

Comparison and Analysis of the Cognitive Effect of the Role of Memory Index on Promoting the Sense of Belonging of Residents in New and Old Neighborhoods of Shiraz City

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Abstract

The man-made environment in which man lives is not merely a scientific tool or the result of aimless events, rather it is structured and embodies meaning. These meanings and structures reflect man's understanding of the natural and man-made environment and his general state of being. The meaning that man understands from the man-made environment, individually or socially, creates memories in his mind which ultimately increases the sense of belonging of residents to the living space. To create more meaningful spaces and promote the sense of belonging of residents to the space of their residence, this study sought to discover the memorable factors affecting the sense of belonging of residents to their living space. To evaluate the theoretical model, three neighborhoods including Sang-e Siah, Ishaq Beyg, and Morgh Bazaar were selected from the old neighborhoods of Shiraz, and three neighborhoods including Abiyari, Eslah Nejad, and Havabord were selected as a case study from the new neighborhoods of Shiraz and a questionnaire was distributed. The basic research method of this paper was a correlation. The data of the questionnaire were evaluated using Spss software, Spearman's rank correlation coefficient (Spearman's ρ), Tukey, ANOVA, Paired Sample T-Test, and Pearson correlation coefficient (Pearson's r). The memory factor was the independent variable and the sense of belonging was the dependent variable. The results of the present study indicated the importance of the memory factor in promoting a sense of belonging in all neighborhoods. Accordingly, the effect of social memories was greater than physical memories on promoting the sense of belonging of neighborhood residents and in general, the sense of belonging of residents to neighborhoods in the new fabric was much less than the old texture. Overall, the index of reminiscent elements from physical memories and familiarity with the neighborhood from social memories had the most impact and the factor of historical buildings from physical memories and non-governmental organizations from social memories had the least effect on promoting residents' sense of belonging to the living space.

Keywords: Sense of belonging to a place, Collective memories, Historical neighborhoods, Newly built neighborhoods

1.Introduction

A sense of belonging to a place, i.e. place attachment, means having a perception of the environment as well as having more or less conscious emotions of the surroundings which bring one into an internal relationship with the surrounding environment in such a way that a person's perception and emotions are bound and integrated with the semantic context of the environment (Sholeh, 2016)(Babakhani et al,2015). This sense of belonging is the factor that transforms a space into a place with specific emotional and behavioral features for certain people. The sense of a place and place attachment gives people comfort in an environment, and, in addition, leads individuals towards having an identity. It can also be stated that the sense of belonging to space is a complex concept of human emotion and attachment to an environment which is developed as a result of adaptation to the space and usage of the space by humans (Falihat, 2006: 81). The sense of place attachment reveals

emotional, spiritual, and symbolic dimensions existing between humans and the environment where a complex system of internal relations exist between these dimensions and it is perhaps due to this complexity that an agreement upon the general concept and assessment methods of place attachment cannot be found in the literature (Jorgenen, 2006).

Reviewing the related literature can lead one to the roles of different factors in the formation of this sense, among which one can mention the physical aspects of the environment, social features of the residents, the relationships between individuals and the environment, duration of residence, and, in general, the memorability factor (Hummon, 1992). In general, the memorability factors influencing the place attachment of residents in neighborhoods to their environment are divided into two categories of physical memories and social memories where the residence duration parameter is considered to be among the most important factors in terms of formation of memories and place attachment, specifically

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in residential neighborhoods (Hidaly et al, 2001; Bonaiuto et al, 1999). However, the observations made among the residents of new neighborhoods reveal that despite long-term residences, residents' place attachments are significantly lower than that of residents in older urban fabrics which has led to irreversible damages (such as lack of contribution to neighborhood affairs, demolition, and improper land use, safety problems, poor neighborhood relations, depression of residents, etc.) imposed on the social and cultural structure of neighborhoods. Thus, having noticed the significance of the issue, the present study aimed to answer questions such as why is the place attachment to the environment in some residential neighborhoods low despite the long residence duration. And which memorability factor has more influence on the development of place attachment in

residents? In this regard, and to assess and analyze the memorable factors to improve place attachment in neighborhood residents, and having considered the duration of residence by individuals as a variable, three neighborhoods in the old fabric and three neighborhoods in the new fabric of Shiraz were selected as the case study for the present paper.

2. Literature Review

Since the present study sought to investigate the cognitive effects of memory on the improvement of residents' place attachment in the neighborhoods of Shiraz, the research literature has been reviewed here and the results have been presented in Table 1.

