

# Factors Influencing the Place Attachment's Users of Social Housing Complexes From the Perspective of Residents (Case Study: Residential Complexes in Districts 3, 7, 9, and 11 of Shiraz City)

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**ABSTRACT:** The present research aims to determine the factors influencing the place attachment users of social housing complexes from the residents' perspective using the content analysis research method. From the research methodology perspective, this research is qualitative research conducted with the help of library and field studies by studying documents related to the topic, taking photographs, and semi-structured interviews with 387 residents of social housing complexes in Shiraz who were selected by random probability method. The interviews, which were in the form of audio and video files, were converted into text and entered into the ATLAS-TI 9 software. After coding and determining the validity of the subcategories, concepts, and codes by ten experts in the design of residential complexes, they were extracted in the form of diagrams. The data coding by subcategories and concepts is also compared with the effective components of designing social housing complexes. It is worth mentioning that the selection of social housing complexes in Shiraz was done by the AHP method with the help of Expert Choice 11 software. The findings revealed that the components related to the place attachment of the residents' social housing complexes based on interviews with their users include social connections, emotional connection with the place, the meanings of the place, and the dark side of the attachment to the place.

**Keywords:** *Place attachment, residential complex, social housing, housing design, social connections, emotional connection, the meanings of the place.*

## INTRODUCTION

Behavioral and cognitive approaches were identified as the most important and widely used psychological approaches in analyzing human-environment relations (Zarei Hajjabadí et al., 2023). One of the important and influential meanings in the relationship between man and the environment, which has also attracted the attention of designers, is "attachment to place" (Pirbabae et al., 2015; Hernández, 2021), which is a multidimensional concept with personal dimensions, psychological and spatial process, is analyzed. Place attachment includes place dependence, place identity, emotional attachment, and social attachment (Irani et al., 2023) that describes the emotional connection that people hold with a physical space, and such bonds are associated with higher levels of life satisfaction, as well as physical and

mental well-being (Lomas et al., 2023).

Unfit interventions will weaken places and the sense of attachment in users (Ujang, 2017). Until now, studies have been conducted in the field of "attachment to place," and experts in various fields of design, psychology, environmental psychology, sociology, and communication have conducted much research and analyzed this relationship's environmental and human aspects (Pirbabae et al., 2015). Among the places with which people are connected, their place of residence and life is considered among the most prominent places that can be examined at various levels, including home, neighborhood, city, and wider levels (Fornara et al., 2019), but until today, there has been little understanding of the formation of the attachment's users of residential spaces; So that this issue has reduced the loyalty, efficiency, and use of

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residential spaces, less than what it should or can be.

Ahmadi et al. (2021) wrote that neglecting the attachment to the place caused the semantic load to decrease in terms of perceptual contexts, values, meanings, and people's dependence on material and spiritual affairs in urban spaces, and this problem caused the audience to fail to receive the message of meanings. There has been a breakdown of place attachment and a reduction of loyalty towards urban spaces, but paying attention to it causes the success of managing and developing urban spaces.

In addition, Hataminejad et al. (2018) have emphasized that strengthening the attachment to the place strengthens the residents' ties with the place and is an important factor for urban planners to improve the quality of human habitation.

The present research aims to determine the factors affecting the attachment to the place of the users' social housing complexes from the perspective of the residents and to determine the most effective components of social housing design on the attachment to the place the residents from their point of view, and has tried to answer the following questions: 1- What are the factors affecting the attachment to the place of the users' social housing complexes from the perspective of the residents? 2- Which of the effective components of the design of social housing, from the point of view of the residents' social housing complexes, causes them to be more attached to their place?

Masoudi rad et al. (2015), in descriptive-analytical research, have concluded that the four indicators of sustainable housing (physical-physical dimensions, social-cultural dimensions, economic dimensions, and environmental dimensions) in the studied sample, in terms of sustainability in all dimensions have been low. In an article with a descriptive-analytical method, Soltani and Varesi (2017) found that in Shiraz City, the residents' satisfaction with social housing for rent with the ownership condition is high in all dimensions and indicators. In research with the correlation method, Kharabati and Yazdanfar (2017) found that human factors, spatial factors, and time factors are influential factors in creating attachment to a place, which has a significant relationship with attachment to a place.

Ghalenoui et al. (2016), in an article with a meta-analysis method, found that "spatial interests," "spatial identity," "social link with the place," and "attachment to place," respectively have the greatest effects on increasing attachment to place. Zarifpour Langeroudi et al. (2020) found in descriptive-analytical research that physical, perceptual-emotional, and functional-activity dimensions have a significant relationship with the concept of place attachment. In an article with a descriptive-analytical method, Casakin et al. (2021) concluded that attachment to a place is related to perception, neighborhood satisfaction, and motivation. In descriptive-analytical research, Cole et al. (2021) have concluded that green design (including biophilic design and creating opportunities to connect with nature.) increases attachment to a place. According to the investigation of the background of the research, it was concluded that so far, research still needs to be done with the title of the present research and its objectives and method, and it deserves to be addressed.

## MATERIALS AND METHODS

From the point of view of research methodology, the present research

is qualitative research with the help of content analysis method with the help of library and field studies, using the study of documents related to the topic, semi-structured interviews with 387 residents of social housing complexes in Shiraz including Eskan, Bo Ali, Esar, Sadaf and Eram (Salman Farsi), which were selected by random probabilistic method, have been done.

First, with the method of collecting information in the form of library studies, with the help of studying the available sources in the subject area, the interview questions have been determined. After conducting the interviews and determining the validity of their coding, the data obtained from the semi-structured interview obtained by the field method were entered into the ATLAS-TI 9 software to produce analytical charts. It should be mentioned that the sample size is determined based on the Cochran formula (when the statistical population is large).

It is worth mentioning that the validity of the subcategories, concepts, and codes was done using the content validity method, which resulted from the agreement of 10 experts in designing residential complexes. To determine the reliability, the formula related to Cohen's kappa coefficient (1960) was used, and its value was obtained with sensitivity up to two decimal places equal to 0.91, which, according to the interpretation of different levels of the kappa coefficient, if the obtained coefficient is between 0.81 To be reported as 1.00 means almost complete.

It should be mentioned that the specified codes have been compared and analyzed with the design components of the social housing complex. The typology of consciousness (knowledge of the body of experience) and insight (knowledge combined with experience) differ. A person has idea of an urban artifact differs from someone who lives in the same urban artefact.

In place, there is a kind of experience that is only comprehensible to people who have walked through a particular building, street, or area (Connerton, 2009, 32). In phenomenological research, one of the approaches to obtain clear reports about place attachment is the narratives of individuals and groups who have achieved a first-hand understanding of the importance of place attachment in their lives because they have experienced a lack of dramatic changes in location (Million, 1992). A skilled interviewer extracts the story's context and helps the respondent form meaning based on his experiences (Manzo & Devin Wright, 2016, 124).

Therefore, in the interviews, the respondents were asked to describe their memories in the form of stories, and keywords were extracted during the interview with the help of the "participation in dialogue" and "accompanying" techniques. In addition, the respondents were asked to show the spaces that need more attention (unhealthy and poor quality spaces) and cozy spaces to be photographed. It should be mentioned that the interviewer acted as an "active listener" in all the conducted interviews to obtain a comprehensive and unbiased result.

