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Original Research Article

An Analysis of Influential Factors in Developing a Sense of Place Attachment (Case Study: Tajrish Bazaar)*

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Abstract

Problem statement: Today, the lack of attention to the human and place components and the dependence of the life of contemporary commercial centers on economic conditions have caused the following issues: a decrease in individual presence, the lack of customer loyalty, loss of place attachment, and absence of people in shopping centers; which adversely influenced the continuity of these urban centers. Therefore, identifying and discovering those factors that improve attachment to bazaar space can contribute to improving emotional and spiritual conditions for urban residents, and increasing the efficiency of commercial centers.

Research objective: This study aims to find the influential factors playing a role in developing a sense of a place attachment to the bazaar and to achieve the relationship between the effective components in the Tajrish Bazaar as the research objective.

Research method: To achieve the goals of the research, a combination of qualitative-quantitative methods was used, and the effectiveness of factors on place attachment was examined through the causal-comparative strategy. Throughout the process, the theories on place attachment and factors affecting this sense of dependency were first gathered through document-based and bibliographic research methods. Next, relying on the results of the content analysis, the conceptual model of the research was proposed. According to the data obtained from the qualitative phase, a questionnaire developed by the researcher was distributed among the participants including shopkeepers, customers, and passers-by in Tajrish Bazaar. The data was then analyzed through the statistical tests of SPSS 26.

Conclusion: The results revealed that place, human, and time components are among those influential components in creating a sense of place attachment, and there was a significant relationship between these factors and place attachment. The data analyses showed that, among the place components, the place physical factors, and, among the human components, the perceptual factors were the most effective ones in creating a sense of attachment to the bazaar. Memorability and identity were among the perceptual factors that had the most significant relationship with the place and among the place physical factors, accessibility with the highest effect, and form and structure accordingly were the next significant factors.

Keywords: *Place attachment, Human factors, Place factors, Bazaar, Tajrish Bazaar.*

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Introduction & problem statement

Individuals' need for having behavioral, cognitive, and emotional interaction with their place of residence, known as 'place attachment', is one of the most significant components of the relationship between human and place, which is required to be considered by urban planners, architects and designers. The concept of attachment in research, in the field of human-place relationship, was not widely evaluated until the 1970s; however, due to the overdevelopment of cities, and the presence of alienation with the environment due to the domination of modernism, the lack of place attachment in urban spaces has occurred several decades ago; so, a series of research studies were conducted focusing on the individual's relation with the place and his sense toward it (Manzo & Devine-Wright, 2014; Raymond, Brown & Weber, 2010; Wirth, GretRegamey, Moser, & Stauffacher, 2016).

The process of place attachment is an interdisciplinary and multidimensional concept that combines different aspects of human communication with a place and encompasses various fields including psychology, environmental psychology, design, sociology, and human communication. The use of these contexts provides a new field of study for researchers with novel theoretical frameworks in the process of place attachment.

To date, different research studies have been carried out to measure the level of place attachment for individuals in different places; the results show that place attachment includes different aspects and forms, including space, human, time, and individual components, with different references by various researches. However, reviewing these all components have not been studied simultaneously in a single experiment, as targeted in this study. By the way, the previous researches were adopting either the qualitative or quantitative method and a combination of two was not applied in any research study. Moreover, the place attachment as a major topic has not been specifically addressed in markets; however, the place attachment is a concept that has

a positive and significant effect on both the 'place satisfaction' and the loyalty of the audience, which provides the sense of 'presence', 'permanence' and the 'return of 'audience' here referred as 'attendant' in that specific place. Therefore, considering that the survival of a set of business activities is highly dependent on the customer presence, this study was performed to identify and prioritize the affecting factors on the place attachment in markets/bazaars (case study: Tajrish Bazar); to be able to take an effective step forward in empowering the sense of place attachment relying on the research findings. To achieve this goal, the following questions were set to be answered:

- What factors are effective in creating a sense of attachment in this specific market (Tajrish Bazar as a case study)?
- What is the relationship between the influential components on place attachment in Tajrish Bazaar as a case study?

In the first phase, data gathering was performed by using library resources and the previous research studies on place attachment and the related influencing factors; it followed by doing content analysis to extract the 'research conceptual model'. According to the qualitative results, a questionnaire was prepared and distributed among the statistical population of 'Tajrish Bazar'. In the quantitative part, the data obtained from the questionnaire were analyzed using 'SPSS 26 statistical analysis'.

Research background

Considering the significance of place attachment and the influencing factors, there are various resources available. However, regarding the question and purpose of this article, the target resources that have identified and examined the effective components have been considered here as follows:

Riley (1992) believes that place attachment is considered as part of individual experience that arises from the connections have made in that specific place and relation with the past memories.

The factors such as the acquaintance time or the

length of residency in that place, the person's perception of the place, their satisfaction with the quality, the place security, and the factor of time, all are effective in creating an emotional mutual relation between the person and the place, which results in a sense of security, contemplation and the effort to preserve and improve the place (Mesch & Manor, 1998). 'Hashas' has classified the effective factors into two categories of 'objective' and 'subjective', and believes that the quiddity of objective aspect is derived from the physical characteristics, while the subjective one results from the thinking and feeling of individuals in relation to the physical environment (Hashas, 2004).

Several research studies in this field, have shown the effect of multiple factors on the occurrence of space attachment including the physical factors (Marcus & Sarkissian, 1986; Green, 1991), experiences and memories (Gifford, 2002; Tuan, 1974), time factor (Bonaiuto, Aiello, Perugini, Bonnes & Ercolani, 1999; Rohe & Stegman, 1994), individual, social and cultural factors (Low & Altman, 1992; Oswald & Wahl; 2001), interactive and activity factors (Low & Altman, 1992), The research carried out by 'Raymond, Brown and Weber (2010) shows the existence of environmental, individual, and social dependencies or attachment among the inhabitants of a residential region. Human beings have attachments to the physical, natural, social, and public dimensions of a place.