Table 1
Literature review of the effects of memory on place attachment

Researcher	Research Summary	Result
Halbwach (2015)	Investigating the contrast between collective and individual memory and the effects on the sense of place attachment	Collective memory is necessary for the development of the image that a group has of itself and for the development of the sense of place attachment. It needs to go through continuous changes in line with historical changes
Eghbali (2016)	A study on the memory-making elements in the city of Tehran	national ceremonies such as the Iranian national soccer team qualifying to the FIFA World Cup which make people celebrate are considered to be among the factors creating memory and place attachment
Nasar (2016)	A study on memorability and its effects on place attachment	the two factors of imageability and the effects of individuals' emotions on a place are considered to be of the most significant dimensions of the memories which affect place attachment
Lotfi (2017)	Investigating the dimensions of memorability in the old neighborhoods of the city of Tehran	old neighborhoods have possessed active public spaces such as public baths which are of influence on creating memories and social interactions and the residents' place attachment
Misztal (2017)	Investigating collective memories and their relations with traditions and their effects on place attachment	the importance of having origins in the past and its role in understanding the identity and place attachment and the significance of having a sense of collective identity which is enforced via a bond with the past in neighborhoods
Nofel (2017)	A study on the indicators of collective memory which affect sense of attachment	measuring the effects of different memorable factors on the sense of attachment and urban identity through variables such as social, economic, and physical variables
Paez (2017)	Investigating the residence duration factor and its relationship with collective memory	memories possess social contents because they are formed at the presence of others and lead to sense of attachment and humans tend to remember collective memories better
Siew (2017)	Comparing collective memories in old and new cities in Asia	the new generation cannot take part in the collective memory and sense of attachment of their parents and are incapable of perceiving collective memory from the surrounding environment
Varesi (2017)	Investigating urban identity through the passage of time and its relationship with the sense of attachment of the residents	the social environment in a neighborhood provides the possibility for social supervision and controlling others' behavior which leads to positive memory
Azadi (2018)	A study on elements influential on developing collective memory in squares	components such as sociability affect development of memory via the three methods of preparing for the occurrence of event, mental image, and preparing for continuity of memory
Esmailian (2018)	Investigating the indicators which create collective memory and sense of attachment	the concepts of physical place, meaning of place, and activities and events are the three basic concepts for development of collective memory, each of which having different levels of influence
Hosseini (2018)	Investigating the role of collective memory in revitalization of Lahijan	using public arts proportional with the historical fabric and using the works of native artists and preserving theatrical ceremonies such as Ta'zieh
Lewicka (2018)	A study on residence duration and its relationship with collective memory	a background of residence in a city or town is a factor which reinforces collective memory and place attachment. Immigration destinations possess fewer collective memories in comparison with older cities
Soltani (2020)	Investigating memory development in Shahid Chamran Boulevard in Shiraz	from the users' viewpoint, activities and meaning play a more important role in memorability than that of physical elements
Khak zand (2020)	A study on the effects of religious rituals on collective memory and sense of attachment	changes resulted by the religious rituals of Muharram, though being physical and visual in nature, possess long-lasting intellectual effects and are considered to be part of the collective memory of a city

Nazer Safavi and Khastou (2018)	Investigating the Effective Factors on the Sense of Place in Relation to Urban Migrations (Case Study: City of Qazvin)	in the sense that the amount of migration was lower for the people with higher levels of belonging, this relationship was statistically proven as the resulted levels of meaningfulness is less than 05/0, therefore the main hypothesis of the research is validated.
Rezaei (2018)	A Creative Cycle of Promotion: From Architectural Creativity to the Sense of Place and its Resulting Creativeness	As an expanded instrument for the evaluation of an environment in the provision and improvement of users' creativity, and secondly, as the theoretical foundation of a structural pattern for designing creativity enhancer environments. Therefore, it might be cited the findings of this research points to a cycle of promotion: From Architectural Creativity to the Sense of Place and its Resulting Creativeness.

With a review of the related literature, it can be stated that no significant researches have been done in the field of the cognitive effect of physical and social memories on the promotion of a sense of attachment for the residents of neighborhoods with a comparison of old and new urban fabrics.

3. Theoretical Foundations

Attachment to the neighborhood represents an individual's positive mental image regarding their place of residence. The continuation of neighborhood bonds creates a sense of commitment in residents which causes them to be eager to preserve this relationship in time and different stages of life. Place attachment and the outcomes of its absence have become one of the important issues in the realm of social studies in recent decades (Shills, 2016: 189). The present research sought to assess the effect of the memory factor on promoting the sense of attachment. In this respect, the sense of attachment has been considered as the dependent variable and memory has been considered as the independent variable.

3.1 Sense of Attachment

Sense of attachment means the existence of a strong bond and an influential factor existing between people, a place, and its components. This bond causes a thorough development of one's interaction with the environment (Relph, 2019; Tuna, 1974). Experience is the key part of the perception of a place and its physical factors (Javanforoozandeh, 2016). Thus, meaning in a place is directly related to the kind of human perception and the social issues related to it. Previous researches indicated that as the relationship of an individual with a place (duration of residence in neighborhoods) grows longer, the knowledge and perceptions of humans and development of memory of that place increases to the same extent and the probability of the physical and social sense of attachment increases, as well (Bonaiuto et al, 1999; Hidalgo et al, 2019). Sense of attachment to a residential neighborhood is among the emotional, cognitive, and behavioral bonds that one has with a residential place and causes a commitment to the residential area by the residents and it also refers to the eagerness to maintain that relationship through time and stages of life (Amir Kafi and Fathi, 2011:33; Halbwachs, 2015). The relationship of a human with the environment includes a cognitive, social, and emotional approach. Three important factors in the realm of this science are cognition, perception, and emotion. Perception, in the approach of this science, is a part of human intellect in