The AHP method has been used to select selected samples with different conditions of social housing to evaluate different social housing. The social housing complexes of Shiraz City include: Eskan complex (1 to 4), Bo Ali complex (1-3), Esar, Sadaf complex (1 and 2), Salahshoran complex (1 and 2), Salman Farsi (Eram), Delgosha and Bahman. It should be mentioned that due to the absence of the

"Bahman" residential complex at the address announced by the Ministry of Roads and Urban Development of Fars province and the lack of interest in the cooperation of the officials of the "Delgosa" residential complex with the authors, these two cases have not been analyzed and investigated. In addition, the two complexes of Salahshoran 1 and 2 were also excluded from the surveys due to being located in Sadra town (which has a separate municipality from Shiraz city).

To select selected samples with different conditions of social housing, the AHP method was used. In this regard, the components of evaluating social housing design features were determined based on the studies conducted in the doctoral thesis of the first author (1-cultural-social component, 2-physical-environmental component, 3-functional-behavioral component, 4-political component, 5-Economic component and 6-semantic component and perceptual-cognitive), and were evaluated as evaluation criteria; Then, a questionnaire was prepared and provided to experts to determine the importance and superiority of each of the influencing components over the other (based on the frequency of superiority coefficients (mode)). Table 1 shows the investigated social housing complexes, their location, and their zoning according to Shiraz municipality.

It is worth mentioning that the relative importance of each of the criteria was a spectrum of nine hourly degrees: 1- Equal importance equal to the number 1; 2- The average importance is equal to the number 3; 3- strong importance (special) equivalent to the number 5; 4- very strong importance equivalent to the number 7; 5- extraordinary importance equivalent to the number 9; 6- intermediate values equivalent to the number 2, 4, 6 and 8; 7- Values for reverse comparison are equivalent to 1.3, 1.5, 1.7 and 1.9. After determining the importance coefficient between each component, these numbers were given to Expert Choice 11 software. Finally, according to the Analysis, all social housing complexes: 1- Eskan (1, 2, 3 and 4)), 2- Bo-Ali (1, 2 and 3), 3- Salman Farsi (Eram), and 4- Sadaf (1 and 2), 5- Esar, were chosen due to their homogeneity in terms of the mentioned components.

## Literature Review

### Social housing

The concept of suitable housing is a housing that, in addition to meeting the needs of users for shelter, does not have negative side effects for individuals or society. Side effects include things such as the production of physical diseases and all kinds of mental diseases due to the lack of facilities and the creation of grounds for crime and delinquency (Oxley, 2000). Housing has different meanings from social, psychological, and economic perspectives. Table 2 shows this.

Housing poverty in the urban areas of Iran has manifested itself in informal housing and is developing (Athari, 2005). Social housing is a special housing provision by the local or national government to house low-income groups (Meshkini et al., 2017). Social housing, also known as public, government, and affordable housing, emerged, grew, and developed in European industrialized countries at the beginning of the 20th century (Lund, 2011). It is not easy to accurately define the concept of social housing. This concept becomes more complicated when its content changes from country to country. Usually, the term "rental social housing" is equivalent to social housing. However, in some countries, housing cooperatives and specific parts of real estate are compatible with social housing criteria.

Social housing is proposed as a solution for social support in the field of housing. The ever-increasing urban population growth in developing cities has forced governments to respond to the needs of a large part of the population, generally considered vulnerable sections of society, through social housing. Social housing is a tool for implementing social housing policy (Rajaei et al., 2016, 9 & 30). In general, it can be said that social housing is housing for the use of poor or homeless people or those with economic problems or immigrants, which is built with the aid of the government and with its support in a minimum area and with minimum facilities.

Table 1: Investigated social housing complexes

| Zoning of Shiraz municipality | location   | The name of the residential complex    |          |
|-------------------------------|--|--|----------|
| 7                             | Shiroudi Boulevard., Forsat Shirazi Square, Fazel Street., Dana Street | Eskan 1                                |          |
|                               | Shiroudi Boulevard., Forsat Shirazi Square., Fazel Street., Alley 9    | Eskan 2                                |          |
|                               | Shiroudi Boulevard., Forsat Shirazi Square., Fazel Street              |  | Eskan 3  |
|                               |  |  | Eskan 4  |
|                               |  |  | Bo-Ali 1 |
|                               |  | Shiroudi Boulevard., Zamzam Crossroads | Bo-Ali 2 |
|                               |  | Bo-Ali 3                               |          |
| 9                             | Mianroud., West Baharestan Boulevard                                   | Esar                                   |          |
| 3                             | Salman Farsi Street (Pirnia)   | Salman Farsi (Eram)                    |          |
| 11                            | West Abo Nasr Boulevard., Alley 22                                     | Sadaf 1                                |          |
|                               | West Abo Nasr Boulevard., Mououd Street                                | Sadaf 2                                |          |

Table 2: Housing from different points of view (taken from Faqih Farahmand, 2009)

| References                    | Description   | Housing from different perspectives        |
|-------------------------------|---|--|
| Ghorbani, 1995; Kendall, 2004 | A human being is a social being who needs to form a family and, as a result, needs housing to protect the family and determine the family framework | Housing from a social perspective          |
| Ghorbani, 1995                | Desirable housing provides an environment with mental peace   | Housing from a psychological point of view |
| Kendall, 2004                 | A type of investment with an economic concept   | Housing from an economic point of view     |

**Place Attachment**

In Dehkoda's dictionary, attachment means affection, friendship, desire, affection, the tendency of mind, and love. Place attachment is a relationship and connection point between people and places. Today, the concept of place attachment plays an important role in environmental psychology studies. Place attachment is a chain between people and meaningful environments (Giuliani et al., 2003; Low & Altman, 1992). Loving a place is one of the most important aspects of the relationship between a person and a place, and a place that can establish a connection between itself and a person is considered a loving place (Mostaghni et al., 2021).

Attachment to a subject, such as an object, place, person, or other subjects that a person faces daily, is based on previous life experiences and a person's behavioral, sensory, cognitive, and social structures. Place attachment consists of a threefold organized framework (person, process, and place) whose individual dimension is related to individual or collective defined meanings and concepts. The psychological dimension of attachment to a place includes: sensory or emotional, cognitive, and behavioral elements, and the spatial dimension refers to the characteristics of a place, including spatial level, special characteristics, and prominence of physical or social elements (Scannel & Gifford, 2010).

Attachment to a place is considered the meeting point of physical

elements, activities, and mental concepts towards the place. This sense of attachment causes the space to become a place with specific sensory and behavioral characteristics for people (Sajjadzadeh, 2013). It emphasizes people's interests or emotional ties to a specific place, and it means people's mental perception of the environment and their more or less conscious feelings about the environment. which puts a person in an emotional relationship with the environment. In such a way, a person's understanding and feelings are linked and integrated with the semantic context of the environment. This feeling is a factor that transforms a space into a place with special sensory and behavioral characteristics for people (Khodae et al., 2015a). Attachment to a place emphasizes the emotional impact of a place that people are attracted to for sensory and cultural reasons. Individuals form common cultural, sensory, and emotional effects on a specific place or land and are the basis of how a group or individual perceives a place and how they relate to it (Low & Altman, 1992, 5). Place attachment is more than an emotional and cognitive experience and includes cultural beliefs and practices that bind people to a place (Shao & Liu, 2017).