According to Taylor, Gottfredson, and Brower (1985), social attachment (local and indigenous dependencies) and physical attachment (the duration of acquaintance with the place) affect creating a sense of place attachment. According to Low and Altman (1992), place attachment has different aspects including space identity, originality, and long-run residence, social feeling, environmental visualization, the social concept of place, and the internalization of that place. Charkhchian (2009) in his doctoral dissertation entitled: 'An Analytical Study of Factors Affecting Increased

Attachment to Public Spaces of the City with Emphasis on Activity Diversity' studied the effect of human and place factors on the degree of place attachment in Qazvin urban environment, followed by reviewing the visual aspects of the place and its various application in his study.

The result of a research study by 'Heidari, Motalebi and Moradian' (2018), showed that the degree of place attachment for the residents of Shiraz who were following different levels of place attachment, as for places of 'home', 'region' and 'city' it was declining from high to low accordingly. Sajjadzadeh (2013), to study the effect of place attachment in the formation of identity in urban squares examined the role of 'semantic', 'functional' and 'emotional' elements in the 'Tomb square' (Meydan-e Aramgah) in the city of Hamadan. The results of his study showed that these elements play an important role in creating identity and attachment to urban squares with establishing a direct relation.

As mentioned earlier, numerous studies have been conducted around the world to identify the components of place attachment and evaluate the effectiveness of each factor. It is obvious that the quality of different physical, social, functional, perceptual, and temporal components all together play a significant role in the formation of attachment to different places, which has not been considered much in the above-mentioned studies. Therefore, the different approach of this study is meant to evaluate the effectiveness of each component, and to address their contribution in place attachment for visitors in Tajrish Bazaar in Tehran. In this study, in addition to measuring the direct effect of these physical, social, functional, perceptual, and temporal components on the intensity of place attachment, the evaluation of their indirect impact on Tajrish Bazar is also examined. It should be noted that the distinct point of this study compared to the other internal and abroad researches is the study of place attachment

in the market space, as the previous related research studies were mostly conducted in the residential areas.

Literature review

• Definition of place attachment

Place attachment is one of the most important aspects of the relationship between human and his place, which should be considered by urban planners, architects, and designers. This concept has been addressed in several disciplines and a broad range of definitions has been offered for it. In most cases, there is a consensus among researchers on the conceptualization of place attachment as a multidimensional construct (Halpenny, 2010; Hidalgo & Hernandez, 2001; Scannell & Gifford, 2010). According to Shamai, the relationship between human being and place is classified into seven layers (indifference to place, awareness of being in a location, belonging to a place, place attachment, union with the goals of the place, presence in the place, and sacrifice for the place), which place attachment as the most important of them comprises the functional and emotional connection between human and the place (Shamai, 1991, 347-358). In fact, place attachment is a dimension of the 'sense of place' (Stedman, 2003, 5), that strongly connects the individuals and their meaningful environments like the chain links (Low & Altman, 1992, 132). According to 'Stedman', place attachment connects a person sensually to a place and subsequently creates a positive experience of that place in the mind of the person.

In fact, place attachment is formed by emotional meanings and a common cultural sense that is induced by people in a particular place and makes the basis for people's perception of the place and the way they connect to it (ibid., 171).

In other words, the sense of place attachment is created by functional, emotional, and cognitive connections between individual and place over time, as the greater the extent of this connection, the deeper the sense of attachment to the place

(Daneshpour, Sepehri Moqaddam & Charkhchian, 2009, 45). According to 'Parmel and Rubinstein', the process of place attachment transforms space into a place for a person, and in this progression, they are individuals who give meaning and identity to the place (Rubinstein & Parmelee, 1992). Bonaiuto et al. believe that place attachment is the result of a person's emotional encounter with a particular place, as he/she makes part of the place identity; this happening is formed during the social and psychological interactions between the person and the place which creates a sense of interest in that place (Bonaiuto et al., 1999, 332).

According to the literature review, there are various approaches in relation to place attachment. The wide range of related words to this sense of attachment brings a kind of conceptual complexity; so here an attempt has been made to explain and clarify more dimensions of this sense of place attachment by recognizing the effective factors which are involved in this sense.

• Factors affecting place attachment

Numerous research studies have been performed to identify the influential factors on the formation of place attachment, including the physical (Marcus & Sarkissian, 1986), cultural (Low & Altman, 1992), and social components (Cohen & Shinar, 1985) in this regard. According to the literature review in this field, the influential factors on the formation and improvement of place attachment can be classified in different ways, which are partially discussed here. According to many studies, various factors are involved in the constitution of space attachment. Fried and Marris, believe that social factors have a significant role in the formation of place attachment (Fried, 1963; Marris, 2003). In another study, Bonaiuto and Stedman believe physical factors play a significant role in the formation of space attachment (Bonaiuto, Fornara & Bonnes, 2002; Stedman, 2003).

According to Low, Altman, and Relph, the activity factors of place also play an effective role in creating a sensory connection with a place (Low & Altman,

1992; Relph, 1976) according to Riley, the semantic factors of place are also effective in creating place attachment (Riley, 1992). In Tuan's view, individual and human factors are effective in creating place attachment (Tuan, 1977), as the degree of attachment varies from person to person (Riley, 1992). Bonaiuto and Relph believe the length of time is effective in creating and promoting emotional attachment to a place (Relph, 1976; Bonaiuto et al., 1999). By reviewing various researches on place attachment, the factors influencing its formation can be categorized as follows:

- Place components

The place components of place attachment are divided into two groups: 1. physical factors and 2. functional-activity factors.

Physical Factors: Many researchers have pointed to the role of physical components as one of the influential factors in the formation of place attachment, and believe it is a necessary factor in the category of physical dimensions. Riger and Lavarkas, in their studies, point to the essential role of physical attachment and believe that in this process, the people usually reminisce the place in connection with its physical elements (Riger & Lavarkas, 1981). Stedman, in his research, refers to the importance of the place physical factors in the formation of place satisfaction in a direct way and the place attachment in an indirect way (Eisenhauer, Krannich & Blahan, 2000). If the human expectations and needs in a place are fulfilled, the level of place satisfaction will increase and the possibility of creating an emotional connection with the place will strengthen (Cohen & Shinar, 1985).