which information from the environment is collected through the five senses. Cognition is a method of acquisition, storing, organizing, and retrieving information perceived from the environment. Finally, emotion is a part of the human being's instinctive reaction to the physical and social environment (Gifford et al, 2002). From a social perspective, a sense of attachment to a place paves the way for residents to have more supervision on the neighborhood affairs and to confront environmental threats (Tawahi et al, 2009: 49). A review of the aforementioned points suggests that the sense of place attachment possesses a physical dimension and an environmental dimension. Social attachment is mainly based on social actions and interactions in the environment. It is formed based on the social environment theory where the environment contains a combination of social elements in which an individual seeks attachment (Varsi, Alizadeh, and Salehi 2017). Physical attachment is part of human cognition and identity taken from environmental elements and components (Kashanijoo, 2017). Physical and social factors cause the development of memory and, in turn, the promotion of the residents' sense of attachment to the living space (Canter, 1971).

3.2 Memory

The term 'memory' is defined in the Longman Dictionary as an individual's capability to remember objects, places, and experiences (Longman, 2010: 1093), and in the Webster's Dictionary, it is defined as the capability or process of recalling or reproducing what is learned or memorized, specifically via the means of recollection of meanings (Merriam-Webster, 2003: 726). Development of memory requires an event to take place or some experience to be gained where the longer one's duration of residence in a place is, the higher the amount of memory and sense of attachment to the place will be (Habibi, 2018a: 17). Some studies have reported a direct relationship between the duration of residence and one's eagerness to develop and extend social and physical relations (Tuan, 1997; Relph, 2019) (Poorandokht Saadati, 2020). Perception of space via memory is transmitted to an individual in two different ways which are memories triggered by social factors and physical factors (Gustafson, 2018: 65; Hung Ng, et al 005). In terms of the concepts of memories, it can be stated that while the concept of memory in biological and cognitive sciences is mostly recognized as a personal-environmental capacity, social sciences often refer to memory as a collective phenomenon. From the different types of nationalism in the fields of history and human sciences to

the different forms of traditions and memorial ceremonies in the fields of anthropology and sociology, all approaches share a common point stating that collective memory is a transpersonal memory that is formed in a space (Wilson, 2016). The cognition of a place is a social phenomenon. Places are identified by what others say about them and each individual refines the received information concerning their social features such as social class, age, ethnicity, specialty, etc., and develops an image of the place (Hauge, 2019: 7). The development of memories originating from social attachment consists of a set of personal and collective narratives and stories that coincide with a place and are influential on social attachments to a place (Habibi, 2018b: 35). This sense leads to a bond between a human and a place in such a way that the individual views themselves as belonging to the place and imagines a personal role based on their experience of signs, meanings, and functions (Jorgensen and Stedman, 2006). This role is unique to the individual and the place is, thus, and respectable to them. A place develops a sense of belonging and attachment due to the possibility of occurring a social relationship and shared experience (Pakzad, 2018: 319). Social memory may consider events occurring during one's life or even before their birth as part of the culture of local ethnicities. For the latter, what is remembered is not an individual's personal experience, rather it is related to orally transferred traditions, narratives, and one's personal motivation to discover events from the past (Lewicka, 2018: 1-23). As for the concept of physical memory, it can be stated that an environment, in addition to physical elements, consists of codes perceived by people based on roles and expectations. Place attachment is an important factor for the harmony of individuals and the environment, satisfaction of users, and ultimately, sustainable presence in the place (Fallahat, 2006: 94). The process which is created via the development of psychological attachment to the environment consists of familiarity, emotion, excitement, and memory types (Cross, 2005; Esmaeian and Ranjbar, 2018). The concept of a place is beyond only success or origin. Places are

intertwined with more meaning and emotion and this reveals the difference between place and space (Hauge, 2019: 5). The fundamental and inseparable concept of sense of place refers to human aspects and what transforms a space into a place is being touched by deep meanings and concepts which form memory through time (R. Cuthbert, 2019). The measures of collective memory which have formed the theoretical framework of the present study and have a significant role in creating collective attachment to a place are divided into two categories of social infrastructure and physical infrastructure (Cuthbert, 2019). The measures influencing the probability of the development of collective memory in cities include familiarity of residents with the neighborhood, neighborhood relations, etc. and the measures related to the development of physical and spatial memory include neighborhood center features, signs, introversion, etc. (Mirmoghtadai, 2019: 5; Hidalgo et al, 2019: 120).

4. Methodology

As mentioned before, the present study aimed to analyze and measure the memory indicator to improve the sense of attachment of residents towards the living space. The present research was a comparative study using the analytical-descriptive method. The process of conducting the research has been defined in 7 steps: the first step included extracting the memorable factors which are influential on residents' sense of attachment. For this purpose, the memory indicators were extracted via the documentary-analytical method. The results from the theoretical foundations' section revealed that the physical and social indicators were the factors that mostly affected the promotion of the sense of attachment in the residents of neighborhoods in Shiraz. Therefore, concerning the theoretical foundations mentioned about the concepts related to place attachment and also the social and physical dimensions of memory, the theoretical framework of the research was determined as presented in Figure 1.

