



Presenting the Design Model Based on the Knowledge of the Components Affecting the Sense of Belonging to Place in the Contemporary Houses of Tehran (Narmak 60s and 70s)

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Abstract: The objective of this research is to present a designing model based on cognition of effective components on the sense of belonging to place in contemporary houses in Tehran (Narmak 60s and 70s). The method of conducting the research was considered as a causal method in terms of practical purpose and in terms of implementation and analysis. Using the panel data (PD) method, the research was tested and analysed. The Hierarchical Multiple Regression (HMR) was used for the analysis of the data. The variables under study in this research include natural elements and environmental tranquility, special qualities, access and permeability, aesthetics and identity, social interactions, furniture and utilities, and land use and activities. Gathering information and data in this research, the use of a closed-ended questionnaire (multiple options) related to the design of the center of contemporary houses, was effective on the sense of belonging to the place. The statistical population included all Tehran citizens between 1398-99. Random selection method was employed to select individuals as research sample. On this basis, the number of statistical samples were 328 people (male and female and with age range from 14 to 63 years). The areas of sampling included 1. Houses in Central Narmak, 2. Houses in North part of Narmak and, 3. Houses in Western Narmak. Based on review of opinions and replies of the sample and on the obtained weights, it can be clearly seen that the criterion of concentration is in the first place, the criterion of spatial qualities, accessibility and permeability as the second important and influential criterion in the development and improvement of the recognition model of the components affecting the sense of belonging to the place and the criterion of the sense of physical belonging the place has been mentioned as the third important and influential criterion in the development and improvement of the recognition model of the components affecting the sense of belonging to the place. The most important variables in this research include: 1- Natural Elements and environmental Tranquility, 2- Spatial Qualities, accessibility and Permeability, 3- Aesthetics and Identity, 4- Social Interactions, Furniture and Utilities and, 5- Land use and Activities.

Keywords: *Design Model, Sense of Belonging to Place, Tehran Contemporary Houses, Narmak Place.*

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Introduction

Reviving the sense of belonging to old streets and contemporary houses and social relations to improve the model of knowledge of the components affecting the sense of belonging to the place and the quality of life of citizens, has always been emphasised by researchers and urban experts (Danesh Pejoh, 1393, 17). In the meantime, with an effort to improve the most important factors that make up the recognition model of the components affecting the sense of belonging in the neighbourhood (human interactions, historical memory, etc.), in this research we attempted to investigate the factors for the improvement of the recognition model of the components affecting the sense of belonging (Syaom1, 2020).

Experiences show that the most stable and passionate living spaces are neighbourhoods or busy streets and contemporary homes, because research shows that Iranians were present in their contemporary homes before they were present in the city and the home. And (Eva-Maria2, 2020). Previously, the population of the neighbourhoods included the employed, religious beliefs and, similar ethnic background which, shared a common culture. Overall, the important feature of such neighbourhood was the spirit of collective cooperation and unity in maintaining and improving their neighbourhood (Coppens3 2018). Unfortunately, due to the recent social changes and immigration and indiscriminate development of cities and... neighbourhoods, it has lost its long-standing function and turned into a region, that is, a unit created by the government to implement its own plans. In such a community, people with different cultures and, based on economic status, have settled next to each other and see themselves as in debt to the government. In fact, with this, instead of being responsible for the happenings of the neighbourhood like the old residents, the new residents leave the affairs of the neighbourhood to the government. This will gradually cause the loss of the recognition model of the factors affecting the sense of place in the streets and the dimming of the name of the neighbourhood (Behzadfaar 2016, 11). In the neighbourhood, different formations, such as a building, commercial covered passage, etc., can differentiate the neighbourhood from other streets, giving the residents a sense of direction and a sense of pride, and a model of recognition of the components that affect the sense of place in them. These signs can create a positive and memorable image for visitors (Mohamadi 2016, 36). A part of the existential personality of every human being that makes the model of recognition of the components affecting the sense of belonging to his/her individual place is the place he identifies himself with and is known to others, when he/she thinks about themselves, he/she considers himself/herself connected to that place and considers that place a part of themselves. If we consider the concept of neighbourhood in the form that is evident in the history of Iran, only exclusive to Islamic or Iranian urban planning, we should also consider its characteristics. "In Islamic lands, a city is a collection of homogenous streets that are concentrated in a specific location based on relationships, ethnic, religious, professional or territorial forms and dependencies, and the model of cognition of the components that affect the sense of belonging to a place and, they have maintained their originality like this for years Zamani 2015, 53).