The suitable place of location in the city, the way it communicates with the environment, the availability of services and facilities, comfort situation, ease of location, and other features are among the significant factors in reaching place satisfaction (Regnier & Pynoos, 1987). According to Cantril, the natural factors and visual quality of

place have a great effect on the formation of place attachment (Cantril, 1998). The participation of people in shaping the place and the possibility of changing it due to its flexibility increase the satisfaction, the formation of interactions between human and place and creating a feeling of peace in the place that ultimately leads to place attachment (Rivlin, 1987).

According to 'Bonaiuto et al.', the position of place in its context, the way it relates to the environment, and the access way to services and facilities are those important factors in the formation of place attachment (Bonaiuto, Fornara & Bonnes, 2002).

Functional factors: These factors can enhance the place quality by fulfilling the user needs and the individual goals (Stokols & Shumaker, 1981). The existing activity patterns and the access way to places are among the important factors (Williams & Wask, 2003).

According to research findings, performing activities in relation to a place, their multiplicity, and the continuity of time-related activities in relation to the place, increase people's sense of place attachment. This increases the level of individual participation in activities, and their presence continuity in that place. Moreover, the interactions and activities between human and his place, give meaning to the place and strengthen the place attachment (Low & Altman, 1992).

- Human components

Social factors: According to 'Marris', attachment to people is the basis for the creation of a sense of place attachment (Marris, 2003). Social connections give meaning to the place and provide a context for this attachment (Fried, 1963). The sense of personalizing a place and the role of privacy are other influential factors in creating place attachment (Rapoport, 1982). Having an inner sense of satisfaction with social interactions can create a positive connection between place and people. Moreover, healthy and positive social experiences and relationships, which are created in that place, give a special meaning to it for people. Healthy interactions and communication

between members of the community or collective spaces, and a safe social environment can enhance the sense of place attachment (Marcus, 1992).

Most studies on place attachment have a great focus on social dimensions; it is because people are attached to places that facilitate their social interactions and the formation of their social identity. According to Waldoff (2002), social relations shape places and cause place attachment.

According to 'Altman', there is a strong relationship between time-related changes and place attachment, as by passing time, changes will occur in that place (Pakzad, 2010, 319). According to many research studies, the possibility of having close relationships with residents, and creating dynamic participation in activities, will increase with the duration people live in that place; in a way that these relationships play an effective and positive role in place attachment. In fact, creating a sense of a place is a process, which requires time to be effective (Doh, 2006, 54).

Lalli (1992) believes that place attachment for a person is related to an individual's connection with others and with that place at the same (Twigger-Ross & Uzzell, 1996).

Perceptual factors: According to Riley, individual experiences and memories of a place are effective in shaping place attachment because that place can be a symbol of and part of a person's experience (Riley, 1992). Although place attachment is a dynamic process, part of it is related to memories of prominent events in life (Rubinstein & Parmelee, 1992). Place as a context where social relations and common experiences of individuals occur, is an effective factor in creating a sense of place attachment (Pakzad, 2009). According to research studies, the specific place elements such as symbols and signs, the history of a place, and social dependencies created by a place play important roles in this regard (Lennard & Lennard, 1984). Over time, historical events and symbols are imprinted in people's minds and create special feelings and memories. Therefore, it can be said that the historical main points are a kind of place for traditions and collective memories

of individuals (Habibi, 1999, 20). The connection between the individual and the environment makes sense following the formation of place attachment; as the perceptual components affect the mental and semantic aspects of place attachment through the experience of place (Hidalgo & Hernandez, 2001, 121).

Another important issue is the common culture among individuals and groups in society, which is effective in creating attachment to a particular place (Hummon, 1992). Place attachment is dependent on the individual activities in the cultural field (Low & Altman, 1992, 7).

Individual factors: The level of place attachment varies from person to person (Tuan, 1979, 399). People normally choose places based on their conscious priorities and get attached to that place, as these preferences are arising from their personal characteristics. The individual characteristics of each person have a great influence on the way he/she develop their social relationships and direct their social orientation. (Riley, 1992, 19). Important factors are involved in creating personal characteristics such as the level of education, income, personal definition of life, beliefs, marital status, age, and social class (Bonaiuto et al., 1999; Pretty, Chipuer & Bramston, 2003).

Place attachment occurs at both personal and social levels; at the personal level, the emphasis is on the individual's connection to the place, as place attachment helps an individual to reminiscence memories and create a personal sense of stability (Twigger-Ross & Uzzell, 1996). In studies of Manzo on place experiences, he believes that in addition to place, the experience of place is also important in giving a special meaning to it. Therefore, the place is perceived from an individual perspective due to valuable experiences such as specific points and perceptions (Manzo, 2005, 7).

- Time component

The time factor or duration of residence is one of the factors that increase the feeling of attachment to the place (Bonaiuto et al., 1999). It is a specific factor

in determining the level of place attachment, as in some cases, regardless of other factors, it causes this sense of attachment in both individuals and groups (Relph, 1976). According to 'Low and Altman,' the time factor is an involving element in determining the level and process of place attachment, whether in adults or children (Low & Altman, 1992).

Altman believes that place attachment is strongly related to time variation, as the changes occur over time (Pakzad, 2010, 319). Many researchers believe that the longer a person stays in one place, the more likely they develop close relationships with local people, and form dynamic partnerships; as these relationships have a positive effect on place attachment. In general, the creation of feeling toward a place requires a time-dependent process (Doh, 2006, 54).

• Summarizing the effective factors in creating place attachment

According to the literature review on place attachment, human and place have a mutual effect on each other, as this two-way relationship creates place attachment over time. In creating place attachment, three groups of components are effective; 1. the place component with physical and functional-activity factors, 2. the human component with individual, social and perceptual factors, and 3. the time component.