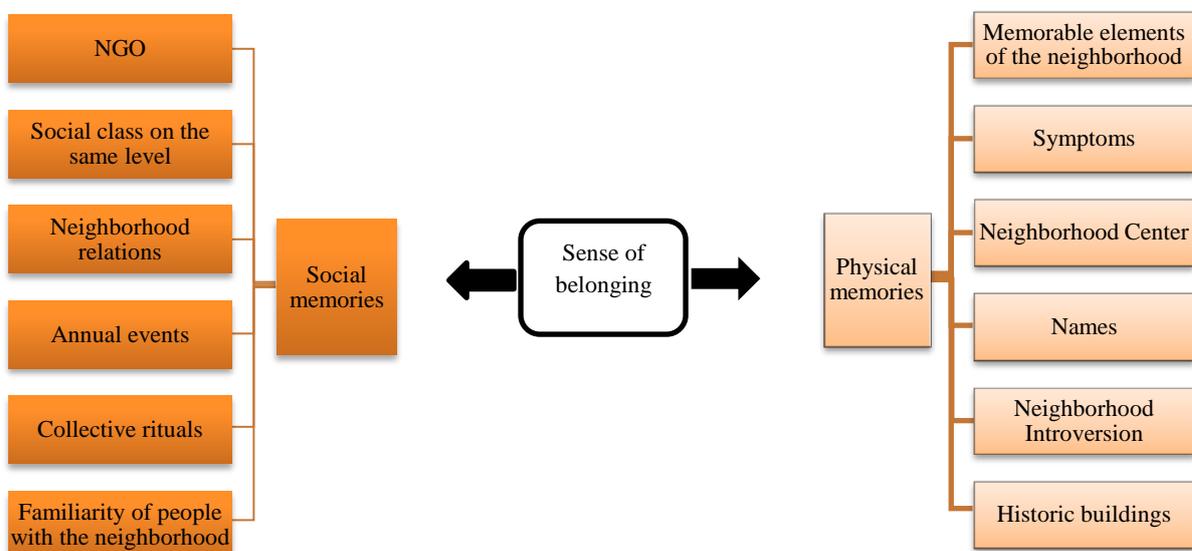


Fig .1. Theoretical framework of the study (dimensions of memory influential on residents' sense of attachment) (Mirmoghtadai, 2019: 5; Cross, 2019; Motalebi, 2019: 55; R.Cuthert, 2019; Hidalgo et al, 2019: 1)(Hamzeieha et al,2018)

Given what was proposed in the section on theoretical foundations and extraction of the research framework, a questionnaire having 20 questions has been designed in two areas of the cognitive impact of the role of physical and social memories on the sense of belonging of residents of old and new urban contexts. The questions have been assessed in the form of nine main questions in the area of physical memories, where the neighborhood's memory-making elements include two questions about the amount and quality of memory-making while one question refers to the quality and impact of signs. In assessing the concept of the neighborhood center, two questions have been formed in the field of the quality of social interactions and the quality of the desire to attend; one question has been allocated to access to the neighborhood center and introversion and one question to the impact of historic buildings on the desire to stay in the space. Finally, to assess the impact of names, two questions have been designed about the significance of names and their durability. Then, in the field of the impact of social memories on the neighborhood residents' sense of belonging, the questionnaire was assessed for ten main questions. In this regard, one question has been designed for each of the following: the residents' cognition of the place of residence, as well as the amount and quality of the residents' presence in the neighborhood's ritual ceremonies, besides measuring social classes and the impact of non-governmental organizations. Regarding the effect of collective rituals, two questions have been designed for the presence in them as well as the quality of this presence, and four questions concerned the people's quality of presence in the place, the usefulness of presence, and quality and algebra of neighborhood relations have been proposed about the impact of neighborhood relations index on residents' desire to stay. The second step was preparing the main research questionnaire. Features of physical and social memory were considered as the independent variable and residents' sense of attachment was considered as the dependent variable. The questionnaire consisted of 20 questions and the data contents of the questionnaire included 10 items related to the effects of physical memory and 9 items were related to the effects of social memory and, since the questions were designed to measure the effects of the memory factor on the sense of attachment, only 1 item was related to the overall evaluation of residents' sense of attachment to the neighborhood. The reliability of the questionnaire was measured and confirmed to be 0.858 using Cronbach alpha. The research population included citizens from 3 neighborhoods in the old fabric and three neighborhoods in the new fabric of the city of Shiraz

where the Cochran formula was used to select 300 individuals from the old fabric and 342 individuals were selected from the new fabric for the case study. The interviewees were selected from different age groups who have been residing in the respective neighborhoods for more than 10 years. In the third step and to assess the level of homogeneity of the population from the old fabric and the new fabric, the ANOVA test was used. In the fourth step, to investigate the effects of the memory factor on promoting the sense of attachment in the old and new texture, the Spearman Correlation Coefficient was implemented. Subsequently, the fifth step included making use of Tukey's integrated test to compare the effects of physical and social memory on the levels of residents' sense of attachment in different neighborhoods (comparing different neighborhoods). In the sixth step, the paired-samples T-test was employed to analyze the effects of physical and social memory on the improvement of residents' sense of attachment to their neighborhoods and the significance of the differences. Consequently, the Pearson coefficient was used to investigate the correlation of the different elements comprising the physical and social memory component, which influenced residents' sense of attachment to their neighborhoods.

