

## **Analyzing the correlation between urban spaces and place attachment Evidence from: Narmak neighborhood in Tehran**

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### **Abstract**

One of the key concerns of urban designers is the influence of urban space on individuals' satisfaction as well as their attachment to a certain place. Thus, neighborhood social spaces with their design appear to be essential features of residential complexes. The current research purposes not only to elaborate on the part of urban spaces, but also attempts to recommend designing measures for residential complexes. Based on existing literature, the research has considered urban space features by taking into consideration Narmak neighborhood in the east of Tehran. Results confirmed the main role of urban spaces in the attachment to neighborhood. Security and tranquility were the two other important conditions for those inhabitants. Based on these outcomes, it is obvious that the physical characteristics have two significant roles in the neighborhood attachment; first, they simplify social activities and make available occasions to progress social attachment and second, improve qualitative design attributes.

**Keywords:** urban space, residential complex, place attachment, Narmak neighborhood

### **Introduction**

Designing high-quality residential environments continues to be one of the leading challenges of urban designers and planners (Lang, 1987, 1994). A concise glance on different experiences, regarding neighborhood environment, shows great efforts and challenges of urban designers in creating meaningful residential areas. As residential environment is really a reasoning behind the existing discussion, it appears to be peoples' attachment for their places of living play crucial role in creating social bonds. In environmental design, familiarity with different size of this concept can lead to more qualitative areas.

Conversely, increasing housing demands inside rapidly expanding cities, specifically in developing countries, accompanying with multi-faceted housing projects i.e. blocks and outdoor spaces of many forms have led to new varieties of residential complexes (Abu Gazzeh, 1999). Throughout these residential complexes, buildings' layouts with different proportions, shape, and urban spaces have meaningful relationships with every other. Put simply, these urban spaces not only unite with building blocks rather provide spaces needed for any residential complex. This definitely seems to be an agent aspect of the problems faced by designers since it has consistently been discovered that when we are relatively dissatisfied because of their estate, their dissatisfaction often relates to your external environmental factors (Department of Environment, 1972a). Even those just who be satisfied with their properties, in a true sense, they may be less happy versus the estate outside their dwellings (Beer, 1982).

One designers consider the outdoor environment of housing projects, they, rather much, focus on space criteria (Department of Environment, 1972b). Comparatively, the sociologically-based studies produce facts as how people use their housing areas and what they already want from their site (Mayer, 1962; Michaelson, 1970, 1976; Fischer, et al., 1977). Nonetheless, the

consequence of those researches appears to get a slight effect on the fact that a design judgment is being pulled in.

Then is apparently a communication gap between researchers and urban designers. Likewise, literature on public housing comes to dealing inadequately while using external environment of housing areas (Cooper Marcus, 1982). Empirical reports have demonstrated that people study the land outside their houses in the household environment (Canter & Walker, 1980; Canter 1983, Abu Gazzeh, 1999). Consequently, the current research specially aims to find out the objective of neighborhood urban spaces in forming place attachment together with recommending design criteria for urban designers in forming high-quality neighborhoods. The hypothesis, i.e. Neighborhood open space features an essential role in creating place attachment, continues to be tested by taking Narmak Township from city of Tehran as a case study.

### **Literature Review**

Diversity of approaches and terms working at theoretical and empirical researches has become the main difficulties researchers encounter while handling the investigation on place attachment. In other language, researchers encounter many similar notions along with the term through their studies like community attachment (Kasarda & Janowitz, 1974), communal feeling (Sarason, 1974), place attachment (Gerson et al., 1977), place identity (Proshansky, et al., 1983), place dependence, a sense of place (Hummon, 1992), and many others. The method of place is a concern that attracts researchers from a variety of reasons (Hernandez et al., 2007; Hidalgo & Hernandez, 2001; Gustafson, 2001; Ryan, 2005). Making use of Relph and Canter's contrastive analysis, Gustafson (2001) created a 3-dimensional; conceptual and theoretical framework, including Person, Others and Environment as elements in creating this is of your place. To put it differently, the area attachment is a concept which draws on interaction and relationship among people, others along with the environment. This theoretical model has involved many urban designers and ecological scholars (Kaplan et al., 2008; Mazumdar, 2005). So that you can investigate more, the area attachment has become reviewed from two viewpoints: phenomenological (Carmona, 2006) and environmental psychology (Canter, 1977a; 1977b).