**Factors Affecting the Design of Social Housing**

According to various research, various components are effective in designing housing, including social housing, which can be categorized as follows: 1-physical-environmental component, 2-functional-

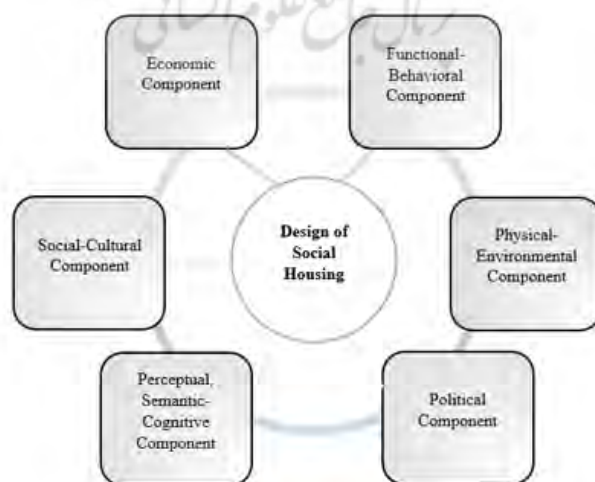


Fig. 1: Influential components in the design of social housing

behavioral component, 3-Social-cultural component, 4-Political component, 5-Economic components and 6- Perceptual, semantic-cognitive component. (Fig. 1)

In Table 3, the components and sub-components affecting the design of social housing are categorized and specified.

## RESULTS AND DISCUSSION

The semi-structured interview with 387 users living in social housing

complexes was about eight main questions: How do you interact with the neighbors and residents of this complex? What factors are effective in your communication with others in the complex where you live? If you leave or stay away from this residential complex (for reasons: work, study, recreation, .), what makes you want to return? Why do you want to return if you leave or stay away from this complex? How is this place? What are the unique features of this residential complex? What factors lead you to use more or less different spaces in your residential

Table 3: Influential components and sub-components in the design of social housing

| components   | sub-components  | Description  |
|--|---|--|
| physical-environmental                                   | Green spaces and natural landscapes   | Bonaiuto et al., 1999; Lewicka, 2009; Manzo & Devin Wright, 2016, 131; Talischi & Rezaei, 2019; Rahimi et al., 2020; Mojtabavi et al., 2020; Haqqani & Majidi Hatkeloui, 2021; Cole et al., 2021 |
|  | (Security (no house burglaries at night; no car thefts and no attacks   | Baba & Austin, 1989; Amirkafi & Fathi, 2011; Kharabati & Yazdanfar, 2017; Zarini & Kameli, 2017; Mojtabavi et al., 2020; Haqqani & Majidi Hatkeloui, 2021  |
|  | Safety  | Mojtabavi et al., 2020   |
|  | Convenience   |  |
|  | higher fear of crime  | Kamalipour et al., 2012  |
|  | (Building size (number of floors and number of apartments   | Lewicka, 2009  |
|  | Personalization   | Lewicka, 2009; Haqqani & Majidi Hatkeloui, 2021  |
|  | Dimensions and sizes of spaces  | Rahimi, 2019; Ahmadi et al., 2021  |
|  | Comfort   | Regnier & Pynoos, 1987; Kharabati & Yazdanfar, 2017; Rahimi et al., 2020   |
|  | Type of access (on foot and horseback)  | Sadeqi Fereshte et al., 2013   |
|  | Access to services and facilities (public transportation, .)  | Regnier & Pynoos, 1987; Kharabati & Yazdanfar, 2017; Rahimi et al., 2020; Mojtabavi et al., 2022b; Ahmadi et al., 2021; Mojtabavi et al., 2020   |
|  | Furniture and equipment   | Alimardani et al., 2018; Mojtabavi et al., 2020; Ahmadi et al., 2021   |
|  | Cleanliness   | Ahmadi et al., 2021  |
|  | Urban facilities and services (distance to educational centers, distance to healthcare centers, distance to recreation centers, parks, green spaces, distance to police and fire stations, distance to cultural centers and public libraries, distance to coffee shops, restaurants, (and fast food, distance from religious spaces | Amirkafi & Fathi, 2011; Zarini & Kameli, 2017  |
|  | functional-behavioral   | Facilities   |
| The possibility of various activities in the place       |   | Rahimi et al., 2020; Ahmadi et al., 2021   |
| The possibility of specific activities in the place      |   |  |
| The possibility of forming social connections and bonds  |   |  |
| Suitability of activities to human needs                 |   | Rahimi et al., 2020  |
| functional facilities                                    |   | Najafi & Kamal B.M. Shariff, 2014  |
| The possibility of investment and functional development |   | Hashas, 2004   |
| Public open social arenas                                |   | Talischi & Rezaei, 2019  |
| Outdoor meeting spaces                                   |   |  |
| With paths for walking                                   |   | Koohsari et al., 2023  |
| Activity rules   | Kharabati & Yazdanfar, 2017; Low & Altman, 1992   |  |

Continuie of Table 3: Influential components and sub-components in the design of social housing

| components                     | sub-components  | Description   |
|--------------------------------|---|---|
| cultural-social                | Social relations  | Rapoport, 2009  |
|                                | Culture   | Avcı Türkoğlu, 2023   |
|                                | religious activities  | Najafi & Kamal B.M. Shariff, 2014   |
|                                | A space to respond to needs   | Hajiparvaneh, 2016; Hojat et al., 2017  |
|                                | Holding religious ceremonies and rituals and participating in them  | Zamani & Honarvar, 2018; Alimardani et al., 2018  |
|                                | Homogeneity of users (creating intimacy between people)   | Mojtabavi et al., 2020  |
|                                | Collaborative atmosphere and peer motivation  | Rodwick, 2022   |
|                                | Collaborative atmosphere and peer motivation  | Rodwick, 2022   |
| perceptual, semantic-cognitive | Place ownership   | Kamalipour et al., 2012   |
|                                | Diaries   | Hajiparvaneh, 2016; Kharabati & Yazdanfar, 2017; Hojat et al., 2017; Mojtabavi et al., 2022b, 2020; Riley, 1992 |
|                                | Territory/personal privacy/personal freedom   | Hajiparvaneh, 2016; Kharabati & Yazdanfar, 2017; Mojtabavi et al., 2022a, 2022b, 2020; Rapoport, 1982           |
|                                | Pleasant weather  | Gustafson, 2001   |
|                                | The absence of the dark side of attachment to a place   | Manzo & Devin Wright, 2016  |
|                                | Sensory experiences   | Hajiparvaneh, 2016; Mojtбайi et al., 2022a  |
|                                | A platform to meet needs  | Hojat et al., 2017  |
|                                | Continuity of space and time (similarity of the place of life to the place of childhood, similarity of the weather of the place of life to the weather of childhood/historical reminders/memories/sense of peace) | Manzo & Devin Wright, 2016, 222; Zamani & Honarvar, 2018  |
|                                | Visual richness   | Ghannad et al., 2022  |
|                                | Social cohesion (the homogeneity of the residents' social class in terms of financial level)  | Khodaei et al., 2015b   |
| Political                      | Job creation and the possibility of economic activities and earning money in the place of residence   | Manzo & Devin Wright, 2016, 265; Zarini & Kameli, 2017  |
|                                | Nativist  | -----   |
|                                | Influential policies of government structure on architecture  | -----   |
| Economic                       | Integrated management policies  | -----   |
|                                | Ownership of the place  | Kamalipour et al., 2012   |
|                                | Design according to the climate (materials, colors, window shades.)   | -----   |
|                                | Proximity of residence to workplace   | -----   |
|                                | Protection and maintenance of the desired building to save money in the future (preventing the cost of retrofitting, repairs, .)  | -----   |

complex? What memories does this residential complex evoke for you? What factors cause you to be annoyed because of living in social housing?

