (1981) describe as place dependence, have to do with the opportunities the setting affords for fulfillment of specific goals or activity needs? Place dependence is a functional attachment associated with the capacity or potential of a place to support the needs, goals, or intended activities of a person (Stokols & Shumaker, 1981; Williams & Vaske, 2003).

Williams and Roggenbuck (1989) developed instrumentation to measure these two components of place attachment that has been shown to be valid and reliable over time (Jorgensen & Stedman, 2001; Williams & Vaske, 2003). Williams and Vaske (2003) developed a valid and reliable 12-item, 5-point Likert scale place-attachment survey, initially used in recreational settings. However, it can be generalized to other situations. Internal-consistency reliability (Cronbach's alphas ranging from .81 to .94) for the final 12-item survey was also reported (figure's 1 table). We adopted this valid and reliable instrument verbatim to measure place attachment in a public space discussed below.

1. I feel that this place is a part of me.
2. This place is the best place for what I like to do.
3. This place is very special to me.
4. No other place can compare to this place.
5. I identify strongly with this place.
6. I get more satisfaction out of being at this place than at any other.
7. I am very attached to this place.
8. Doing what I do at this place is more important to me than doing it in any other place.
9. Being at this place says a lot about who I am
10. I wouldn't substitute any other area for doing the types of things I do at this place.
11. This place means a lot to me.
12. The things I do at this place I would enjoy doing just as much at a similar site.

Figure 1. Table of the twelve items for surveying place attachment (Williams and Vaske, 2003).

Several studies have shown that place attachment is associated with environmentally responsible behavior (Vaske & Kobrin, 2001). In fact, positive attachments to a place may be linked to individuals' willingness to participate in the protection of that place (Relph, 1977; Schultz, 2000; Tuan, 1977; Walker & Chapman, 2003). Therefore, place attachment study has another important dimension that, in this study, was named behavioral bonds. In this regard, the effects of place attachment on enhancing participant's behaviors in a place evaluated behavioral bonds. In different studies, place attachment has been measured by different dimensions depending the type of the place. For example Dasgupta and his colleagues evaluated place attachment to the urban green spaces by place identity, place dependence, social bonding and nature bonding (Dasgupta et al., 2022) and Wachter assessed it in residential spaces by place identity, place dependence, social bonding and ambient bonding (Wachter, 2024)

A model of place attachment was designed for this study by considering two main ideas. 1) Existing studies which categorized place attachment into: place dependence (based on functional dimensions of the place) and place identity (based on cognitive and emotional

dimensions of the person to place relationship). 2) Behavioral bonds which refer to the effects of place attachment on individuals' responsible behavior. Hence, our model consists of four dimensions: functional, emotional, behavioral and cognitive bonds with a place (see figure's 2 table).

Dimension	Sentences
Functional	I enjoy spending time at Khayyam I get more satisfaction out of visiting Khayyam than any other public spaces I prefer public spaces like Khayyam I wouldn't substitute any other public spaces for Khayyam Khayyam is the first place that I elect for spending time at the city
Emotional	I feel being at home when I am at Khayyam Khayyam is my favorite public space I have a lot of memories about Khayyam I think People at Khayyam are similar to me. If it is possible I would come to Khayyam every day
Behavioral	I am ready for support maintenance of Khayyam financially I'll do my best for maintenance of Khayyam I think people have respectfully behavior at Khayyam
Cognitive	There are some special characteristics in Khayyam that differentiate it from other public When I think about Qazvin, first thing I remember, is Khayyam Khayyam have all characteristics of a good public space

Figure 2. Table of this study's model for surveying place attachment.

Different Aspects of a Successful Public Space

Comfort and security are two of the essential human needs in public spaces (Baba and Austin, 1989; Carr et al., 1992). Places that provide a sense of safety and security are more likely to be used. Also it is important that users feel a sense of psychological comfort. This is particularly true for elderly or lower income users. Generally, comfort refers to supporting the user's activities in public spaces, and security to protecting users against crime, vehicles and undesirable weather conditions (Gehl, 1987). Formal or informal surveillance or the programming of activities on the site may lessen fears concerning safety (Hester 1984).

Accessibility is another important factor in determining use in public spaces. If a site is inconvenient to go to it is less likely that it will be used. Likewise, if a site does not appear welcoming most will feel uncomfortable using it (Hester 1984). A successful public space is easy to get to and get through; it is visible both from a distance and up close. Accessible spaces have a high parking turnover and, ideally, are convenient to public transit (PPS.org), an appropriate location (Hester 1984), visual cues, and legibility (Carr, 1992) which help users to find different directions.