Some infrastructures can be found that have not changed much which, makes it possible to plan and design for the purpose of reviving or continue the model of recognising the effective components that effect the sense of belonging to the desired area. There are deep connections and awareness for anyone in relation to places they were born or grown up in or, where they are currently living and travelling. This connection is the basic source of the cognition model of the effective components on the sense of belonging and personal security and culture (Rogoff, 2023). Sense of place is people's mental perception of the environment and their more or less



conscious feelings of the environment which places the individual in an internal connection with the environment; So that a person's conception and feelings are connected and integrated with the semantic context of the environment. This sense is an aspect that causes space to become a place with special sensory and behavioural characteristics for specific people. Additionally, the sense of place leads to the achievement of the cognition model of the components affecting the sense of belonging to the place for people (Bolin 2018).

The research conducted on artificial environments demonstrates that the environment, in addition to physical elements, includes messages, meanings and codes that people decipher, understand and judge, based on roles, expectations, motivations and other factors. This general feeling that appears in an individual after the perception and judgment of the specific environment, is called the sense of place, which is an important factor in the coordination of the person, the environment and the satisfaction of the users and finally their sense of belonging to the environment with the component cognition model which, affect the sense of belonging to the place and the continuity of presence in them (Branson, 2023). Considering the concept of the sense of place in different perspectives and different levels of the sense of place, the factors that shape the sense of place can be divided into two groups of perceptual-cognitive factors and physical factors (Robert, 2018).

Narmak is considered one of Tehran's old neighbourhoods and, it is covered on both sides in rows of various shops and stores and street sellers who occupy the entire street pavement. Narmak may be considered one of Tehran's residences for the middle class and of course, the students; a suitable place for shopping and enjoying a warm and exciting. Narmak area is covered in trees, shops, arcades and places of amusements and entertainment which is host to Tehranis and other travelers and tourists who seek shopping, entertainment and also renewing the memory of this street. This street creates beautiful views from the combination of history, the presence of people and their gathering, and creates a psychological sense of belonging to the place for the citizens in different seasons. These views can be used to ensure people's needs, visual pleasure and creation of an urban atmosphere and the center of a desirable neighbourhood, however, neglecting to utilise this landscape may reduce tranquility, feeling of effective components cognitive model on the sense of belonging to the place and belonging of citizens citizen to the neighbourhood. The streets of the studied area mostly lack proper physical-spatial quality and it is necessary to improve and organise the physical-spatial in them (Rafeefarr, 1393). The lack of suitable space for pedestrian movement, defined walls, and congestion can be seen in all the streets of the area. Some people go to this place to spend their free time, but they don't achieve social situations and conventional social interactions, which should result in reducing social tensions, making the urban space healthier and more cohesive. Attending to pedestrians in the city, responding to the needs of the model to perceive the factors affecting their sense of belonging in the urban space and then finding solutions to distinguish the pedestrians in the city to improve people's satisfaction in these environments are important in different ways, and the sum of these factors are the main motivations in proposing the study of the model of recognition of the components affecting the sense of belonging to the place to improve the model of recognition of the components affecting the sense of belonging to the place of Tehrani citizens, for conducting this study. The objective of this research is to provide a design model based on the knowledge of the components that affect the sense of place in contemporary houses in Tehran (Narmak 1360s and 70s). Other aims considered include providing appropriate solutions and strategies to respond to the collective memory of citizens by investigating the model of recognising the components that affect the sense of belonging to a place, as well as

achieving positive criteria for the optimal design of the neighbourhood center and being considerate of urban spaces as a place. The model of recognition of the components affecting the sense of belonging is a place maker.

The theoretical framework of the research

Sense of belonging to place as an Indicator criterion in old streets

Belonging to place is defined as an effective bond that people establish with place locations, where they tend to stay and feel comfortable and safe. It defines a place as a space that has become significant; What is an undifferentiated space becomes a place when we know it better and value it (Parson, 2020) attachment in this context can be defined as an emotional relationship between people and a landscape, which goes beyond cognition, preference or judgment. Belonging is a concept that can be broken down into its constituent dimensions and factors at the stage of description, but at the stage of perception it is a general understanding of love and affection towards a place that may not even be described and expressed by a person. Having said that, in separating the different dimensions that make up the sense of belonging, according to what is stated in the literature of the researchers in this field, different dimensions from the physical environment and the architecture of the environment to the psychological factors of the person and belonging to the place are a link between a person or a group and a place, that society contributes to the creation of a recognition model of the components that affect the sense of belonging to a place (Branson, 2023).