Introducing a case study (Tajrish Bazaar)

Among the centers where collective behaviors occur, bazaars have a special richness and attractiveness in case of studying environmental behaviors, as they can shape the important territory of our daily life (Shahcheraghi & Bandarabad, 2015). Bazar in traditional cities constitutes the heart of a city and comprises a complete set of economic, cultural, and social activities; however, today the past identity of bazaars is fading for a couple of reasons. Among the leading factors, the irregular and unprincipled development of Iranian cities can be mentioned, especially in ancient cities. On the other hand, following the social and economic changes in Iran

in recent years, significant changes have occurred in the structure of Iran's economic relations, which have given a new appearance to the Iranian trade market; based on this happenings, today's market is confronting with new business centers comprising completely different trade combination compared to their past counterparts (Hashempour, 2005, 32).

In this study, to deal with components that are effective in creating attachment to traditional bazaars and evaluating the effectiveness of each component, Tajrish Bazaar has been selected as a case study. There are two main reasons for this selection: 1-No significant changes have occurred in this market, although it is located in an old region. 2- It is not only known as a trade center but also is a lively social and cultural center, which causes a sense of place attachment for addressed people.

Tajrish Bazaar has a history of 150 years, which has attracted local and foreign tourists, due to the special features such as multiple uses, architectural style, and a sense of liveliness (Documentation and Research Center of the Faculty of Architecture and Urban Planning, Shahid Beheshti University, 1999) (Fig. 1). Tajrish Bazaar, as one of the most important economic centers of Shemiran and North of Tehran, has grounded a special identity for this urban region, specifically as a commercial hub; the Bazaar has been warmly received by a wide range of people in this region (Heidari, Amirhajlou, Karkhaneh & Ahmadifard, 2013, 331). The old bazaar, Tekye Tajrish (the ground religious' urban location), the shrine of 'Imamzadeh Saleh' and local shopping centers are among the spectacular landmarks in the neighborhood of Tajrish. The presence of Imamzadeh Saleh in the central part of Tajrish Bazaar is one of the attraction points in the Bazaar, as the courtyard of Imamzadeh is mostly full of people who spread their votive stuff around the shrine, next to the trees or shades (Fig. 2). The religious mourning ceremonies are usually held in the ancient Tekye of Tajrish, where its lively atmosphere is great. In Timcheh of Tajrish (Timcheh: A roofed section in Iranian Traditional Bazaar) and its related

lines of Bazaar, the “vitality” in the spirit of buyers, passersby, mourners, and mourning ritual groups of Muharram give the spatial characteristics to the place (Fig.3). In addition to moving and pausing, other types of behaviors, such as verbal and nonverbal interactions, emotional reactions, moving with the huge crowds, or the collective look at the ceremony, are not inhibited at all. Mourners shout, laughter and passionate conversation of passersby with their companions or shopkeepers all will dissolve in the crowd and highness of the environment (Tafakkor, Shahcheraghi & Habib, 2020).

The variety of prices and goods in Tajrish Bazaar has attracted many buyers, as different classes of society are present in this place. More importantly, the Bazaar space is not controlled by any other specific groups, as all people are allowed to enter the market, and the Bazaar space is supervised by their shopkeepers.



Fig. 2. Imam Zadeh Saleh Shrine. Photo: Maryam Mojtabavi, 2019



Fig. 1. Tajrish Bazaar. Photo: Maryam Mojtabavi, 2019.



Fig. 3. Tjrish Bazaar. Photo: Maryam Mojtabavi, 2019.

Research method

Considering that this research aims to study the influential factors on place attachment in traditional markets/bazaars, the research method was designed based on two parts: qualitative (content analysis) and quantitative (questionnaire). In the qualitative phase, following the literature review on place attachment, the effective factors were extracted through content analysis, and then the research conceptual model was presented. Next, a questionnaire was designed based on the obtained model and organized into two phases; The first part was comprised of the statistical characteristics of the respondents, and the second part was prepared by using a checklist method consisting of 27 questions (based on the ‘Likert scale’ at five levels) to evaluate the physical, functional, perceptual and social components

affecting place attachment. The validity of the questionnaire was confirmed by five experts in the field of ‘architecture and environmental psychology’ and was distributed in the target statistical community. The research method was summarized in the form of a model as shown in Fig. 4. Due to the uncertainty of the population size, the sample size of 202 people was calculated by the mentioned formula¹. To check the validity and reliability of the questionnaire, first, a pilot experiment was conducted by selecting 30 persons in Tajrish Bazaar (including shopkeepers, customers, and passersby) and then the inadequacies of the questions were eliminated. The questionnaires were distributed one by one, in person for the following reasons, considering the high number and variety of questions: 1. to add validation to the results and responses, and 2. to clarify the ambiguity of the respondents.