Natural elements, green space and water; not only impact on users' health and place satisfaction in public spaces, but also encourage them to participate in physical and social activities. Using local plants, color variety in different seasons, complexity, pavement, focal points, and organic design create and waterscapes such as fountains, water walls and sluices create more attractive (Moore, 1982; Ulrich, 1984; Parsons, 1991; Faber Taylor et al., 2001) and secure public spaces (Kweon et al., 1998).

Furthermore, *aesthetics values* in the design of public spaces create attractive places (Lokaitou-Sideris and Banerjee, 1998) and some features like legibility, coherence (Lynch and

Hack, 1985) and beautiful natural views (Gehl, 1987) play key roles in achieving this aim. Visual qualities can improve, or may detract from, one's experience of place, for instance visual unity of paths will provide a visitor a better sense of the entire space (Hester 1984). Nasar (1994) categorizes aesthetic aspects into the following types:

1. Formal aesthetics which refers to form, rhythm, scale, complexity, color, lighting, order, hierarchy, space relations, and other similar factors which can be defined in three levels including enclosure, complexity and order;
2. Symbolic aesthetics, which refers to the meaning derived from type, function and style. It also relates to naturalness, upkeep, intensity of use and style;
3. Schemas aesthetics which refers to the typicality, familiarity or fitness to the knowledge structure. That means typicality explicitly deals with the interaction between the content of a place and the mind of the observer.

Many studies on public spaces show ***amenities and facilities*** will not only promote return visits but will also encourage people to stay in a place longer. Providing urban furniture such as benches, seating edges, multifunctional kiosks, recycling facilities, signs, services and venders are essential elements in this case (Lokaitou-Sideris and Banerjee, 1998).

Programming different activities such as daily and seasonal events, individual and public activities and finally active and passive engagement, not only affect the quality of place but also attract people to public spaces. In addition, such activities, active or passive cause places to be more livable (Gehl, 1987). Live performance events can help to enhance the productive potential of an urban space in multiple ways. Performance festivals can help enhance city life by turning urban spaces into cultural Places (Damrhung, 2025). In addition, the studies shows flow experience has a significant positive effect on place attachment, and the deeper the flow experience; the more likely it is to produce attachment to places. With a stronger flow experience, residents will be more actively involved in recreational activities and will develop a stronger attachment to various functions of the park, thus forming place attachment (Tao et al, 2022). Active engagement refers to direct personal experiences with places (Whyte, 1980) including activities such as jogging, recreation, sports, gathering, competition and other physical activities (Carr et al., 1992) and Passive engagement such as looking, hearing, resting, meeting and other similar activities (Carr et al., 1992) could lead to a sense of relaxation without active involvement.

Moreover, ***social dimension (sociability)*** is the most important feature of responsive public spaces. A sociable place is one where people want to go to observe the passing scene, meet friends, and celebrate interaction with a wide range of people that are different from themselves (PPS.org). Social activities based on Gehl's theory have a direct effect on place satisfaction and in creating responsive public spaces (Gehl, 1987). Another important feature of social dimension is the concept of inclusivity emphasizing on participating all citizens to urban daily life (Tachir and Nilay Evcil, 2022).

Finally, ***meaning (connotative) dimension*** is another important aspect of a responsive public space that depends on physical (Marcus and Sarkissian, 1986; Brower, 1988; Green, 1999), social and activity dimensions (Fried, 1963; Cohen and Shinar, 1985). Some mediators help developing meanings such as signs, history and cost of place and gathering spaces. In addition, the length of time, past experience and memories are very important to give meaning to a place for their users (Tuan, 1974; Kaplan and Kaplan, 1982; Prentice and Miller, 1992; Riley, 1992; Korpela and Hartig, 1996; Gifford, 2002).

Materials and Methods

As it has been shown in figure 3's table, four aspects of public spaces including: physical, social, meaning and social aspects; were evaluated in the study applying questionnaire technique. Firstly, physical aspect was evaluated by questioning participants' opinions and their evaluations about different physical dimensions of the case including: comfort and security, accessibility, natural elements, aesthetics values, and place amenities and facilities. Secondly, activity aspect were evaluated by questions evaluating personal and group presence in the place, place activity in all of its parts and all time, capacity of the place in supporting users' activity and existence of permanent users in the place. Thirdly, social aspect assesses existence of focal points, gathering spaces, social events and providing privacy and territory for users were evaluated. Then, meaning aspect was evaluated by questions referring sign, time and memory in the place (see below).