5. Case Study

Shiraz is the center of Fars province and the largest city in the mountain range of southern Iran located at 29 degrees and 38 minutes northern latitude and 52 degrees and 40 minutes eastern longitude. The population of Shiraz in the year 2017 (the solar year 1395) was 1565572, which would increase to 1869001 having added the population living in suburban areas. Shiraz is the fifth largest and most populated city in Iran and the most populated southern city. The surface area of this city is 12990 square kilometers where the length is 90 and the width varies between 20 to 30 kilometers (Afsar, 1972: 324). Shiraz has an east-to-west stretch along which, there are residential areas most of which are of the old fabric as a result of favorable weather, routing, and public development facilities (Falamaki, 2003: 203). The neighborhoods selected for the case study are 3 neighborhoods situated in the old fabric, namely Sang Siyah and Eshagh Beig and Bazaar Morgh, together with 3 neighborhoods located in the new fabric, namely Abyari and Eslahnejad and Havabord. The districts for the case study were selected separately from the old and new fabric considering the similarities of cultural components and possession of the shared physical and social features measured in the present study, as seen in Figure 2.

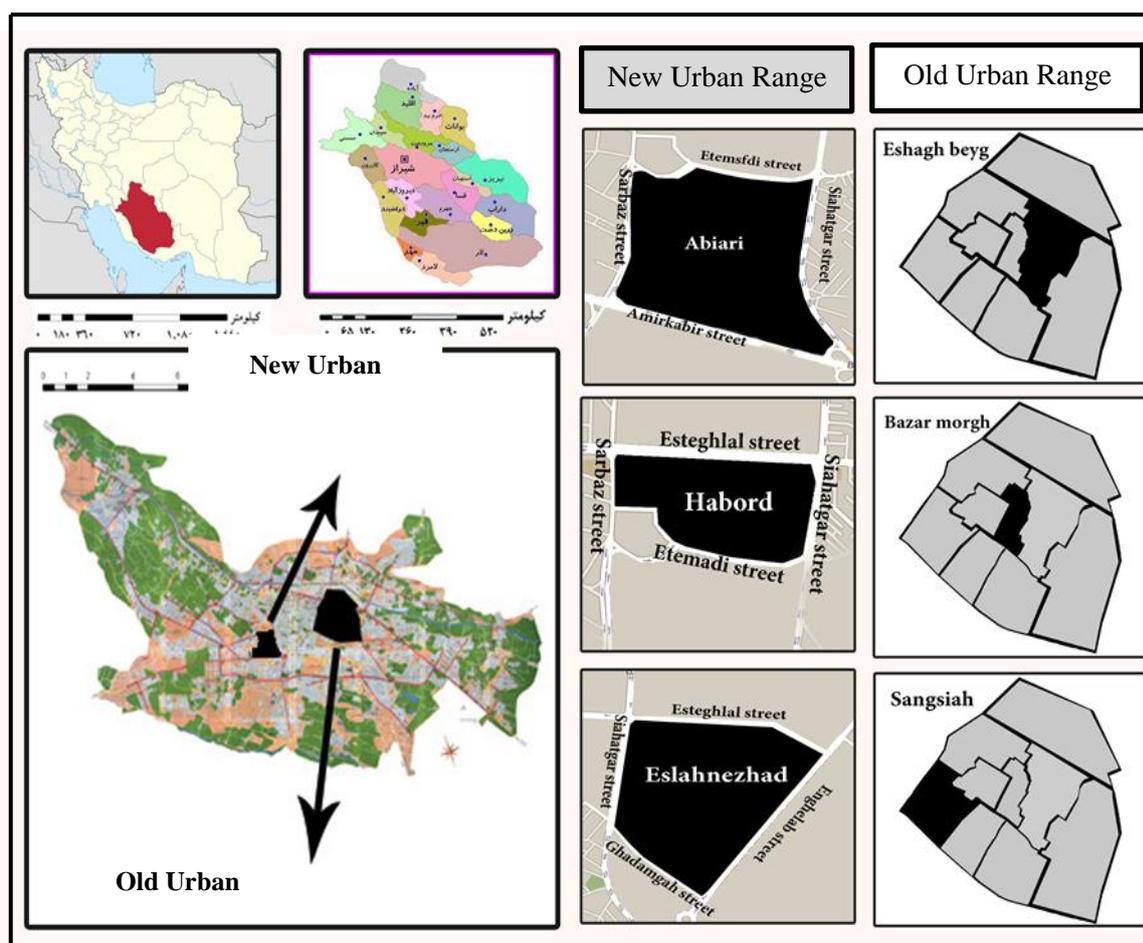


Fig. 2. The area under analysis (source: Shiraz districts 4 and 8 municipalities)