### **Approach**

From phenomenological view, the place attachment is a psychological bond between individuals and a specific place which gets embedded in due course (Relph, 1976; Tuan, 1974). Relph, as a phenomenologist, suggested three main aspects of place i.e. physical setting, activities, and Topophilia (Relph, 1976). Moreover, he highlighted the spirit of place as a connection another principal element, and suggested places as “essentially centers of meaning constructed out of lived-experience” (Carmona, 2006, 97). Based on his idea, imbuing places with meaning, individuals, groups and societies convert from spaces to places (Carmona, 2006, 97). The sense of belonging or attachment is actually a step to the concept of place. Tuan (1974) entitled these feelings as “Topophilia”, and named it the emotional bond between person and place.

The concept of place, frequently, emphasizes on the feeling of belonging or emotional attachment because individuals require to create a relationship with particular places (Carmona, 2006, 97). Relph (1976) stated the sense of belonging in physical situation is a dialect between inside and outside. This concept is achieved in scheming physical environments or distinctness and sense of moving into a designated area (Carmona, 2006, 97). Confined and legible spaces would be the other features which have emotional impact on human perceptions.

Norberg-Schulz, a phenomenologist architect, explored the role of design in generating existential places (Norberg-Schulz, 1980) hence; showed following three elements in making those places (Norberg-Schulz, 1985):

- Morphology: deals with the way of arrangement and layout, and inside and outside unity.
- Topology: deals with spatial planning through designer's focus on order and environmental characteristics. In addition, it handles adjacency, approach routes, centralism, etc.
- Typology: deals with conceptual and meaningful part of places and space and means habitation or existence creating from the nature of human beings.

#### ***Place attachment and environmental psychology***

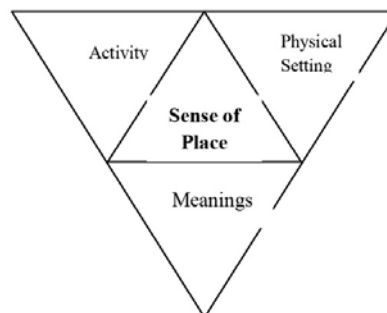
'Place' is often a rich mental concept, that was ignored practically in the psychological literature until 1970s. Canter (1974), an environmental psychologist, named the place just as one experiential unity which refers to a particular physical situation and it has three primary ingredients: activities, conceptual evaluations, and physical properties (Canter, 1986, 9). From his point of view, the area is the result of interaction between these three components. Groat (1984) also clarified that the concept defined by Canter, may attend to integrate both the phenomenological and empirical approaches in environmental psychology.

It can be supposed that perception, cognition and affect are actually principle bio-psychological ingredients of environmental meaning that was conceptualized as either place preference (Porteous, 1996; Ryan, 2000), place symbolism (Rapoport, 1990), place knowledge (Lynch, 1981) or place attachment (Gustafson, 2001; Ryan, 2000). Their place preference and the place knowledge provide cognitive approaches whereas the area symbolism will be based upon cultural attachment to a place.

Depending on Relph's and Canter's ideas, Punter (1991) and Montgomery (1998) located the components in the sense of place in the field of urban design (Carmona, 2006, 98). They in the model people's imagination and concept rather than meaning and as such; suggested factors, including environmental legibility, cultural interaction and perceptual are the principals in shaping the best place attachment (Carmona, 2006).

#### ***Constituent elements of place in neighborhood urban spaces***

In order to survey the suggested site design, including customized for specific cultures of the residential building inside Narmak neighborhood in city of Tehran and the actual way it affects the social interaction among individuals, one specific aspect for example the built environment i.e. environment of the residential building or urban spaces happen to be considered in detail. To that end, the constituent aspects of open space with this neighborhood are thought in line with the sense place (Fig 1).



**Figure 1. Diagram of sense of place proposed by Punter and Montgomery. source: (Carmona, 2006, 99)**

#### ***Physical setting***

Urban spaces along with their physical attributes have often been motivating subjects for urban researchers and designers (Bonaiuto et al., 1999, 2003, 2006; Abu Ghazze, 1999, 1996). According to Norberg-Schulz's model, Table 1 embodies the physical establishing neighborhood

urban spaces. Consequently, four elements of physical setting are determined as: building architecture (BA) including aesthetic aspect, density and amount of buildings; extent of open space (EOS) including shape, form and arrangement of buildings; connection (C) including external and internal, and; green area (GA) including style of plants used.

#### **Activities**

Open-air activities in residential zones are influenced by a number of factors. One of those may be the physical environment that affects the activities to varying amounts and in different ways. Many scholars, designers and sociologists have endeavor to study the activities in residential centers (Krupat, 1980; Cooper Marcus, 1984; Lyon, 1987; Davis, 1991; Katz, 1994; Lawson, 2001, 2-3; Alexander, et al., 1977).