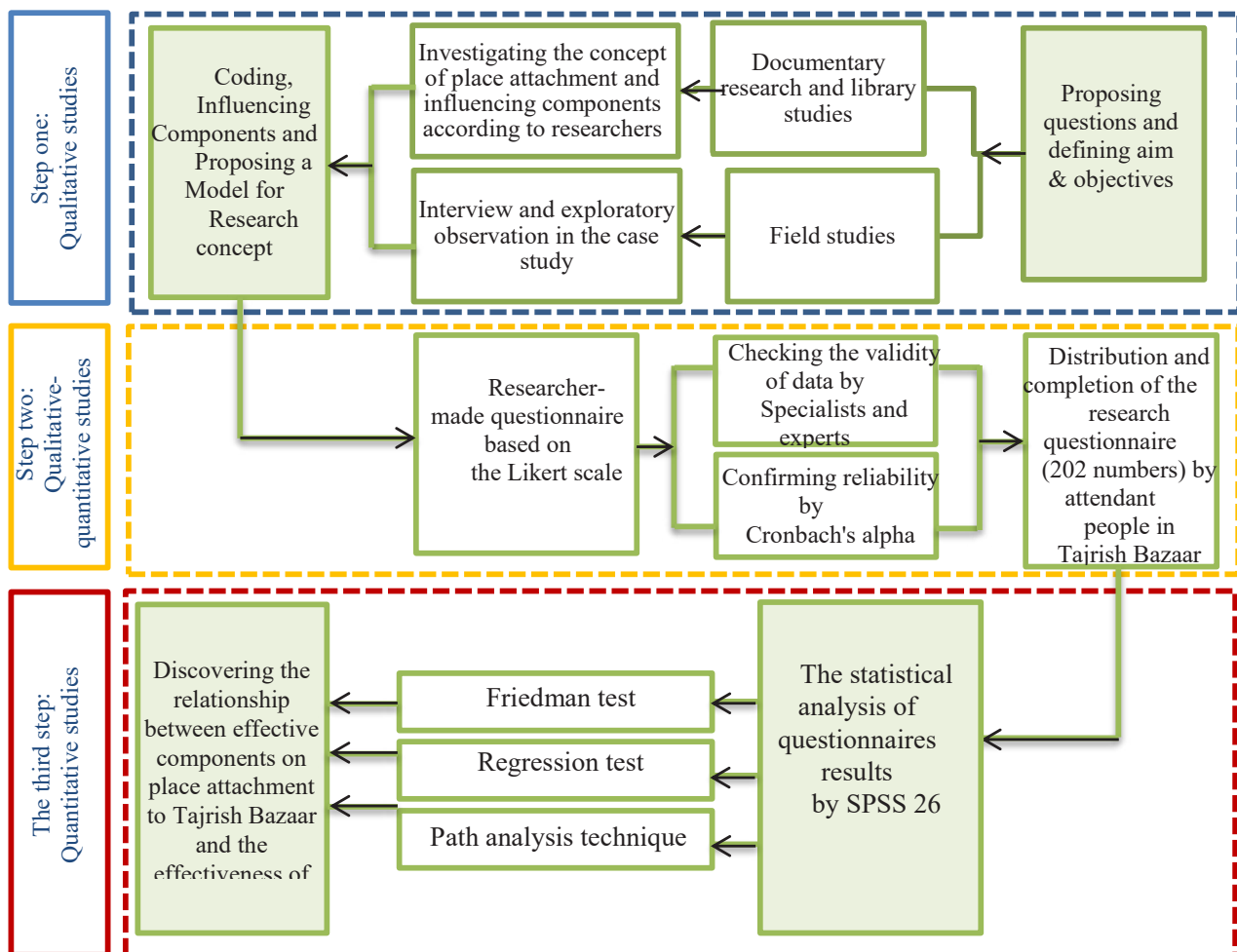


Fig. 4. Research Process. Source: Authors.

The reliability of the questionnaire was assessed by calculating the Cronbach’s alpha coefficient for each component. The numerical value of alpha for all five components of physical, functional, social, perceptual, and time-dependent data was between 0. 7 and 0. 8 (Table 1) which statistically were acceptable. The data obtained from the questionnaire were analyzed using ‘SPSS 26’ and the following statistical tests including Friedman and regression analysis were applied. In this study, the influential factors on place attachment as ‘independent variables’ and place attachment as a ‘dependent variable’ in Tajrish Bazaar were evaluated.

Results

The objectives of this study were to identify the effective factors in creating and promoting a sense of place attachment, in order of priority, generally in markets/bazaars, to discover the relationship between physical, social, functional, perceptual components, and to evaluate the sense of place attachment in the case study. To get these objectives, the following questions were proposed:

- What are the effective factors in creating place attachment in markets?
- What is the relationship between the influential components on place attachment in Tajrish Bazaar as a case study?

Therefore, to answer the research questions, in the first step, by using the qualitative research method, the research background and theoretical foundations were examined and the research conceptual model was proposed. In the quantitative part of the study, following the distribution of the questionnaires and collecting data, the components of the case study were analyzed, and the target statistical methods

were used to analyze the descriptive and deductive statistical data.

• Qualitative data

In the qualitative part, after reviewing the research background, all the extracted concepts from the studies were considered as the codes. Then, based on the content and meaning of the codes, the concepts and components were formed by combining similar codes. Following the literature review, the effective components and indicators were presented. Finally, the following four components were extracted: 1. The place component (with two physical and functional indicators), 2. The human component (with two social and perceptual indicators), 3. The time component, and 4. The individual component (Table 2).

The place attachment is the outcome of human-place interaction over time, as humans and their place are positioned on both sides of this relationship. Relying on the content analysis data, the influential factors in creating place attachment can be categorized as follows: The place factors (a place with its all physical and functional factors), the human factors (a human being with all individual, perceptual and social characteristics), and the time factor are of those effective features in creating place attachment (Fig. 5).

Quantitative data

In this quantitative part, relying on the data extracted from the qualitative part, a researcher-made questionnaire was set based on the Likert scale. After confirming the validity of the research by experts, the questionnaire was distributed among the statistical population including shopkeepers, customers, and passers-by in Tajrish Bazar; the gathered data was then analyzed using SPSS 26 statistical tests. The

Table 1. The reliability coefficient and variables. Source: Authors.