Physical aspect	**Comfort and security**	Protection against car	
		Protection against climate conditions	
		Protection against crime	
		Place management and maintenance	
	Access	Place location	
		Bicycle path	
		Different access alternatives	
		Pedestrian prominent	
		Relation to context	
	Natural elements	water	
		Green spaces	
	Aesthetic values	Formal	Complexity
			Order
			Enclosure
		Symbolic	Maintenance
			Permanent presence of people
			Style
	Amenities and facilities	Benches, shelters, bus stop, waste bin	
Activity aspect	**Variety of activities**	Active engagement	
		Passive engagement	
	Activity satisfaction (protecting users' activities)		
	Active in all time	During day	
		During month	
		During year	
	Active in all parts		
	Permanent use of place		
	Group and individual presence		
	Different social groups in the place		
Social aspect	**Gathering spaces**		
	Meeting friends in the place		
	Permanent users		
	Presence of children, women and elders		
	Social groups		
	Presence of different age groups		
	Introducing place to others		
	Social interactions in the place		
	Mood of people in the place		
	Tendency to participate in the place		
Meaning aspect	**Memories**		
	Signs	Monuments	
		Special events	
		Meeting spaces	
		Special buildings	
		Economic worth of the place	
	Time	Length of familiarity with place	
		Permanent use of the place	
		Age of place	

Figure 3. Table of this study's model for surveying different aspects of the public space.

In order to evaluate the degree of place attachment, as dependent indicator; Williams and Vaske (2003) developed a valid and reliable 12-item, 5-point Likert-scale place-attachment survey, initially used in recreational places but generalizable to other settings. Considering such existing studies, we designed a model of place attachment consisting four dimensions: functional, emotional, behavioral and cognitive bonds with a place (see figure 2). The results were analyzed by SPSS software applying Pearson correlation test and regression analysis.

Case Study

Khayyam Street is located in the center of Qazvin and has three main sections: northern, central, and southern. This street connects the new and old fabric of Qazvin. Khayyam Street is one of the oldest streets in Qazvin, which always invites a large number of citizens of this city to take a walk. In recent years, by building very large complexes, renovating different parts of its street edges, and building cafes, various shops, and restaurants, it has been able to attract more and more attention particularly the young people. This street is one of the few places where you can experience nightlife in the city at night. Among the city's numerous public spaces, such as parks, streets, squares, and the city's bazaar, this street is the most crowded public space that has attracted a diverse range of social groups.

Figure 4. Photos from Khayyam Street. Source: www.mehrnews.com.

Data collection

Data were collected from users of Khayyam Street and we interviewed with 598 participants in two groups, who had been selected through quota sampling, taking in to account the participants' age (between 14-80 years old), sex (51% female and 49% male), education and social class, see figure 5 below.

Social Character	Mean	Std. Dev.	Min	Max	N
Age	27.94	11.326	14	80	598
Marriage statue	.58	.494	0	1	598
Gender	.51	.500	0	1	598
Native	.70	.460	0	1	598
Education	12.70	3.030	0	20	598

Figure 5. Table of the social and demographics of the participants.

Group 1: Users who present at Khayyam
Our team was located in 5 areas of Khayyam and the interviews were carried out individually at different public spaces. The interviews took 15 minutes in average. Totally, 298 users were interviewed.

Group 2: Users who live in Qazvin city
In this group, we planned to interview with 300 participants. Therefore, first we prepare a map of different regions of the city. As this map consists of four regions, we calculated number of participants in each region based on its population (table in figure 6). Then divided each region equally based on number of participants that center of each part was interview location (figure 1).

Regions	Population	Participants Number
Region 1	93384	75
Region 2	69567	87
Region 3	102917	59
Region 4	88470	80
Total	35538	301

Figure 6. Table calculating number of participants in group 2.