The cognition model of the effective components on sense of belonging to place can be described as an emotional and meaningful connection between the person and the place, an emotional link which people would consider as a valuable place to return to (Ricardo, 2020). In fact, belonging to a place is an index through which the distinctiveness of that place can be measured for the people of the place. It is certain that these distinctions are the result of a combination of material and spiritual factors, including the physical environment and architecture, the social environment and the type of activities, the level of culture and history, personal and psychological dimensions (perception, cognition and emotion). Thus, by considering all the dimensions that make up the sense of belonging, it is possible to achieve a more general classification including intrapersonal and extrapersonal factors (John, 2023). Perhaps the most important aspect of belonging to a place is the place itself. What is it about the place that attracts us? This dimension has been tested in different geographic scales, a room in a house, a city, or the world, and in terms of type, it is divided into two levels: belonging to a physical and social place.

Social dimension of the cognition model of the effective components on sense of belonging to place

Some consider the sense of belonging as a result of current social relationships and interactions in a place and consider it the main factor in the formation of this sense. From the point of view of this approach, the sense of belonging to the environment is the result of factors of social interactions that take place in the environment. Based on this approach, the environment contains information and common social signs that humans interact with their environment by understanding and decoding them (Rogoff, 2018).

Reminding a person of a place is a kind of self-remembering, and here the pre-formed mental images of a place make it meaningful and give that knowledge model the components that affect the sense of belonging to a place. A place becomes meaningful when it is understood by a sense and leaves a mental image of itself. In all, the place (body + activity) and the mental image that

remains from it are the most effective factors in shaping the cognitive model of the components that affect the sense of belonging to the place, the place of living, and the person.

Emotional dimension (perception and cognition) of belonging to place

This aspect of belonging emphasises human emotions and feelings towards the place and environment around him and considers the sense of belonging as a result of interaction between a person and physical, social stimuli and activities. Emotional place belonging refers to the feelings, mental states and minds that people have about specific places (Flauid, 2023).

Physical belonging to place

This type of belonging derives from the physical elements and components of the place as a part of the recognition process and the recognition model of the components affecting the human sense of belonging to the place. In his studies, Ruggiero Lavrakas points to the important and fundamental role of physical belonging and considers it as rootedness on the basis of which, a person remembers the environment along with its physical elements in shaping the meaning of belonging.

The physical environment affects a person's dependency on himself by fulfilling a level of material and spiritual needs of human. Dependence on place is strengthened and continues when there is a constructive interaction between the needs of users and their environment. Meeting needs (material and spiritual) and ensuring functions are among these human-place interactions (Nathalie, 2021). The physical elements of the environment, in addition to meeting a level of human needs in the process of activities (which itself causes dependence on the place), in determining the recognition model, the components that affect a person's sense of personal and socio-cultural place of belonging play a fundamental role, so that Rappaport, by emphasizing the role of socio-cultural components in the formation of the physical environment, by presenting the theory of non-verbal communication, the environment It divides a set of fixed, semi-fixed and mobile physical elements that a person infers his own meaning and concept from the environment and its elements based on his cultural codes and ideas (Nalise, 2020).

Sense of belonging and sociability of space

Man is a social being whose desire and perfection is to live in a collective form. Sociability is a set of trends and strategies that provide the basics of his collective life and prepare him for social life. Architectural sociability is also a characteristic that provides the context for social interaction in the design of architectural spaces and urban planning. The most important feature of the public space according to its lexical and functional meanings is the ability to be used collectively and universally, and therefore, the urban public space must be a platform for communication and collective use by citizens. Also, the public space is defined when it helps to increase the opportunity of collective interaction and can cause the gathering and collective communication of citizens. Therefore, the sociability of architecture is so important in the design of public spaces that it cannot be called a public space without this characteristic. The socialisation of architecture has a set of important achievements in line with human social life, the most important of which are: improving the spirit of solidarity and collective life, increasing the recognition model of the components affecting the sense of belonging to a place, promoting collective participation, increasing the recognition model of the components affecting the sense of belonging to a place collectively, establishing stable social ties, laying the groundwork for civil campaigns and improving public security.

The main function of the public space is to provide a platform for people's presence, so its

social and cultural dimensions have a special place (Mojtabah, 2021).