Research variables	Cronbach’s alpha coefficient	Number of Questions
Physical Component	0.724	8
Functional Component	0.703	6
Social Component	0.735	7
Perceptul Component	0.714	6
Temporal Component	0.800	3

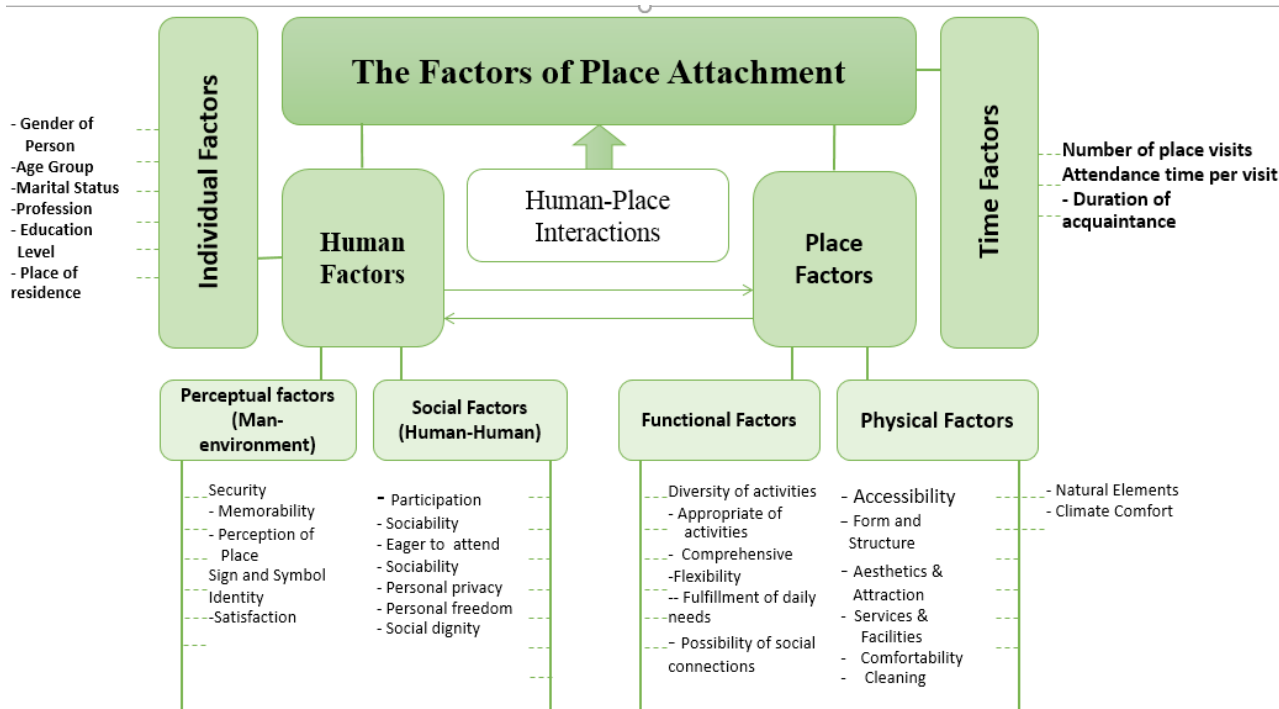


Fig. 5. The place factors affecting the place attachment. Source: Authors.

findings of the quantitative part similarly confirmed the model derived from the qualitative part; the acquired data showed the significant effect of physical, functional, social, perceptual, and temporal components on the dependent variable of place attachment.

- Descriptive statistics analysis

According to the research survey, 61.4% of participants were women and 38.6% were men. Most of them came to Tajrish Bazaar from urban districts 1, 3, 7, 4, and 6 of Tehran, respectively. The percent of the population in using vehicles, to reach Tajrish Bazaar were as follow: forty persons (19.8%) came by bus, ninety-four persons (46.5%) came by subway, twenty-two persons (10.9%) used their private car, twenty-eight (13.9%) reached the place by taxi and fourteen persons (6.9%) walked to the Bazaar. Moreover, the way of their participation in Tajrish Bazaar was as follow: forty-four people (21.8%) came along with their spouse, sixty-six people (32.7%) attended with their friends, forty people (19.8%) came with their family, and fifty-two people (25.7%) came to the Bazaar individually.

- Measuring the level of independent variables

In this study, the K-S (Kolmogorov-Smirnov) test was

used to study the normality of variables; the results indicated that none of the variables had a normal distribution. Therefore, Friedman’s non-parametric test was used to prioritize the indicators and elements. The Friedman test showed the following results: the statistical value of the Chi-square test (X²) was 602/339, degrees of freedom (df) was equal to four (=4) and statistical significance (Asymp. Sig.) or p-value was equal to 0.000. Since the amount of p-value was less than the significance level of 0.05, it was concluded that there was a significant difference between the components in terms of importance level; as to the respondents, the questions were not of equal value and significance (Table 3).

According to the results of the Friedman test, the perceptual, functional, time, physical and social components had the highest average level from high to low, respectively. The effective indicators in each component are also reported as follows: (The results of the Friedman test have been shown in Table 4).

Perceptual components: Among the six indicators of the perceptual component, the order of the indicators is as follows: reminiscence/memorability, identity, symbol, and sign, perceiving the place, satisfaction, and security.

Table 2. Codifying data to extract categories and concepts. Source: Authors.