In response to the first question about specifying the specific characteristics of their residential complex, the interviewees mentioned being safe, secure, peaceful, and friendly atmosphere. Regarding the second question related to why they were bothered by living in the complex, they referred to uncomfortable memories and experiences and the lack of various facilities in their complex. In response to the third question regarding the reason for wanting to return to their complex if they leave it for any reason, they mostly referred to their

social ties and friendships. In response to the fourth question about how they communicate and interact with their neighbors, they mentioned Social contributions and individual characteristics. In response to the fifth question regarding the reasons for using different spaces of their complex more, they mentioned things such as dynamics and special features, and It is worth mentioning that the responses of the interviewees were converted from audio and video files into text and then entered into the ATLAS-TI 9 software. Then, it was coded, and ten experts in designing residential complexes confirmed the validity of the subcategories, concepts, and codes. The relationship between the codes was extracted from the software as a diagram. Figures 2 to 6

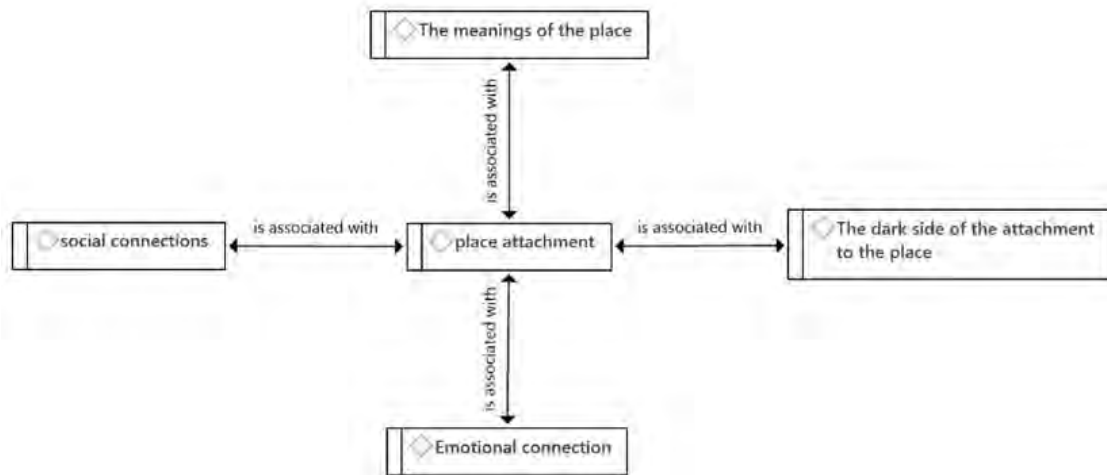


Fig. 2: Subcategories related to place attachment

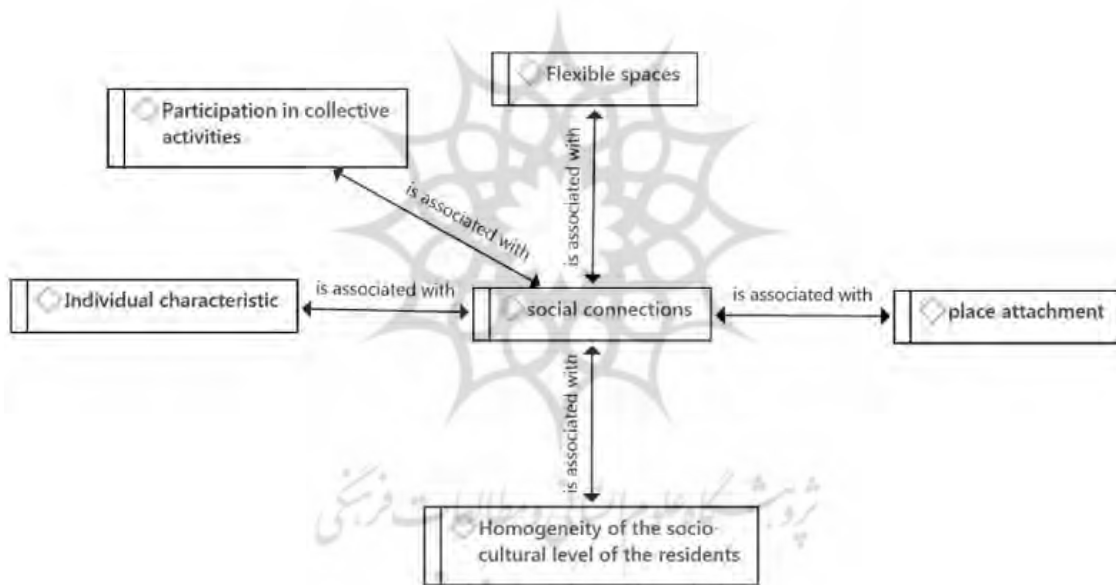


Fig. 3: Relationship of attachment to place with social connections and related concepts

show these diagrams.

Figure 2 indicates that place attachment is related to 4 main components: social connections, place meanings, the dark side of place attachment, and emotional connection.

Figure 3 indicates that social ties include flexible spaces, participation in collective activities, individual characteristics, and the homogeneity of the socio-cultural level of the residents.

Figure 4 indicates that the emotional connection includes staying time, protecting and maintaining the complex sense of belonging, social connections, beauty, and visual quality.

Figure 5 indicates that the meanings of the place include dynamic, special features, location constraints and threats of place, and space-time continuity.

Figure 6 indicates that the dark side of attachment to a place includes

not paying attention to proportions, negative memories, and limitations.

Table 4 contains the content analysis of the data, which, after validity and presentation, have been compared with the effective components in the design of social housing.

As it is clear from Table 4, the components affecting the attachment to the place of the users of social housing complexes, according to their interviews, include community connection, emotional bond, place meanings, and the dark side of attachment to the place.