As the most important factor in the dynamics of urban spaces, humans need a suitable platform for effective presence in public spaces. Responding to human social needs and providing the necessary opportunities in the field of gaining his social experiences requires the existence of space and physical accommodation, and public space is considered a huge capacity in response to this aspect of human life in urban societies (Daneshpour, 1386; 39).

Through creating structures in the city, human beings have always fulfilled their inherent need to establish social relations, spaces that are socially active and provide the possibility of face-to-face human communication within the city community and in an organised body. Creating public spaces in different scales of the city that are available to the public and can respond to the needs of all groups, is included in this category. The public space of places as the first place to establish a relationship between a person and his/her community has received much attention from sociologists, urban planners and designers in recent years. The public space at the neighbourhood level should be able to provide opportunities for social interactions and therefore, create a sense of local cohesion (Giles, 2020).

Research method

The research method is applied in terms of objective and causal method in terms of implementation and analysis. This research is applied in terms of its objective, causal in terms of study method, descriptive and content analysis in terms of method and the nature and approach of dealing with the problem. Also, the method is based on statistics in terms of comprehension, representing, analysis and assessing and checking the accuracy of the collected information. In this regard, using the panel data method, the research is tested and analysed.

Introducing the area

Tehran's 8th Municipal region is one of its urban regions situated on the east side of the metropolis. Region 8 is located in the gentle slopes of the Alborz Mountain range in the north of (Se Tapeh) ranges to the east of Tehran. This region reaches to the Sorkheh Hesar Woods and Se Tapeh Ranges via its southern neighbour (Region 13) and, to the Alborz Heights via its northern neighbour (region 4). Region 8 in general, in terms of municipal divisions, from the north and northeast to Resalat Highway (region 4); from the south to Damavand Street (District 13); From the west, it leads to South Sablan and Ostad Hasan Bana (Region 7). The region has 3 districts and 20 audit districts and 13 council districts:

- District One: from the north and east, leads to Resalat Avenue and from the south to Damavand Avenue and, from the West, it leads to Shahid Ayat Street.
- District Two: from the north, it leads to Resalat Highway and from the south to Damavand Avenue and Maseel Bakhtar; from the east to Shahid Ayat Street and from the West to the Shahid Madani Street.
- District Three: from the north to the Resalat Highway, from the south to the Damavand Avenue, from the east to the Maseel Bakhtar St. and from the west to the Ostad Hasan Bana and Southern Sabalan Avenues

For this purpose, using regression model, architectural models are first calculated based on the model of recognition of the components affecting the sense of belonging to the place. Then the patterns of architectural psychology in the designs were assessed and scored using the factor analysis model. The methods of collecting information and data in this research are the use of a closed-end-