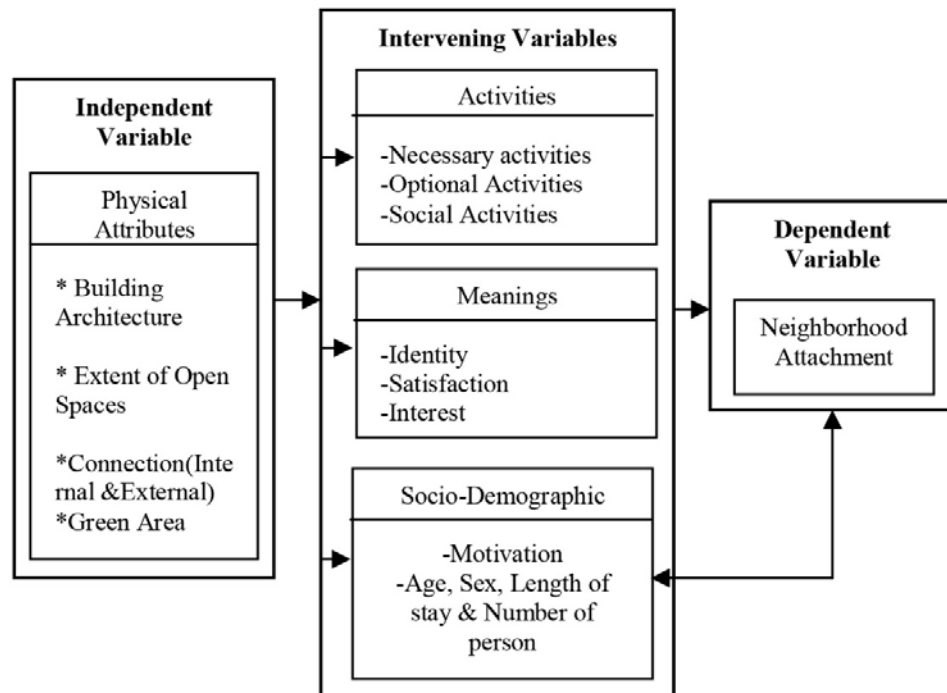
As outlined by Gehl (1987), open-air activities in public areas, is often split into three sets of necessary activities, optional activities, and social activities as each of them exerting different demand to the physical environment. Necessary activities reference functional application, optional activities reference recreational interaction and social ones reference environmental interaction which does not have any determined specific space and is now in lifestyle of neighborhoods; it is considered as a type of passive experience of human-environment life. Within the last two full decades, scientific study has aimed to investigate different activities, although, they have up to now failed to determine the priority of activities according to the neighboring attachment.

#### **Materials and Methods**

Narmak neighborhood is positioned over the eastern flank of Tehran city. The district includes multiple-family housing, a government entity, to the main advantage of middle-income groups. About 100000 people reside in Narmak neighborhood comprising about 8,400 housing units. A questionnaire including all variables was prepared and distributed randomly among the common people samples. Each given question consisted with four multiple choice answers including totally accept totally disagree. The interviews were completed individually while in the lobby for each block. As long as socio-demographic questions or personal attributes like age, sex, and number of people in a very family and time period of residence in any nearby - as intervening variables are concerned, we were holding asked completely the participants and mentioned on the top of the questionnaires. Table 1 shows the personal attribute's mean in survey population. Spearman coefficient analysis is used to analyze relationships. The model of this research is illustrated in figure 2.

**Table 1. Participants attributes**

Variables	Groups	Frequency	Percent
Number of questionnaires	Completed questionnaires	310	93.4
	Incomplete questionnaires	22	6.6
Sex	Man	171	55.2
	Woman	139	44.8
Age groups	18-28	71	22.9
	29-39	93	30
	40-50	82	26.4
	51-62	64	20.6
Length of residence	1-10 years	53	17.1
	10-20 years	211	68.1
	20-30 years	46	14.8



**Figure 2. Research Model based on literature review**

## Results

A descriptive data analysis indicates residents' high attachment on their own living place (Table 2) along with interest in neighborhood. The lower rate of social identity relates for the diversity of inhabitants settled there. Amongst residential variables, it can be seen a significant direct relation between level of residence and neighborhood attachment (Table 5) hence, any nearby attachment tends to boost with an increase in the capability of residence. Other socio-demographic variables including, age, sex, level of people in a family, didn't have noteworthy direct relation with the attachment. Consequences demonstrate those who are pleased utilizing their position have sense of belonging to the shared and social space in the neighborhood, as well. It really is been specifically showed in the past researches on urban spaces (Abu Ghazze, 1999; Department of Environment, 1972b; Beer, 1982). It signifies that individuals who express their attachment to the neighborhood, similarly, expressed their attachment on their local urban spaces. The Spearman coefficient analysis proves that outdoors spaces have a significant role in forming neighborhood attachment (RS = 51.1%).