It is worth noting that the codes related to facilities and equipment, safety, security, convenience, dimensions, and sizes of spaces correspond to the physical-environmental component. The codes related to responding to needs, diversity of specific activities, and climate comfort, ., corresponding to the functional-behavioral component; Codes related to economic savings design according

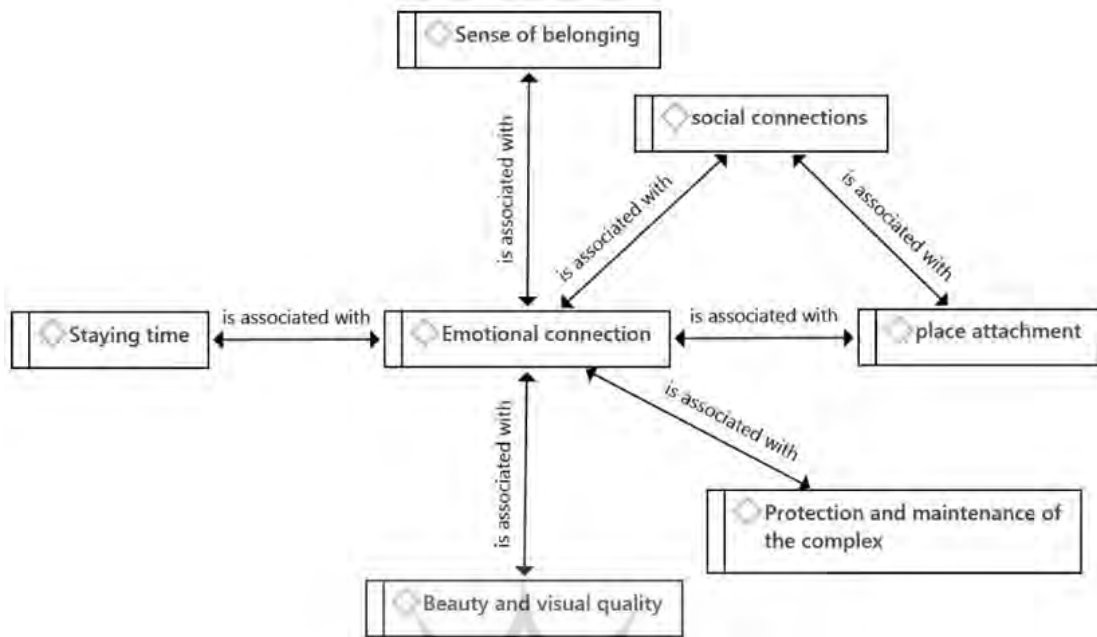


Fig. 4: Relationship of attachment to place with emotional connection and related concepts

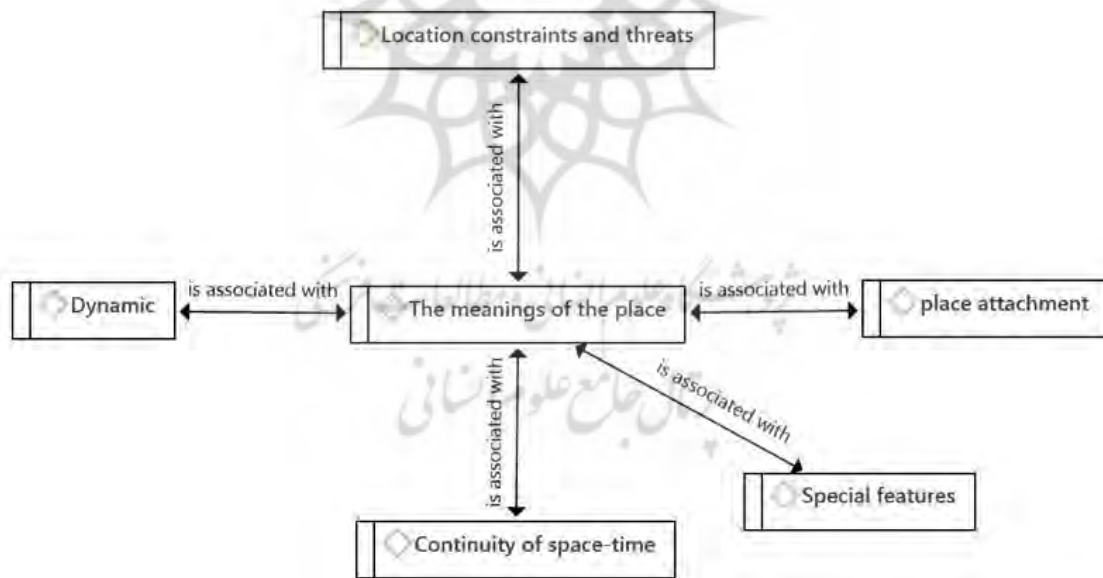


Fig. 5: Relationship of place attachment with place meanings and related concepts

to the climate, .. corresponding to the economic component; The codes that are related to Integrated management policies, Influential policies of government structure on architecture, .. corresponding to the political component; The codes that were related to perceptual and mental characteristics (all codes) were considered to be following the perceptual, semantic-cognitive component, and the codes that were related to social activities, cultural contexts, .. were considered to be

under the cultural-social component and in Table number four are presented.

During the interview, the interviewer, as an active listener, asked the respondents to talk about the cozy and high-quality spaces and the low-quality and unhealthy spaces of their residential complex and show those places so that these spaces could be photographed. Table 5 contains these images, which, according to the residents' explanations,



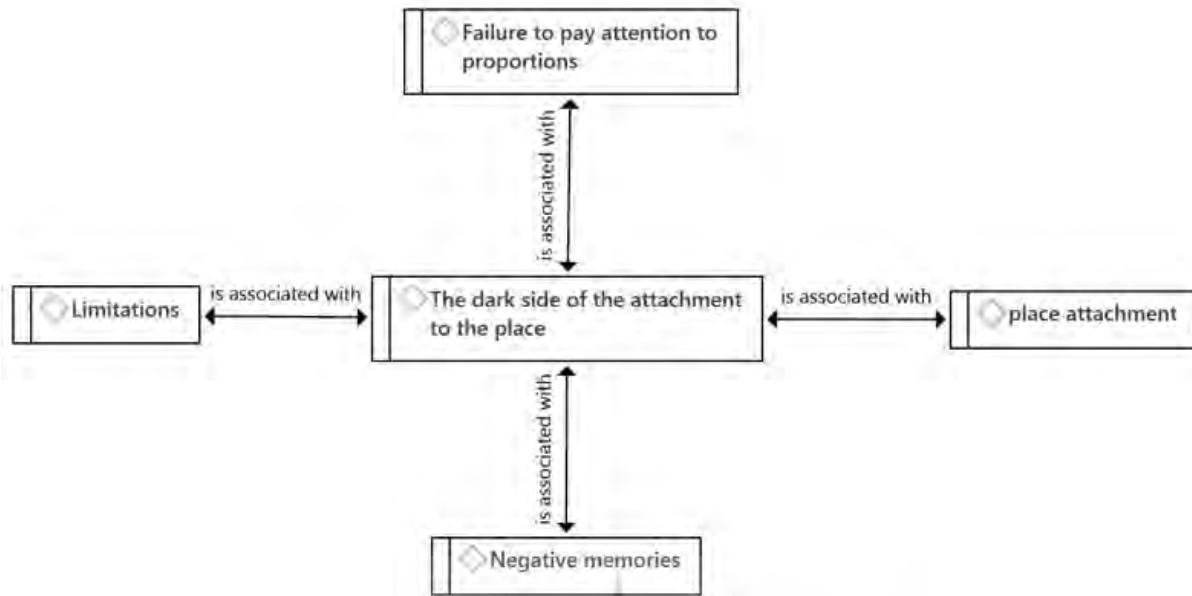


Fig 6: Relationship of place attachment with the dark side of place attachment and related concepts