GIS map of Tehran 8th Region

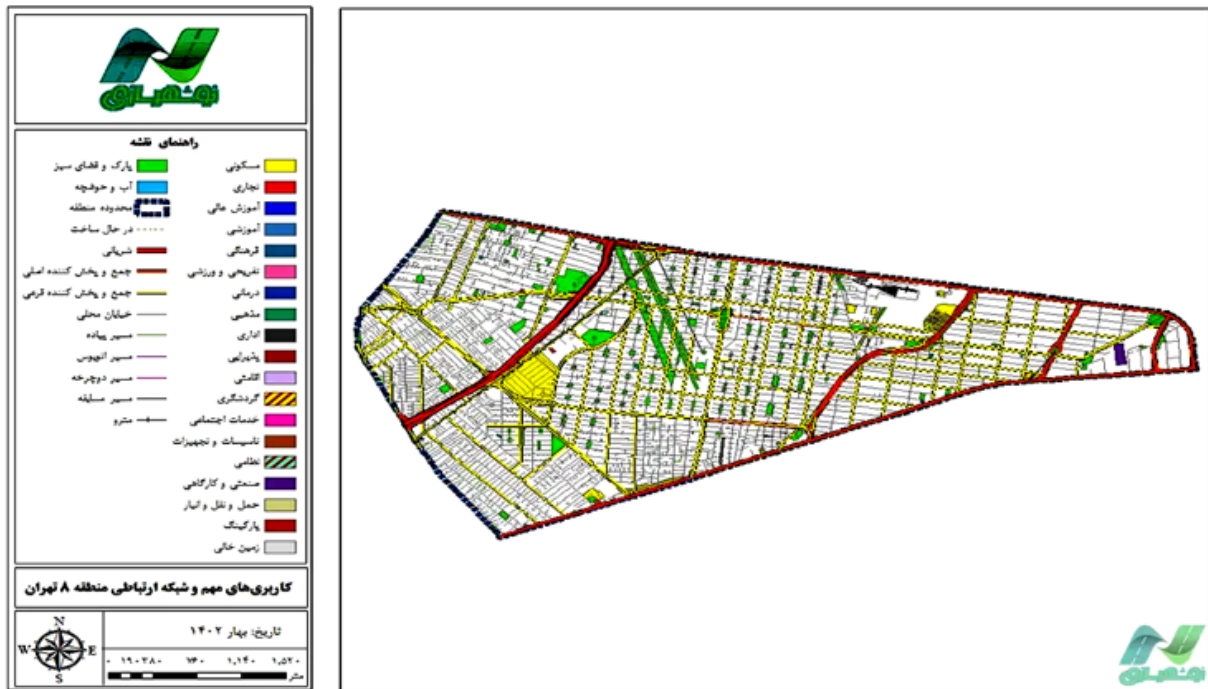


Figure 1 – Regional plan – GIS map



Figure 2 – District Plan – GIS map – Narmak Neighbourhood

ed questionnaire (multiple options) which includes the measurement and assessment of specific mechanisms in relation to the design of the center of contemporary houses to improve the model of recognising the components that affect the sense of belonging to the place. In fact, the intended tests examine, evaluate and analyze the environment and existing conditions, education processes, incentives and limitations, and impasses and problems. It is natural that, apart from the questionnaire, other qualitative information will be used in different parts of the research, such as the background of the research and stating the necessity of doing it. The statistical population of the research includes all citizens of Tehran in 2018-2019. Due to the high number of citizens and the limitations of the research, the researcher has used the random sampling method (those citizens of Tehran and other people referring to Narmak neighbourhood during the work of this research (one month period)). On this basis, the number of statistical samples was equal to 328

people (male and female and with age range from 14 to 63 years).

Questionnaire of the studied scope of sense of place:

To examine the conditions of the recognition model of the components affecting the sense of belonging to the place of Tehran citizens, the questionnaire of the studied scope of the sense of belonging to the place with 40 closed questions and on the Likert scale (completely agree, agree, no opinion, disagree, completely disagree) was employed. Face validity has been used to check the validity of the research measurement tool (questionnaire and focus group discussion guide questions) by referring to experts (professors and a number of social science experts). Cronbach's alpha was used to evaluate reliability of the questionnaire. The results obtained were correlated and the reliability of the measurement tool was confirmed. The research variables (which were examined in the form of a Likert scale) the alpha value for each variable 1-Sense of place belonging (the quality of urban landscapes, place belonging, social interactions, territory and personal property) is equal to 0.853, social capital (the responsiveness of the environment to leisure needs, evocativeness of the environment) equal to 0.856 and spatial and physical characteristics (color of the environment, spiritual links with the environment and the presence of natural elements in the environment) equal to 0.888.

Analysis of research data

Examining the principles and rules of improving the recognition model of the components affecting the sense of belonging to a place The principles and rules of improving the recognition model of the components affecting the sense of belonging to the place considered in this research to explain and present the main indicators, are as follows:

Based on the review of the opinions of the elites or those questioned, it is possible to determine the impact of the importance and weight of each of the principles and rules of the improvement of the model of recognition of the effective components on the sense of belonging to the place, which in the research questionnaire as the fields of development of the improvement of the model of the recognition of the effective components. It was pointed out that the sense of belonging to the place has been considered in the studied area. On the basis of review of the opinions and responses of the statistical sample, we can clearly see that based on the obtained weights that the criterion of concentration is the first, the criterion of spatial qualities, accessibility and permeability as the second important and influential criterion in the development and improvement of the model of recognition of effective components. The sense of belonging to a place and the criterion of the sense of physical belonging to a place have been mentioned as the third important and influential criterion in the development and improvement of the recognition model of the components affecting the sense of belonging to a place.

Results of data normality test:

(Kolmogorov–Smirnov test)

Valid Kolmogorov–Smirnov test was used to test the normality of the residuals. The value is calculated. The Kolmogorov-Smirnov statistic for different variables is at the ideal level for which the p-value calculated by SPSS software is greater than 0.05, and thus it can be said that the residuals of the regression have a normal distribution.