6. Results and Analysis

The present study sought to examine the effects of memory on the improvement of the sense of attachment in neighborhood residents. Having investigated the concept of sense of attachment from different perspectives, one can consider memory to be of the influential factors on the promotion of a sense of attachment. Memorable factors can be divided into two groups of social memory and physical memory, as presented in the diagram in Figure 1. As mentioned before, to examine the homogeneity of the population from the old and new fabric, the ANOVA test was used. The results have been depicted in Table 2. The results from Table 2 revealed

that the mean difference of memory effect on the sense of attachment promotion was statistically insignificant since the P-value of the memory indicator in the neighborhoods, of the old and new fabric separately, was obtained to be above 0.001 and, thus, no significant relationships existed between the different groups of the same category and it can, therefore, be stated that the effect of physical and social memory on the promotion of residents' sense of attachment in the selected neighborhoods of the same fabric was insignificant and the selection for the case study has been right in terms of similarity of features and homogeneity at the end of the assessment.

Table 2

Assessing the significant relationship between the effect of sense of attachment arising from the effect of memory in the neighborhoods of the old and new fabric separately using the ANOVA test

The effect of memory on the sense of belonging	Sense of belonging	Average	rate	Total rate	F	DF	P.VA LUE
Physical memories in the old fabric	Between groups	10.25	2.020	273.5	1.124	2	0.326
	Within the group	9.12	271				
Social memories in the old fabric	Between groups	7.58	1.516	137.46	1.657	2	0.193
	Within the group	4.57	135.9				
Physical memories in New fabric	Between groups	10.70	2.14	294.24	1.312	2	0.198
	Within the group	9.38	292.1				
Social memories in the new fabric	Between groups	8.85	1.617	144.77	1.814	2	0.278
	Within the group	7.03	143.1				

To investigate the relationship between memory and improvement of the sense of attachment in neighborhoods, the Spearman correlation coefficient was

used. The results from this test have been presented in Table 3.

Table 3
Spearman correlation coefficient between the memory factor and sense of attachment

urban	Memory variables in neighborhoods	Variable sense of belonging			Relationship type	Existence of a relationship		
		P.value	N	Spearman correlation coefficient				
Old fabric	Sangsiah	0.000	30	0.671	Direct	Ok		
	Bazarmorgh			0.001	30	0.443	Direct	Ok
	Eshagh beyg	0.000	30	0.509			Direct	Ok
New fabric	Abiari		0.003	30	0.331		Direct	Ok
	Eslahnejad	0.000	30	0.271			Direct	Ok
	Havabord	0.001	30	0.168			Direct	Ok

The results from the Spearman correlation coefficient revealed that a significant relationship existed between the sense of place attachment and memory in all neighborhoods from the old and new fabric (significance level lower than 0.005). This relationship was direct and significant for all neighborhoods. To measure and compare the effect of social and physical memory on residents' sense of attachment to the living space in different neighborhoods, the integrated Tukey test was implemented. In this procedure, if P-value < 0.001, a significant difference existed in the neighborhood in terms of the effect of memory on residents' sense of attachment with another neighborhood in comparison, and the mean difference was then asterisked; and if the mean difference of the intended neighborhood was a positive value, it would mean that it had a higher influence in terms of the effect of memory on the attachment sense in comparison with the other neighborhood and if this value was negative, it would mean that the comparison had lower influence. In Table 4, the researcher has embarked on

assessing the effects of memory on the sense of attachment and comparing it in different neighborhoods. The results from this test signified the lack of a highly significant difference (effect of memory on the sense of attachment in different neighborhoods of each group in the old and new fabric). However, it can be stated in general that in terms of the effects of physical memory on the improvement of the sense of attachment in the old fabric, the Eshagh Beig neighborhood possessed the highest effect and the Bazaar Morgh neighborhood the lowest effect, while in the new fabric, the Abyari neighborhood had the highest effect and the Havabord neighborhood possessed the lowest effect. In addition, in terms of the effects of social memory on the promotion of attachment sense, the Sang Siyah neighborhood had the highest effect and the Bazaar Morgh neighborhood had the lowest effect in the old fabric, while the Abyari neighborhood possessed the highest effect and the Havabord neighborhood has the lowest effect in the new fabric.