**Table 2. results of inhabitant's responses to place attachment factors (max=4, min=1)**

Narmak Neighborhood Attachment	
Neighborhood Interest	3.53
Neighborhood Satisfaction	2.65
Social Identity	2.71
Neighborhood Attachment	3.51

Making use of the model suggested by Punter and Montgomery, the analysis of outcomes demonstrate a significant relationship between three aspects of urban spaces, namely, physical setting, activities and meaning (Table 3). These outcomes are in relation with Relph's and Canter's idea on place elements and value of meaning in place. One of many given three components, the meaning of urban spaces discovered to be crucial in creating place, which conversely emphasizes on Relph's model that places are fundamentally centers of meaning built out from lived-experience (Carmona, 2006, 97). The value of meaning, as evident in these results, demonstrates that neighborhood open spaces, from viewpoint of inhabitants, should be saturated with senses of quietness and security. Put simply, quietness and security in neighborhood urban spaces are the most powerful factors of residential district. Results demonstrate that the meanings can be achieved through design attributes.

Analyses demonstrate that the capability to see the designed landscape and urban spaces from the inside the residential blocks and illuminating urban spaces during the night are the key factors in making feeling of security. In regards to the quietness, keeping inhabitants from the crowding in the neighborhood district or on green spaces are critical factors in eliminating noise. Furthermore, there are noteworthy relationships between urban design attributes and activities. Table 6 indicates the correlation coefficient between the above three aspects of urban spaces. It demonstrates that activities are the top aspect in creating meaning. This finding also emphasizes Canter's idea about the necessity of activities constantly in place (Canter, 1986), which has been proved by other scholars (Sime, 1995; Abu Gazzeh, 1999).

**Table 3. Correlation between three urban place elements**

Place Constituent's elements	Architectural design attributes	Activities	Meanings
Architectural design attributes	-	S=0/569** s=0/000	S=0/625** s=0/000
Activities	S=0/569** s=0/000	-	S=0/684** s=0/000
Meanings	S=0/625** s=0/000	S=0/684** s=0/000	-

Table 4 displays the correlation among activities and place meanings with interest, satisfaction, social identity and neighborhood attachment. Final results have indicated the notable role of architectural design attributes and activities in increasing neighborhood attachment.

**Table 4. Correlation among Activities and Meaning with urban places' factors**

Place factors for place attachment	Activities	Meanings
Neighborhood Interest	S=0/480** s=0/000	S=0/444** s=0/000
Neighborhood Satisfaction	S=0/552** s=0/000	S=0/519** s=0/000
Social Identity	S=0/381** s=0/000	S=0/281* s=0/000
Neighborhood Attachment	S=0/570** s=0/000	S=0/520** s=0/000

Table 5 shows relations of architectural design variables (BA, EOS, C, GA), with interest, satisfaction, social identity and neighborhood attachment. It is observed that all of physical design variables have important correlation with neighborhood attachment factors. Among design variables, building architecture (BA) using its density, volume and wonder and extent of open space (EOS) with shape, form and arrangement of creating have the highest correlation coefficient with neighborhood attachment. From the viewpoint of inhabitants, the variables like building architecture (especially its aesthetic aspect) and also the extent of shared open spaces (including its defined spaces and distinguished areas) have the most efficient roles in making the place attachment.

**Table 5: Relationship between Architectural attributes and neighborhood meanings**

Place factors for place attachment	Architectural Attributes in Neighborhood Open spaces			
	Building Architecture	Extent of Open paces	Connection	Green Area
Neighborhood Interest	S=0/526** s=0/00	S=0/473** s=0/00	S=0/311** s=0/00	S=0/239* s=0/003
Neighborhood Satisfaction	S=0/561** s=0/00	S=0/457** s=0/00	S=0/382** s=0/00	S=0/291** s=0/00
Social Identity	S=0/389** s=0/00	S=0/302** s=0/00	S=0/141* s=0/041	S=0/164* s=0/020
Neighborhood Attachment	S=0/591** s=0/00	S=0/509** s=0/00	S=0/383** s=0/00	S=0/273** s=0/00

The discussion emphasizes on the need of considering inhabitants' views on building architecture (BA). Researches, conversely, show differences between dwellers' aesthetic criteria with those of designers' ideas (Gifoord, 2002). Therefore, it can be stated that knowing residents' aesthetic points with according to form, color, shape, scale and extent of buildings could possibly be valuable in designing urban spaces in neighborhoods.