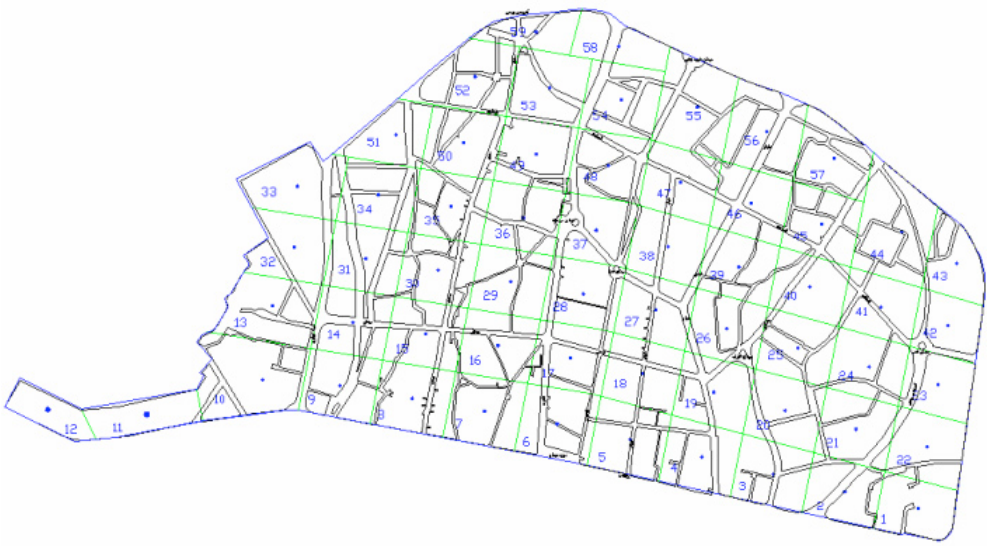

Figure 7. Interview locations of region 2 in the city.

Results

First, the internal consistency of the scale used was calculated. The results indicated a high degree of reliability with a Cronbach's alpha of 0.83 for the scale as a whole. Second, correlations between the different independent place indicators and place attachment have been examined (see the next 3 tables). Then, in order to explore how these indicators interact to each other and evaluate their degrees a path analysis has been applied (see Figure 11). The results are discussed in the following.

Activity aspect	Pearson Correlation	.227**
	Sig. (2-tailed)	.000
Physical aspect	Pearson Correlation	.348**
	Sig. (2-tailed)	.000
Place meaning	Pearson Correlation	.358**
	Sig. (2-tailed)	.000
Social aspects	Pearson Correlation	.570**
	Sig. (2-tailed)	.000

Figure 8. Table of the Pearson correlation results of the four main aspects of the public space.

comfort and Security	Pearson Correlation	.082*
	Sig. (2-tailed)	.046
Accessibility	Pearson Correlation	.103*
	Sig. (2-tailed)	.012
Aesthetics values	Pearson Correlation	.519**
	Sig. (2-tailed)	.000
Natural Factors	Pearson Correlation	.112**
	Sig. (2-tailed)	.006
Facilities	Pearson Correlation	.179**
	Sig. (2-tailed)	.000
Different activity	Pearson Correlation	.398**
	Sig. (2-tailed)	.000
Activity Satisfaction	Pearson Correlation	.147**
	Sig. (2-tailed)	.000
Active in all parts	Pearson Correlation	-.084*
	Sig. (2-tailed)	.042
Personal and Group presence	Pearson Correlation	-.035
	Sig. (2-tailed)	.391
Active in all times	Pearson Correlation	-.039
	Sig. (2-tailed)	.344
Permanent use	Pearson Correlation	.333**
	Sig. (2-tailed)	.000
Social Responsiveness	Pearson Correlation	.570**
	Sig. (2-tailed)	.000
Signs	Pearson Correlation	.212**
	Sig. (2-tailed)	.000
Length of time	Pearson Correlation	.391**
	Sig. (2-tailed)	.000
Memories	Pearson Correlation	.181**
	Sig. (2-tailed)	.000

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Figure 9. Table of the Pearson correlation results in different indicators with place attachment.

Correlations between users' assessments about four aspects of the public space and the degree of their place attachment were evaluated applying Pearson correlation exam (Figure 8). The result show: first, all of physical, social, meaning and activity aspects have had positive significance correlation with place attachment. Second, by comparison with other aspects, social aspect has the highest correlation with users' attachment (Pearson correlation =.570++). However, the lowest correlation belongs to activity aspect (Pearson correlation =0.227++). Further investigations on different evaluated indicators in four mentioned dimensions show us aesthetics values among physical aspect, variety of activities among activity aspect and spent time among meaning aspect have the most significant correlation with attachment degree.