Components	Indicators	Experts-Code
Place component	Physical Indicator	<ul style="list-style-type: none"> - Accessibility (Regnier & Pynoos, 1987) - Form and structure (Stedman, 2003) - Aesthetics and visual characteristics (Charkhchian, 2009) - Services and facility (Regnier & Pynoos, 1987; Stedman, 2003) <ul style="list-style-type: none"> - Comfort (Hashas, 2004) - Cleanliness (Waxman, 2006) - Climate comfort (Regnier & Pynoos, 1987) - Natural elements (Cantril, 1998; Ghazizadeh, 2011)
	Performance Indicator	<ul style="list-style-type: none"> - Various Activity (Low & Altman, 1992) <ul style="list-style-type: none"> - Proper Activity (ibid.) - Satisfaction of daily requirements (Stokols & Shumaker, 1981; Kyl, Graefe, Manning & Bacon, 2004; Sajjadzadeh, 2013) <ul style="list-style-type: none"> - Flexibility (Rivlin, 1987) - Comprehensive (Low & Altman, 1992) - The possibility of forming a social connection (Tigger- Ross & Uzzel, 1996)
Human component	Perceptual Indicator	<ul style="list-style-type: none"> - Security (Baba & Austin, 1989; Qian, Zhu & Liu, 2011; Scannell & Gifford, 2010) - Reminiscence/memorability (Riley, 1992) (Marcus, 1992; Kyle et al., 2004) <ul style="list-style-type: none"> - Perception of place (Bonaiuto et al., 1999) - Symbols and Signs (Lennard & Lennard, 1984) - Identity (Williams & Vaske, 2003; Low & Altman, 1992; Sajjadzadeh, 2013) - Satisfaction/ Fulfillment (Cohen & Shinar, 1985; Bonaiuto et al., 1999; Kyle et al., 2004)
	Social Indicator	<ul style="list-style-type: none"> - Participation degree (Rivlin, 1987; Lewicka, 2005; Brown & Werner, 1985) <ul style="list-style-type: none"> - Sociability (Marcus, 1992) - Eager to attend (Rosenberg & Hovland, 1960) <ul style="list-style-type: none"> - Sociability (Fried, 1963) - Privacy (Rapoport, 1982) - Personal Freedom (Scannell & Gifford 2010) <ul style="list-style-type: none"> - Social dignity (Breakwell, 1993)
Time component	Time Indicator	<ul style="list-style-type: none"> - Number of visits (Relph, 1976) - Duration of acquaintance (Doh, 2006, 54) - Time of attendance per visit (Low & Altman, 1992)
Individual component	Individual characteristics Indicator	<ul style="list-style-type: none"> - Gender of the person (Bonaiuto et al., 1999) - Age group (Hidalgo & Hernandez, 2001) - Marital status (Pretty, Chipuer & Bramston, 2003) <ul style="list-style-type: none"> - Profession (ibid.) - Education (Bonaiuto et al., 1999) - Place of residence (Tuan, 1977)

Table 3. Friedman test. Source: Authors.

Friedman test	
Number	202
Chi-square (X ²)	339.602
Degrees of freedom (df)	4
Asymp. Sig.	0.000

Functional components: Among the five indicators of the functional component, the indicators of fulfilling the daily requirements, appropriation of activities, diversity of activities, flexibility, the possibility of forming social connections, and being comprehensive, had the greatest impact.

Time components: The priority for three indicators of the time component is as follows: duration of acquaintance, the length of attendance per visit, and the number of visits.

Physical components: The priority for the eight characteristics of the physical components are as

Table 4. The order of priority for the components and indicators in Tajrish Bazaar based on Friedman’s test. Source: Authors.

Components	Average grade	Indicators	Average grade
Perceptual Component	4.03	Memorability	4.42
		Identity	4.15
		Symbols and sign	4.03
		Perception and place imagination	3.23
		Satisfaction	2.83
		Security	2.35
Functional Component	3.63	Satisfaction of daily needs	4.77
		Appropriate activities	4.59
		Variety of activities	4.34
		Flexibility	2.62
		The possibility of forming social connections	2.45
		Comprehensive	2.23
Temporal Component	3.41	Duration of acquaintance	2.28
		Time of Attendance per visit	1.90
		Number of visits	1.82
Physical Component	2.37	Accessibility	6.18
		Form and structure	5.60
		Aesthetic	5.12
		Climate comfort	4.94
		Services and facilities	4.77
		Natural elements	4.17
		Cleaning	3.20
		Comfort/Easiness	2.02
		Social Component	1.55
Social dignity	4.92		
Personal freedom	4.61		
Ability to communicate	3.74		
Privacy	3.49		
Sociability	3.00		
Participation	2.36		

follows: accessibility, form and structure, aesthetic aspect, climatic comfort, services and facilities, natural elements, cleanliness, and easiness.

Social components: The seven effective indicators in the subset of social component, are as follow, in order of importance: desire for presence, social dignity, personal freedom, hospitality, privacy, socializing, and participation.

- Measuring the degree of the direct impact of independent variables on dependent variables

Since, the significance level (sig.) for all five perceptual, functional, temporal, physical, and social components was less than $\alpha = 0.05$ (Table 5). therefore, it was concluded that all five components had a significant effect on the sense of place attachment; the influence of components in order of effectiveness from high to low was as follows: perceptual, temporal, physical, social, and functional components.

- Method of Path Analysis

The experimental model obtained from the path analysis technique has been shown in Fig. 6. According to the diagram, all the components were effective in place attachment to Tajrish Bazaar. Moreover, the physical, functional, and temporal components were considered as independent variables; the social and perceptual components, considered as the ‘middle dependent variable’, and place attachment was known as the ‘final dependent variable’.

According to the regression analysis, the physical component, in addition to having a direct effect, indirectly affected the place attachment of Tajrish Bazaar, relying on the social component with a ‘path coefficient’ of 0.573, and through the perceptual component with a ‘path coefficient’ of 0.175. The time, functional and social components, both directly and indirectly have affected the place attachment to

Table 5. Regression Analysis. Source: Authors.

Component	B	Standard Error (SE)	Beta	T	Sig.
Perceptual	0.331	0.086	0.263	3.867	0.000
Functional	0.278	0.085	0.174	3.282	0.001
Temporal	0.203	0.052	0.224	3.902	0.000
Physical	0.268	0.089	0.199	3.007	0.003
Social	0.200	0.076	0.176	2.631	0.009