Table 4: Categories and subcategories related to place attachment of users' social housing complexes based on the content analysis and matching them with effective components in social housing design

| Relation of codes with effective components in social housing design  | Codes  | concepts   | subcategory        | category         |
|---|--|--|--------------------|------------------|
| Cultural-social component;<br>Functional-behavioral component;<br>Perceptual, semantic-cognitive component;<br>Political component                                      | Helping to cook the offering or distributing it among the neighbors and in general, social contributions | Participation in collective activities                   | Social connections | Place attachment |
|   | Encouraging participation in ritual, religious and cultural celebrations of neighbors                    |  |                    |                  |
| Physical-environmental component;<br>Cultural-social component;<br>Functional-behavioral component;<br>Perceptual, semantic-cognitive component;<br>Political component | Creating a suitable platform for picnics and more commuting of neighbors                                 | Individual characteristic                                | Social connections | Place attachment |
|   | Interested in participation in ritual, religious and cultural celebrations of neighbors                  |  |                    |                  |
| Cultural-social component;<br>Functional-behavioral component;<br>Perceptual, semantic-cognitive component  | Interested in picnic with neighbors in the yard  | Flexible spaces  | Social connections | Place attachment |
|   | Home visits with neighbors   |  |                    |                  |
| Physical-environmental component;<br>Functional-behavioral component;<br>Perceptual, semantic-cognitive component;<br>Political component                               | Interested in talking with neighbors   | Flexible spaces  | Social connections | Place attachment |
|   | The existence of different and flexible spaces   |  |                    |                  |
| Cultural-social component;<br>Perceptual, semantic-cognitive component;<br>Political component  | Language   | Homogeneity of the socio-cultural level of the residents | Social connections | Place attachment |
|   | race   |  |                    |                  |
|   | Nationality/Ethnicity  |  |                    |                  |
|   | life style   |  |                    |                  |
|   | Customs  |  |                    |                  |
| Cultural-social component;<br>Perceptual, semantic-cognitive component;<br>Political component  | Ideas and beliefs  | Homogeneity of the socio-cultural level of the residents | Social connections | Place attachment |
|   | Literacy and education level   |  |                    |                  |
| Cultural-social component;<br>Perceptual, semantic-cognitive component;<br>Political component  | Homogeneity in terms of age  |  |                    |                  |

Continue of Table 4: Categories and subcategories related to place attachment of users' social housing complexes based on the content analysis and matching them with effective components in social housing design

| Relation of codes with effective components in social housing design  | Codes   | concepts                                  | subcategory | category |
|---|---|---|-------------|----------|
| Physical-environmental component; Perceptual, semantic-cognitive component; Economic component; Political component   | Protection of green spaces  | Protection and maintenance of the complex |             |          |
|   | Cleaning and hygiene  |   |             |          |
|   | The complex is equipped with a security area  |   |             |          |
| Physical-environmental component; Perceptual, semantic-cognitive component; Political component   | Keeping the complex healthy and taking care of its damage and wear and tear (Facade, materials, lighting, ) | Beauty and visual quality                 |             |          |
|   | Supervision   |   |             |          |
|   | Paying attention to the coordination and harmony between color, texture, materials, light,                  |   |             |          |
| Physical-environmental component; Perceptual, semantic-cognitive component; Political component   | No visual disturbances  | Emotional connection                      |             |          |
|   | Existence green spaces especially suited to the climate   |   |             |          |
| Perceptual, semantic-cognitive component  | long-term stay  | Staying time                              |             |          |
|   | Inheritance of place  | Sense of belonging                        |             |          |
| Perceptual, semantic-cognitive component; Cultural-social component   | Residence of relatives or friends in or near the complex  | Social relations                          |             |          |
|   | The existence of a favorable and sociable platform for creating social relations                            |   |             |          |
| Perceptual, semantic-cognitive component  | Ensuring a long-term stay   | Place attachment                          |             |          |
|   | Being a landlord or a tenant  |   |             |          |
| Physical-environmental component; Perceptual, semantic-cognitive component; Political component   | Establishing surveillance in the complex  | Dynamic                                   |             |          |
|   | Establishing security in the complex  |   |             |          |
| Physical-environmental component; Perceptual, semantic-cognitive component; Political component   | Favorable weather (comfortable temperature)   | The meanings of the place                 |             |          |
|   | Design suitable for the climate   |   |             |          |
| Physical-environmental component; Functional-behavioral component; Perceptual, semantic-cognitive component; Cultural-social component; Economic component; Political component | The possibility of economic activities such as: selling food products, pickles, . in the complex            |   |             |          |
|   | With attractive hiking trails with beautiful scenery for walking  |   |             |          |
| Physical-environmental component; Functional-behavioral component; Perceptual, semantic-cognitive component; Political component  | Possibility of cycling in the area  |   |             |          |
|   | Safety of spaces and furniture  |   |             |          |
| Physical-environmental component; Functional-behavioral component; Perceptual, semantic-cognitive component; Political component  | The possibility of personalizing spaces   |   |             |          |
|   |   |   |             |          |

Continued of Table 4: Categories and subcategories related to place attachment of users' social housing complexes based on the content analysis and matching them with effective components in social housing design

| Relation of codes with effective components in social housing design  | Codes   | concepts | subcategory | category |                                  |  |  |
|---|---|----------|-------------|----------|----------------------------------|--|--|
| Physical-environmental component; Perceptual, semantic-cognitive component; Political component   | The presence of wide and diverse green spaces   | Dynamic  |             |          |                                  |  |  |
| Physical-environmental component; Functional-behavioral component; Perceptual, semantic-cognitive component; Political component                            | The existence of single seating areas   |          |             |          |                                  |  |  |
| Physical-environmental component; Cultural-social component; Functional-behavioral component; Perceptual, semantic-cognitive component; Political component | The existence of group seating areas  |          |             |          |                                  |  |  |
| Physical-environmental component; Functional-behavioral component; Perceptual, semantic-cognitive component; Political component                            | The existence of diverse and flexible space for one person  |          |             |          |                                  |  |  |
| Physical-environmental component; Cultural-social component; Functional-behavioral component; Perceptual, semantic-cognitive component; Political component | The existence of diverse and flexible spaces for more than one person   |          |             |          |                                  |  |  |
| Cultural-social component; Functional-behavioral component; Perceptual, semantic-cognitive component; Political component                                   | Not holding social, ritual, religious and cultural events   |          |             |          |                                  |  |  |
| Physical-environmental component; Perceptual, semantic-cognitive component; Political component   | Disproportion between the number of residents and the dimensions of the complex                                 |          |             |          |                                  |  |  |
| Physical-environmental component; Functional-behavioral component; Perceptual, semantic-cognitive component; Political component                            | Lack of cleaning and not maintaining sufficient cleanliness   |          |             |          | Location constraints and threats |  |  |
|   | Lack of sufficient facilities: indoor and outdoor gathering spaces, children's play ground,                     |          |             |          |                                  |  |  |
|   | Lack of sufficient and necessary facilities for daily needs such as: bakery, supermarket,                       |          |             |          |                                  |  |  |
|   | Lack of facilities for all the residents of the complex   |          |             |          |                                  |  |  |
|   | Lack of facilities commensurate with the number of residents  |          |             |          |                                  |  |  |
|   | Lack of different and flexible functional spaces  |          |             |          |                                  |  |  |
| Physical-environmental component; Perceptual, semantic-cognitive component; Political component   | The existence of unhealthy and poor quality spaces  |          |             |          |                                  |  |  |
|   | The location of the complex on the main street and the resulting noise pollution                                |          |             |          |                                  |  |  |
|   | Lack of supervision   |          |             |          |                                  |  |  |
|   | Lack of security  |          |             |          |                                  |  |  |
|   | Lack of readability   |          |             |          |                                  |  |  |
|   | Lack of permeability  |          |             |          |                                  |  |  |
|   | Lack of good access to public transportation, especially subway and bus   |          |             |          |                                  |  |  |
|   | Not equipped with an elevator   |          |             |          |                                  |  |  |
| The disproportion between the dimensions of the open and closed spaces of the complex with the number of residents  |   |          |             |          |                                  |  |  |
| Physical-environmental component; Functional-behavioral component; Perceptual, semantic-cognitive component; Political component                            | The lack of proximity of the complex to spatial facilities, including medical, educational,                     |          |             |          |                                  |  |  |
| Physical-environmental component; Functional-behavioral component; Cultural-social component; Perceptual, semantic-cognitive component; Political component | The lack of proximity of the complex to cultural spatial facilities, such as: cultural center, library, mosque, |          |             |          |                                  |  |  |
| Physical-environmental component; Perceptual, semantic-   | Lack of coherence and visual unity  |          |             |          |                                  |  |  |
|   | Lack of beauty and visual quality   |          |             |          |                                  |  |  |