Table 4
Comparison of the neighborhoods of the old and new fabric in terms of the effects of physical and social memory on the attachment sense using the Tukey integrated test

Urban	The effect of memory on the sense of belonging	Location	Dependent neighborhood	difference in averages	Standard deviation	P.VA LUE
Old fabric	Physical memories	Sangsiah	Eshagh beyg	-0.3	0.427	0.762
			Bazarmorgh	00.34	0.427	0.706
	Physical memories	Eshagh beyg	Bazarmorgh	0.64	0.427	0.293
	Social memories	Sangsiah	Eshagh beyg	0.05	0.302	0.985
			Bazarmorgh	0.5	0.302	0.225
Social memories	Eshagh beyg	Bazarmorgh	0.45	0.302	0.298	
New fabric	Physical memories	Abiari	Eslahnejad	0.32	0.212	0.985
			Havabord	0.37	0.212	0.312
	Physical memories	Eslahnejad	Havabord	0.05	0.212	0.415
	Social memories	Abiari	Eslahnejad	0.11	0.317	0.972
			Havabord	0.22	0.317	0.652
Social memories	Eslahnejad	Havabord	0.11	0.317	0.334	

To measure the level of residents' sense of attachment to the living space caused by physical and social memory, concerning the presence of the memory indicator as to the independent variable and sense of attachment as the

dependent variable, the paired-samples T-test was used according to which the findings have been presented in Table 5.

Table 5

The levels of effect of memory on the sense of attachment of residents in the neighborhoods of the old and new fabric based on the paired-samples T-test

The effect of memory on the sense of belonging	N	Average	Min	Max	Standard deviation	P.VALUE
Physical memories in the old fabric	300	34.22	27	40	3.02	0.000
Physical memories in New fabric	342	22.97	13	29	1.01	0.000
Social memories in the old fabric	300	41.86	32	48	2.14	0.000
Social memories in the new fabric	342	15.27	8	21	1.45	0.000

As seen in the table above, the mean of the sense of attachment caused by physical and social memory has been considered as a single result in all neighborhoods. The mean of individuals' sense of attachment in the intended case study and population from the old fabric in terms of physical memory (34.23 + 3.02) was lower than the mean of individuals' attachment sense in the intended case study and population from the old fabric in terms of social memory (41.87 + 2.14) having P. value < 0.001. The mean on individuals' sense of attachment in the intended case study and population from the new fabric in terms of physical memory (22.97 + 1.01) was higher than the mean of individuals' attachment sense in the intended case study and population from the old fabric in terms of social memory (15.27 + 1.45) having P. value < 0.001. Based on this assessment, the mean of physical memory effect in comparison with social memory on the promotion of attachment sense was lower in the old fabric. However, in the new fabric, the mean effect of physical memory in comparison with social memory on the promotion of attachment sense was significantly higher and it can be said in general that the residents' attachment sense to neighborhoods in the new fabric was significantly lower than that of the old fabric. To investigate the correlation between the different elements comprising the social and physical memory component

influencing residents' attachment sense to their neighborhoods, the Pearson coefficient was used. In the Pearson test, the $-1 < R < 1$ relation was in place. The closer R or the correlation coefficient resulted from this test was to 1, the stronger the resulting equation would be and the further from 1 it was, the weaker the equation would be. The Pearson test shows the strength or weakness of the equation. The level of significance or Sig in this equation must be lower than 0.05 the equation so that it could be considered significant. For this purpose, the elements forming the memory indicators effective on attachment sense (diagram in Figure 2) have been assessed in Table 6. Concerning the results from Table 6 for the old fabric, the neighborhood memory-making elements from the physical memory indicator and individuals' familiarity from social memory possessed the highest effect, while the historical monuments factor from physical memory and NGOs from social memory possessed the lowest effect on residents' attachment sense to the living space. In the new fabric, the neighborhood memory-making elements factor from physical memory and neighbors' relations from social memory possessed the highest effects and historical monuments from physical memory and social class from social memory had the lowest effects on improving residents' sense of attachment to the living space.

Table 6

The level of cognitive effect of memory factor on the promotion of residents' sense of attachment based on Pearson correlation coefficient

Memorable indicators Physical and social	New fabric	New fabric	New fabric	Old fabric	Old fabric	Old fabric
	N	Significance factor	Pearson coefficient	N	Significance factor	Pearson coefficient
Memorable elements of the neighborhood	342	0.012	0.522	300	0.000	0.851
Familiarity of people with the neighborhood	342	0.041	0.271	300	0.012	0.731
Collective rituals	342	0.000	0.251	300	0.023	0.701
Neighborhood relations	342	0.021	0.372	300	0.000	0.671
Annual events	342	0.047	0.147	300	0.031	0.641
Symptoms	342	0.083	0.307	300	0.041	0.501
Neighborhood Center	342	0.000	0.417	300	0.000	0.421
Names	342	0.012	0.399	300	0.000	0.402
Social class on the same level	342	0.000	0.112	300	0.015	0.351
NGO	342	0.041	0.132	300	0.003	0.312
Neighborhood Introversion	342	0.041	0.180	300	0.001	0.305
Historic buildings	342	0.000	0.012	300	0.031	0.237