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.142	.301		3.793	.000
Physical aspect	.367	.055	.227	6.633	.000
Activity aspect	-.034	.044	-.028	-.766	.444
Social aspect	.342	.029	.481	11.680	.000
Place meaning	.069	.037	.075	1.857	.064
Dependent Variable: Place Attachment					

F=87.849
Significance=0.00

Figure 10. Table of the first regression analyses model applied for four main aspects of the public space.

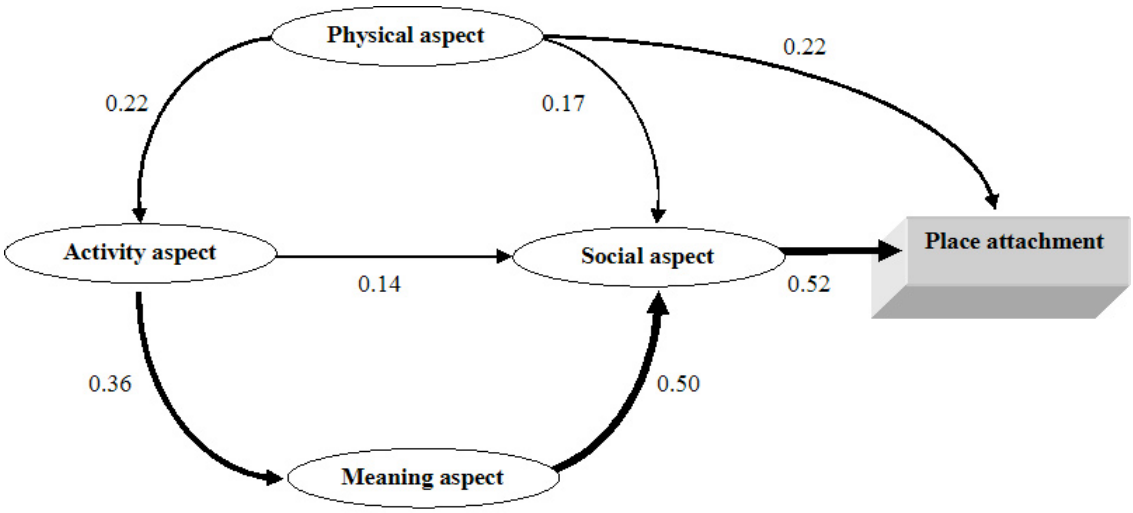

Figure 11. Path analysis results.

Finally, in order to compare the significance of relations between the different the place indicators and the degree of place attachment we applied several regression analyses models. Regarding the result (see figure 10), we can claim that place attachment is strongly affected by social aspects (T=11.680++). Second model of regression analyses (R2= 0/476) shows aesthetics values, variety of activities, social aspect, signs in the place and spent time are the most significant indicators (figure 12). Compared with other indicators, aesthetics value has the highest degree. Also, as it has been shown in the figure 13's table, final regression analyses (R2= 0/420) emphasize on role of aesthetics values as a main indicator affecting place attachment.

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-7.209	3.814		-1.890	.059
	Comfort and Security	.020	.054	.011	.366	.714
	Accessibility	-.300	.196	-.047	-1.533	.126
	Aesthetic values	.614	.054	.362	11.467	.000
	Natural elements	.250	.352	.021	.710	.478
	Amenities and Facilities	.131	.332	.012	.395	.693
	Variety of activities	.796	.238	.107	3.346	.001
	Protecting from activities	.787	.861	.028	.914	.361
	Active in all parts	-2.002	.726	-.081	-2.757	.006
	Presence of groups	-.740	.568	-.038	-1.303	.193
	Active in all times	-.214	.342	-.019	-.627	.531
	Permanent presence	.033	.551	.004	.061	.952
	Social aspect	.927	.096	.380	9.636	.000
	Signs in place	.539	.233	.071	2.310	.021
	Spent time	.787	.311	.180	2.532	.012
	Memories	-.130	.341	-.012	-.382	.703

a. Dependent Variable: Place Attachment

Figure 12. Table of the second model of regression analyses applied for different place indicators.

As it can be seen from the results, users' evaluation about activity dimension has not had significance relation with their attachments to the place (P value>0.05). Therefore, to explain this result; path analysis was applied as well. This analysis illustrated in Figure 2 indicates how these four dimensions interact to each other in relation to the degree of place attachment. It also shows activity dimension impacts on the degree of users' attachment by affecting social and activity dimensions. As it can be seen in figure 2, social aspect that is mostly affected by place meaning; has the highest relation with the attachment degree. Moreover, the result indicates physical dimension not only enhances the degree of user's attachment directly but also influences on social and activity dimensions.