The meanings of the place  
Place attachment






Continuie of Table 4: Categories and subcategories related to place attachment of users' social housing complexes based on the content analysis and matching them with effective components in social housing design

| Relation of codes with effective components in social housing design  | Codes   | concepts                 | subcategory                                  | category         |
|---|---|--------------------------|--|------------------|
| cognitive component; Political component  | Problems of water and electricity facilities  |                          |  |                  |
| Physical-environmental component; Perceptual, semantic-cognitive component; Political component   | The climate of the complex is similar to the climate of the residents' childhood  | Continuity of space-time |  |                  |
|   | The weather of the complex is similar to the weather of the residents' past   |                          |  |                  |
|   | The complex is similar to the climate of the place where the residents lived in childhood                                 |                          |  |                  |
|   | The complex has the same climate as the place where the residents lived in the past                                       |                          |  |                  |
|   | Complex, evoking good memories and loving friends   |                          |  |                  |
| Physical-environmental component; Perceptual, semantic-cognitive component; Political component   | favorable living conditions (security, peace and comfort, safety, .)  |                          |  |                  |
|   | peace of mind   |                          |  |                  |
|   | security  |                          |  |                  |
| Physical-environmental component; Functional-behavioral component; Cultural-social component; Perceptual, semantic-cognitive component; Political component | friendly environment  |                          |  |                  |
|   | Supervision and watchful eyes (Equipped with surveillance cameras)  |                          |  |                  |
| physical-environmental component; Perceptual, semantic-cognitive component; Political component   | Wide green spaces   | Special features         | The meanings of the place                    | Place attachment |
| Physical-environmental component; Perceptual, semantic-cognitive component; Political component   | sufficient number of spaces for car parking   |                          |  |                  |
| Physical-environmental component; Functional-behavioral component; Perceptual, semantic-cognitive component; Political component                            | The possibility of personalizing spaces: making furniture, planting flowers,  |                          |  |                  |
| Physical-environmental component; Cultural-social component; Functional-behavioral component; Perceptual, semantic-cognitive component; Political component | Existence of diverse and special spaces: Hosseiniyeh (space for prayer, worship, .), sports club, children's play area, . |                          |  |                  |
| Physical-environmental component; Functional-behavioral component; Perceptual, semantic-cognitive component; Political component                            | The existence of various and special spaces for daily affairs, such as supermarkets, bakeries, vegetable shops,           |                          |  |                  |
| Physical-environmental component; Perceptual, semantic-cognitive component; Political component   | The complex is equipped with an elevator.   |                          |  |                  |
| Physical-environmental component; Cultural-social component; Perceptual, semantic-cognitive component; Political component                                  | Having negative and annoying experiences, including: car theft, house theft, shoe theft,                                  | Negative memories        | The dark side of the attachment to the place |                  |
| Physical-environmental component; Cultural-social component; Functional-behavioral component; Perceptual, semantic-cognitive component; Political component | Having negative and annoying experiences, including: fights, conflicts,   |                          |  |                  |








Continue of Table 4: Categories and subcategories related to place attachment of users' social housing complexes based on the content analysis and matching them with effective components in social housing design

| Relation of codes with effective components in social housing design   | Codes  | concepts                                | subcategory                                  | category         |
|--|--|---|--|------------------|
| Physical-environmental component; Perceptual, semantic-cognitive component; Political component                                  | The disproportion between the dimensions of the open and closed spaces of the complex with the number of residents | Failure to pay attention to proportions | The dark side of the attachment to the place | Place attachment |
| Physical-environmental component; Functional-behavioral component; Perceptual, semantic-cognitive component; Political component | The existence of ugly, unhealthy, and poor-quality spaces<br>Absence or lack of proximity to facilities            | Limitations                             |  |                  |




Table 5: Pictures of the special spaces of social housing complexes and their compatibility with the components related to place attachment and the components affecting the design of social housing complexes

| Factors affecting the design of social housing complexes  | Components related to place attachment                                     | Description of the image   | Image  | The name of the residential complex |
|---|--|--|--|-------------------------------------|
| physical-environmental component; functional-behavioral component; cultural-social component; Perceptual, semantic-cognitive component; Political component | Meanings of place, social links, emotional bond                            | A cozy group seating area facing each other                                  |   | Eskan 1                             |
|   |  | The cozy sitting area next to the children's play area                       |  | Eskan 2                             |
| physical-environmental component; functional-behavioral component; Perceptual, semantic-cognitive component; Political component                            | Meanings of place; The dark side of place attachment; Emotional connection | Ugly, poor quality, and lacks performance space                              |  | Eskan 3                             |
| physical-environmental component; functional-behavioral component; cultural-social component; Perceptual, semantic-cognitive component; Political component | Meanings of place; social links, emotional bond                            | Personalizing the space by residents and creating a cozy sitting environment |  |                                     |
|   |  | A cozy group seating area next to the children's play area                   |  |                                     |