7. Conclusions

Promoting residents' sense of attachment to their homes decreases their emigration from neighborhoods and prevents the destruction of textures and improves their contribution to the prosperity of urban neighborhoods and is, therefore a necessity. Memory is developed by an event or individual or collective experience in a place. Every city or town or neighborhood is a collective biographer of its inhabitants and every space is a reminder of memories that have taken place at different times. Without the shadow of a doubt, one of the factors influential on residents' sense of attachment to their residence is memory and the duration of residence in that neighborhood. However, the studies conducted on the residents of the neighborhoods in new urban textures have revealed that despite the duration of residence increasing in such places, residents' sense of attachment to their living space is lower than that of the old fabric. Therefore, one might conclude that the reason for this difference of attachment sense between old and new fabrics is memory. The memory indicator is divided into two categories of physical and social memory. The present study sought to assess and analyze the relationship between the sense of attachment and memory among the residents of old and new fabric neighborhoods in Shiraz. To test the theoretical pattern, three old neighborhoods and three new neighborhoods in Shiraz were selected and questionnaires were used to determine the residents' attachment sense to their neighborhoods. Analyses of the collected field data were carried out using SPSS software and the results from the ANOVA test signified the homogeneity of the neighborhoods in terms of the features under measurement in both the old and the new fabric. The results from the present research reaffirmed the role of memory in the promotion of residents' sense of attachment in all the

selected neighborhoods. It can be stated in general that in terms of the effects of physical memory on the promotion of a sense of attachment in the old fabric, the Eshagh Beig neighborhood possessed the highest and the Bazaar Morgh neighborhood possessed the lowest effect, while in the new fabric, the Abyari neighborhood possessed the highest and the Havabord neighborhood possessed the lowest effect. In terms of the effect of the social memory indicator on the promotion of a sense of attachment in the old fabric, the Sang Siyah neighborhood had the highest effect and the Bazaar Morgh neighborhood possessed the lowest effect, while in the new texture, the Abyari neighborhood had the highest effect and the Havabord neighborhood possessed the lowest effect. On this basis, the sense of attachment of the residents in the old texture to their neighborhood was higher than that of the new fabric as well as the physical and social memorability factors, which could be influential on the promotion of a sense of attachment, considered separately, existing more in the old texture than the new fabric. In the neighborhoods selected from the old fabric, the social memory factor possessed a higher effect than physical memory on the promotion of residents' sense of attachment to the living space, while in the new fabric the effect of physical memory on the sense of attachment was higher than that of social memory because memory-making social factors rarely form in such neighborhoods. The results from the present study analyzed and assessed the level of influence of the indicators which form the memory on the sense of attachment of residents, which have been prioritized in Table 7 based on the effect of memory-making factors on the attachment sense of residents from the old and new fabric separately.

Table 7

Assessment and prioritization of the effect of memory elements on the promotion of the sense of attachment of residents for neighborhoods

Elements of memory	Memorable indicators	Index code	Priority in the old fabric	Priority in the new fabric	Comparing the effect of memory on promoting a sense of belonging	
					Old fabric	New fabric
Physical memories	Memorable elements of the neighborhood	1	1	1		
	Symptoms	2	6	5		
	Neighborhood Center	3	7	2		
	Names	4	8	3		
	Neighborhood Introversion	5	11	8		
	Historic buildings	6	12	12		
Social memories	Familiarity of people with the neighborhood	1	2	6		
	Collective rituals	2	3	7		
	Neighborhood relations	3	4	4		
	Annual events	4	5	9		
	Social class on the same level	5	9	11		
	NGO	6	10	10		

In the old fabric, the neighborhood memorability factor from physical memory and individuals' familiarity with neighborhood from the social memory possessed the highest effect, while the historical monuments factor from physical memory and the NGOs from social memory possessed the lowest effect on the promotion of residents' sense of attachment to their living space. In the new fabric, however, the neighborhood's memory elements factor from physical memory and neighborhood relations from social memory possessed the highest effect, while historical monuments from physical memory and social class from social memory possessed the lowest effect on the promotion of residents' sense of attachment to their living space. The results from the present paper can be considered to be the point of origin for assessing the cognitive effects of social and physical memory on the promotion of residents' sense of attachment to the living spaces in neighborhoods.

Suggestions

Due to the shortage of sense of attachment among residents of new urban neighborhoods and the result from field studies and documentation presented in the present study, several strategies for improving this factor in new urban neighborhoods have been presented below.

Short-term suggestions: To improve the sense of attachment and to have a lasting physical memory in residents' minds, it is better to choose the names for streets and alleys considering the culture and memories of the people residing in Shiraz neighborhoods and it is also good for the physical structure of neighborhoods to be marked with factors such as colors in proportion with the fabric and the history and values of the neighborhoods should be placed in neighborhood centers in the form of inscriptions to make people familiar. To improve neighborhood relations, it is suggested that cultural institutions be formed in neighborhoods so that national and religious ceremonies can be held and social interactions can be made and relations can be reinforced.

Long-term suggestions: The importance of paying attention to the memorability elements in neighborhoods calls for conducting studies on the physical structure of the old fabric in Shiraz and the memories originating from people's culture and traditions and extraction of the influential concepts and indicators; and it also leads to efforts to be made to preserve memorable elements of the old fabric in the form of tokens and architectural elements (such as arcs, inscriptions, squinches, porticos, doorways, and openings). It is suggested that the design of urban neighborhood spaces are dedicated to the neighborhood center and green spaces to improve social interactions so that, in addition to reinforcing introversion, space is dedicated to neighborhood gatherings since this can lead to better neighborhood relations and satisfaction of residents.

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