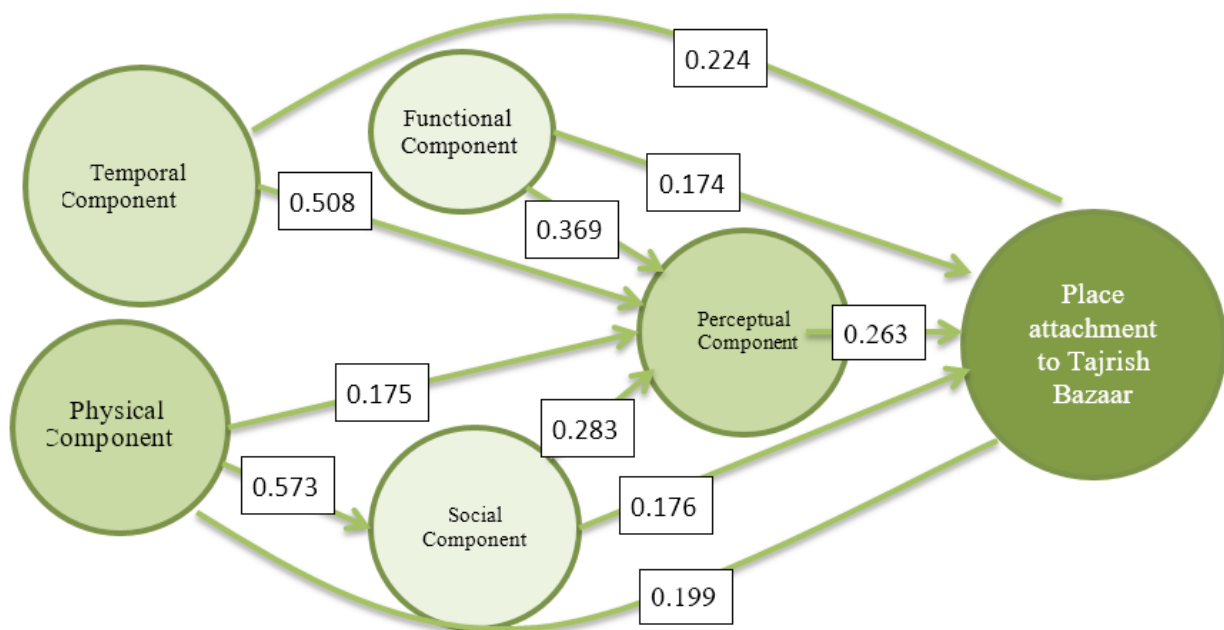


Fig. 6. The experimental model of influencing factors on place attachment in Tajrish Bazaar, using path analysis technique. Source: Authors.

Tajrish Bazaar through the perceptual component (Fig. 6).

The sum of the direct and indirect effects of each independent variable shows a total effect on the dependent variable of place attachment. To obtain this total value, the numerical value of direct and indirect values related to each independent variable were added together. According to the results, the effect of total components, in order of priority, were as follow: physical component, 0.387, temporal component, 0.357, functional component, 0.271, perceptual component, 0.263, and social component with a value of 0.250, had a greater total effect

on place attachment in Tajrish Bazaar (for more information see the Table 6).

Conclusion

As mentioned earlier, place attachment is one of the most significant factors in evaluating the relationship between human and his environment, and in creating a qualified space as well. In fact, place attachment indicates a kind of deep emotional relationship with the place, as, the person feels a kind of identification with it. Referring to the significance of this sense in improving the quality of urban public spaces, including Bazaars/trading centers, in this article, the place attachment to Tajrish Bazaar, and the

Table 6. The Direct and indirect effect of components on place attachment by path analysis. Source: Authors.

Components	Direct Effect	Indirect Effect	Total Effect (direct & indirect)
Perceptual Component	0.263	---	0.263
Functional Component	0.174	0.097	0.271
Temporal Component	0.224	0.133	0.357
Physical Component	0.199	0.100+0.046+0.042	0.387
Social Component	0.176	0.074	0.250

influencing components on it, including the place, human, time, and individual factors have been addressed. The research findings show a significant level of place attachment to this old bazaar. This center has been able to maintain a distinctive identity over time. In this bazaar, the attendants, including (buyers, shopkeepers, and passersby) have had an emotional sense of belonging to this place, and a pleasant feeling of being present in this space, as they preferred this market to the other commercial centers. Therefore, the place attachment model can be used as a way to revitalize and recreate other public places accordingly. The present study showed that in addition to the influence of “place”, “human”, “time”, and “individual” factors in creating a sense of place attachment to the Bazaar, there was also a direct and significant relationship between the other factors as follow: 1. The “physical” and “functional” components of place factors 2. the “social” and “perceptual” components of human factors and the “time” component with a “sense of place attachment” were directly related to the perceptual component. On the other hand, the target components in addition to having a direct effect, also indirectly influence the place attachment. For example, apart from a direct effect, the physical components indirectly promote the place attachment, through the indirect effect on the social, functional, and perceptual components. The results show that all components (physical, functional, social, and temporal components) have an indirect effect on place attachment through the perceptual component, besides having a direct effect. It can be said that perceptions are the outcome of the imprinted messages and implications perceived from the environment triggering the mind of the audience,

and can shape the way people communicate with the place. In the process of perception, an active and mutual relationship is established between the audience and the environment; Therefore, it is considered as a mental, dynamic and purposeful process, which shapes the interactive relationship between human and their environment, and gives meaning to it. Regarding the physical components and their role in attachment to Bazaar, it can be said that the indicators of “accessibility”, “form and structure” and “aesthetic” aspects had an effective role in place attachment. Given the social components and their effect on place attachment, it can be said that the indicators of “desire to attend”, “social dignity” and “personal freedom” are important factors in this kind of attachment. Referring to perceptual attachment, it can also be said that the occurrence of implications and concepts in the environment of Bazaar was highly dependent on both personal and group experiences of individuals, which is strongly influenced by “reminiscence”/memorability, “identity” and “symbols and signs in space”.

Therefore, architects and urban designers are required to consider the set of spatial factors (place with all its physical and functional factors), human characteristics (human beings with his all individual, social, and perceptual characteristics), and those which create a context for different emotions between the person and the place in the public spaces, including markets/bazaars, to pay special attention to them. This issue provides a basis for the growth and qualitative development of markets, as a context for the social life of the attendants.

Finally, since the place, human, and time factors all equally affect the place attachment, there is a future

hypothesis that to measure place attachment, the indirect effects of each component are required to be considered and their direct effects need to be evaluated.

Endenot

$$1. \quad n = \frac{(z_{1-\frac{\alpha}{2}} + \sigma)^2}{d^2}$$

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