Continuie of Table 5: Pictures of the special spaces of social housing complexes and their compatibility with the components related to place attachment and the components affecting the design of social housing complexes

| Factors affecting the design of social housing complexes  | Components related to place attachment                                     | Description of the image  | Image  | The name of the residential complex |
|---|--|---|--|-------------------------------------|
| physical-environmental component; Perceptual, semantic-cognitive component; Political component   | Meanings of place; The dark side of place attachment; Emotional connection | Unightly and inconsistent spaces in the facade                                  |    | Eskan 4                             |
| physical-environmental component; functional-behavioral component; Perceptual, semantic-cognitive component; Political component                            | Meanings of place; The dark side of place attachment; Emotional connection | The unsafe environment of children's play as a space without functional quality |    | Bo Ali 1                            |
| physical-environmental component; functional-behavioral component; cultural-social component; Perceptual, semantic-cognitive component; Political component | Meanings of place, social links, emotional bond                            | Cozy seating area for several people  |   | Bo Ali 2                            |
|   |  | Cozy seating area for several people  |  |                                     |
| physical-environmental component; functional-behavioral component; Perceptual, semantic-cognitive component; Political component                            | Meanings of place; The dark side of place attachment; Emotional connection | Space for trash cans  |  | Bo Ali 3                            |
| hysical-environmental component; functional-behavioral component; Perceptual, semantic-cognitive component; Political component                             | Meanings of place; The dark side of place attachment; Emotional connection | Unsafe space  |  | Sadaf 1                             |
| physical-environmental component; Perceptual, semantic-cognitive component; Political component   | Meanings of place; The dark side of place attachment; Emotional connection | Unightly and inconsistent spaces in the facade                                  |  | Sadaf 2                             |

Continue of Table 5: Pictures of the special spaces of social housing complexes and their compatibility with the components related to place attachment and the components affecting the design of social housing complexes

| Factors affecting the design of social housing complexes  | Components related to place attachment   | Description of the image  | Image   | The name of the residential complex |
|---|--|---|---|-------------------------------------|
| physical-environmental component;<br>functional-behavioral component;<br>Perceptual, semantic-cognitive component;<br>Political component | Meanings of place;<br>The dark side of place attachment;<br>Emotional connection | Lack of security and sufficient lighting of the children's play ground during the day and night |   | Esar                                |
| physical-environmental component; Perceptual, semantic-cognitive component; Political component   | Meanings of place;<br>The dark side of place attachment;<br>Emotional connection | Destroyed walls of facilities, broken materials, and stolen or broken lights                    |   |                                     |
| physical-environmental component;<br>functional-behavioral component;<br>Perceptual, semantic-cognitive component;<br>Political component | Meanings of place;<br>The dark side of place attachment;<br>Emotional connection | Poor quality spaces   |  | Salman Farsi (Eram)                 |

the subject of each image has been compared with the components related to attachment to the place and the components affecting the design of social housing complexes.

According to Table number five, it can be seen that paying attention to social life and providing a favorable platform for creating social bonds, organizing the state of facades, mechanizing trash cans, designing and implementing safe play spaces and contemporizing them, protecting And maintaining spaces and materials, establishing security and having supervision, as well as the possibility of personalizing spaces can be effective in the level of attachment to the place of social housing complex users.

### CONCLUSION

The present research was conducted with the content analysis method with the help of library and field studies based on available sources and semi-structured interviews of the users of social housing complexes in Shiraz city to present the components influencing the attachment to the place of the users of social housing complexes from the perspective of the residents. The audio and video files recorded from the interviews were entered into the ATLAS-TI 9 software as text, and after coding the data and determining their authenticity, they were presented in the form of diagrams by experts. The findings indicated that the components

related to attachment to the place of social housing complexes from the perspective of the users include: 1-social connections, 2- emotional connection with the place, 3- the meanings of the place, and 4- the dark side of the attachment to the place, and the sub-components of each of them are clear. And were compared with the effective components of the design of social housing complexes.

Table 6 shows the number of concepts and codes of the four subcategories of the components affecting the place attachment of the users's social housing complexes based on the content analysis of the interviews with them.

According to Table 6, it is clear that the largest number of concepts related to the emotional connection and the largest number of codes are related to the meanings of place. Figure 7 shows the frequency of repetition of each component affecting the design of social housing from the content analysis codes.

According to Fig. 7, users' place attachment is related to the following components in order: 1-Perceptual, semantic-cognitive component, 2- political component, 3- physical-environmental component, 4- functional-behavioral component, 5- cultural-social component and 6- economic component.

The present research can be considered and used in developing guidelines for designing residential complexes, especially social

Table 6: The number of concepts and codes of the four subcategories of the components affecting the place attachment of the users' social housing complexes based on the content analysis of the interviews with them.

| number of Codes | number of concepts | subcategory                                  | category         |
|-----------------|--------------------|--|------------------|
| 16              | 4                  | Social Connections                           | Place attachment |
| 12              | 5                  | Emotional connection                         |                  |
| 55              | 4                  | The meanings of the place                    |                  |
| 5               | 3                  | The dark side of the attachment to the place |                  |

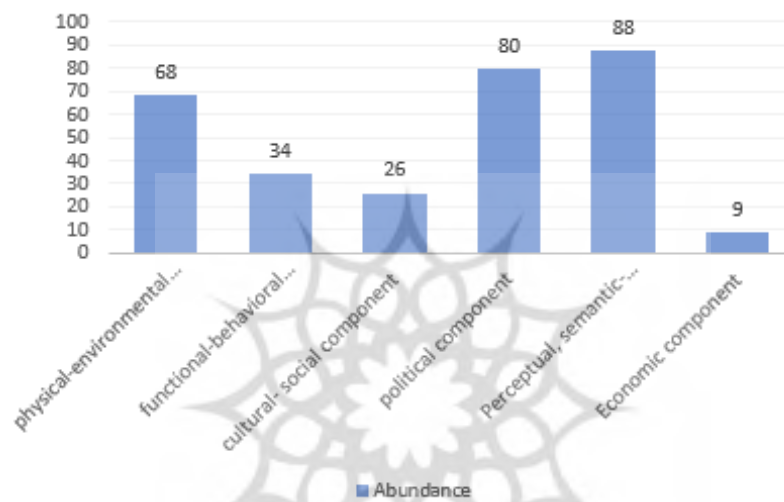


Fig. 7: The frequency of repetition of each of the components affecting the design of social housing from matching with the content analysis codes

housing. In addition, monitoring the management and organization of social housing complexes in Shiraz is necessary. Their lack of desirable quality for the users' lives discourages them and deprives them of the motivation for their presence in these residential complexes. Paying attention to the condition of social housing facades and organizing them and the area of these collective spaces to create special social spaces with visual beauty and richness can be among these measures.

The results also indicated that users return to the social housing complex after traveling more due to social ties. Also, due to the small dimensions of the units, special religious and ritual ceremonies, such as Hazrat Zahra's feast, are held in the presence of a few neighbors and only in some social housing complexes. Future researchers are advised to investigate the level of attachment to the users' place in social housing complexes. They can also research the factors affecting employees' place attachment in different administrative, educational, and therapeutic spaces and compare them with the current research results. In addition, the components presented in the current research can be considered as principles for conducting other applied research and evaluation in social housing complexes.

#### AUTHOR CONTRIBUTIONS

K.S. Tabibzadeh performed the literature review, analyzed and interpreted the data, and prepared the manuscript text and edition. H. Moztarzadeh, M. Parva, and V. Hodjati helped summarize, correct, and present different sections.

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#### CONFLICT OF INTEREST

The authors declare no potential conflict of interest regarding the publication of this work. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication or falsification, double publication and, or submission, and redundancy, have been completely witnessed by the authors.



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