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-11.089	3.050		-3.636	.000
Aesthetic values	.665	.050	.386	13.383	.000
Variety of activities	.901	.226	.122	3.991	.000
Social aspect	.906	.087	.372	10.363	.000
Signs in place	.638	.141	.153	4.524	.000
Spent time	.528	.219	.069	2.417	.016

a. Dependent Variable: Place Attachment

Figure 13. Table of the final model of regression analyses.

Conclusion

Alongside with some existing studies like Eisenhauer et al (2000) and Williams & Stewart's (1998); the results indicate the place carrying meaning for its users leads them to have more attachment to it. These results also indicate users' positive evaluations of the

place physical and activity aspects attach people to the place. In the same way, the study confirms social dimensions of the place are the most important factor increasing place attachment.

In contrast to similar studies, such as Hummon (1992), Moore and Graefe (1994) and Bricker and Kerstetter (2000); the result of regression analysis indicates activity aspect dose not directly effect on the degree of place attachment. However, path analysis confirms that meaning and activity aspects increase users' attachment to place by means of affecting social and meaning aspects. So, we can conclude although social aspect is the most important factor predicting the degree of place attachment it is affected by physical, activity and meaning aspects. To conclude we can summarize the results, which will be discussed in the following.

Firstly, although all aspects of a public space have direct impact on place attachment those aspects have different effect. Physical aspect not only has the significant effect on attachment degree but significant effect on other activity and social aspects as well. However, social aspect that has the most significant impact on attachment degree is affected by other aspects and mainly by activity aspect. This result shows formation of users' attachment depends on the process based on physical potential of space, its activities and time.

Secondly, among different effective indicators of the space: physical (aesthetic values, comfort and security and accessibility), activity (variety of activities, activity satisfaction and permanent use) and meaning (signs, time and memories); three indicators affecting on the users' attachment were aesthetic values, variety of activity and time.

Thirdly, as it can be seen in figure 3, attaching citizens to public spaces by providing different activities, as a key indicator; will be insufficient and some aesthetic consideration should be taken into consideration.

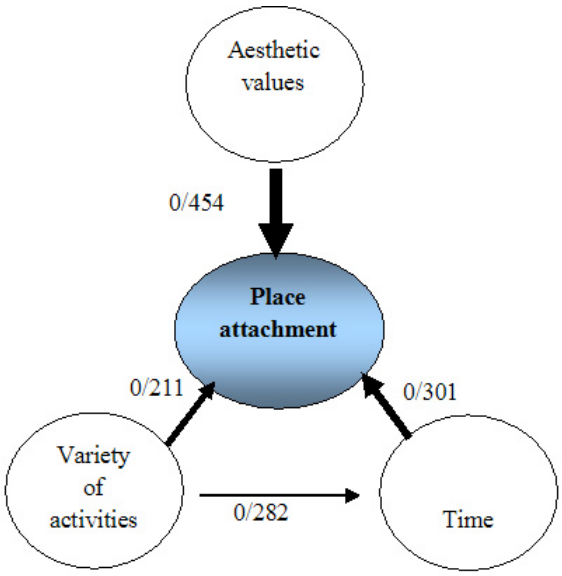

Figure 14. Illustration of the main significant indicators in user's attachment to public space.

To sum up, it can be claimed different kinds of indicators play role to determine attachment degree. Main indicators, aesthetic values and variety of activity; which directly increase users' attachment. Another key indicator is spent time in place, which can intensify

sense of attachment to the place in a process. In this process, aesthetic values invite people to present in the place and variety of activities involve them during time (see Figure 3). This result confirms the similar study like Ariannia and her colleagues, which showed a positive correlation between form and place attachment mediated through visual quality. By formation such process and place potential to protect users' activities they develop positive interaction with the place and some memories are formed. In addition, primary analyses emphasize on some basic design considerations such as: accessibility, signs in the place and comfort and security; which facilitate that process.

Finally, for further studies to control the generalizability of the results; repetition the similar study in different type of urban public spaces and different context (different geographical and cultural situations) is strongly recommended. Furthermore, considering the significance of aesthetics values as a key factor; future studies could more deeply focus on this variable and its different aspects to introduce design guidelines to create the public spaces, which could attach their users successfully.

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