Disobediently, extent of open space (EOS) represents the second importance on the list of effective variables. As presented in Table 5, there is a noteworthy correlation between place meanings and EOS. The investigation on this variable reveals that dwellers tend to reside in places that are easily perceptible. Simultaneously, they prefer the confined and legible urban spaces which give them a sense belonging and the authority of controlling these places. The outcomes of proposed study demonstrate that residents have developed a sense of private and semi-private urban spaces available for their residential complexes. Consequently, creating more private and semiprivate urban spaces in each block with confined and legible corridor will be a great way to develop the neighborhood attachment.

Regarding the third design variable i.e. connection (C), the outcomes shows a substantial correlation between this variable and place attachment (Table 5). Considering internal and external connections, the effects accord more importance to the inner connection. Simplicity of link with the neighborhood was the most crucial issues for residents.

Security of internal streets was the difficulty that showed an extremely significant correlation with the neighborhood attachment. A different variable i.e. green area (GA) although is a substantial but has lower correlation with place attachment. It is discovered that green areas could have effect on neighborhood attachment by making more private spaces.

### Conclusion

The correlation of people and their living environment is the result of multifaceted interactions among culture, physical environment, activities and perception factors. Physical

characteristics of a neighborhood unit regularly impact on the people's feelings in the direction of the surrounding area. The results of the current research demonstrate the main role of neighborhood spaces in making sense of belonging to the place. Dwellers have been satisfied and attached to open spaces and have expressed their sense of attachment to Narmak neighborhood.

In that way, planning urban spaces by focusing on architectural attributes, apparently affect the place attachment. Working with model proposed by Punter (1991) and Montgomery (1998), outcomes indicate the significance of meaning in neighborhood spaces match up against other place constituents (activity and physical setting). Consequently, people prefer secure and safe urban spaces at residential complexes hence; design attributes found to play essential role with this regard. In accordance with the findings, for inhabitants, a chance to see landscape and designed urban spaces from inside of the residential blocks and illuminating those through the night and using green areas have been realized to be key factors for making place attachment to the neighborhoods. Moreover, results established that activities have more operational and effective role in generating neighborhood attachment, compare to architectural attributes. What converts a space to a place for people is its mixing with large variety of activities.

Among socio-demographic and inhabited factors for instance age, sex, length of residence and number family members, the most influential predictor with the place attachment was the duration of residence. It established that place attachment tends to improve using the enhancing length of residence.

In spite of general criteria in planning of residential centers, findings on the current research demonstrate two functions for neighborhood spaces, relating to creating place attachment.

1. Physical role: From this perspective, building architecture design (including aesthetic, density, materials, forms, and volume aspects) as well as the extent of urban spaces have important role in making place attachment. In this regard, considering residents' aesthetic principles is vital and essential in designing building blocks. In other words, designers should take peoples aesthetical inclinations into account. This dilemma is emphasized on especially in public places like neighborhood urban spaces. Among architectural design factors, and density of buildings, compared to their aesthetic aspect, have little relationship with place attachment. The extent of open spaces, by considering its distinctiveness from the district, is yet another significant factor. Legible urban spaces including legible buildings and streets are the following predictor of place attachment. Confined and distinct particular districts in urban spaces, with inhabitants' outright control on them, make it easier to empower them to socialize and progress social attachment.

2. Facilitating activities: Urban spaces facilitate the fulfillment of inhabitants' needs including physical and social ones. Findings demonstrate that social activities are more effective in creating neighborhood attachment. It indicates peoples' activities in urban spaces increase the opportunity of social contacts, basically referred to as passive contact, which provides person a way to establish social bond.

The price of diversity in activities in design of urban spaces lies rolling around in its potential in providing individuals with experiences. Such diverse activities create numerous opportunities for people to connect to other lots. Despite the opportunity of conflict, this phenomenon can empathy and understanding. The spatial and visual patterns of spaces may be designed between residential buildings allow and encourage residents to behave in ways which improve the perceived quality of neighborhood. By a similar token, the physical environment can facilitate the occurrence of activities and events that support and improve the well-being of residents. Another role of physical design, as previously mentioned, is creating confined and distinct areas. The extension of occasions for outdoor stays where everyday activities occur, is predicted to manufacture a valuable contribution to inhabitants' satisfaction.



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