4-3- Examining the average and deviation components of the studied range related to the variables

Rank	Score	Weight	The principles and rules of promoting the model of recognition of the components affecting the sense of belonging to a place	Factors
2	4.750	0.0422	Spatial qualities, accessibility and permeability	
3	4.667	0.0438	Physical sense of belonging to place	
1	4.917	0.0444	Concentration	
12	4.003	0.0416	Social interactions	
11	4.083	0.0411	Physical sense of belonging to traditional houses	
8	4.217	0.0409	Physical sense of belonging to economic centres and contemporary houses	
4	4.583	0.0403	A sense of physical belonging to the traditional architecture of commercial complexes	
13	3.917	0.0378	Colour of the environment	
5	4.500	0.0425	Response of the environment to leisure needs	
14	3.750	0.0261	Cognitive relation with the environment	
6	4.452	0.0415	Emotional feelings to places of contemporary houses	
8	4.133	0.0368	Evocative environment	
3	4.611	0.0422	Place identification	
10	4.167	0.0423	Personal territory and ownership	
7	4.412	0.0368	Perception of spatial identification	
9	4.750	0.0413	Spiritual links with the environment	
15	3.667	0.0362	Presence of natural elements in the environment	

Table 1- Summary of the analysis (assessment matrix) of the principles and rules of promoting the recognition model of the components affecting the sense of belonging to the place

Kolmogorov–Smirnov test	
Significance level	Value of statistic
0/016	0/028 Natural elements and environmental comfort
0/054	0/025 Spatial qualities, accessibility and permeability
0/07	0/033 Aesthetics and identity
0/063	0/029 Social interactions, furniture and utilities
0/082	0/041 Land use and activities

Table 2- Results of normality of the data

Variables	Average	Deviation of the study range
Natural elements and environmental comfort	2.7667	0.98774
Spatial qualities, accessibility and permeability	3.1889	1.0011
Aesthetics and identity	3.4211	1.1544
Social interactions, furniture and utilities	3.1644	1.0241
Land use and activities	3.9111	1.3231

Table 3- Mean values and deviation of the studied range related to the variables

Modeling

To begin with, Mahalanobis distance and Mardia statistic (1971) were employed to check the normality of several variables. Table 10-4 shows the output of this test after model modifications. Considering the absolute value of the critical limit which is equal to 0.392 and this value is lower than the critical limit of 1.96, thus multi-variable distribution based on Mardia statistic is confirmed with 99% confidence (p=0.01). In the following, the measurement model has been designed and explained the degree of relationship between natural elements and environmental comfort with the components of the sense of belonging to the place, using the path analysis method. Thus, the assumed model to explain the components of the sense of belonging to the place is presented in the form of diagram 1-4.

Critical limit	Multi-variable kurtosis	Critical limit	Skewness	Highest	Lowest	Variable
-1.708	-0.427	-1.416	-0.177	15	7	Natural elements and environmental comfort
-0.214	-0.054	-3.754	-0.469	12	4	Spatial qualities, accessibility and permeability
-2.045	-0.511	-1.380	-0.172	12	4	Aesthetics and identity
-2.262	-0.565	-1.936	-0.242	36	15	Components of sense of belonging to place
				2.009	2.302	Mardia statistic

Table 4- Multivariable normality based on Mahalanobis distance and Mardia distribution

Model in structural mode

Before checking the estimation results of the model, it is necessary to check the fit of the assumed model and its indicators. Table 36-4 presents the fit indices of the relevant model. The reason for using the Brazandan model programme is that this programme provides indicators that can be used to measure the overall fit of the model with the data. In fact, the overall fit of the model determines how well the model can explain the data. According to Thompson's proposal, the fit indices include chi-square test (CMIN), Comparative Fit Index (CFI), Normed Fit Index (NFI) and Root Mean Square Error of Approximation (RMSEA). These indices are the most important in examining model fit. (Gamst and Guarino, 2023).

Chi square on degree of freedom in the estimated model is 5.34 which is greater than 3 and, it is not viewable, accepting and catastrophizing (Klein 2011). The value of RMSEA in the assumed model is equal to 1.103, which means an unacceptable fit (1.103 > 0.08). Also, the statistics of NFI and CFI should be higher than 0.9, where these numbers are 0.88 and 0.89, respectively, and these indicators are also unacceptable. In the final analysis, these numbers show that the considered model did not fit well with the theoretical model. Based on this, modifications were made to the model.

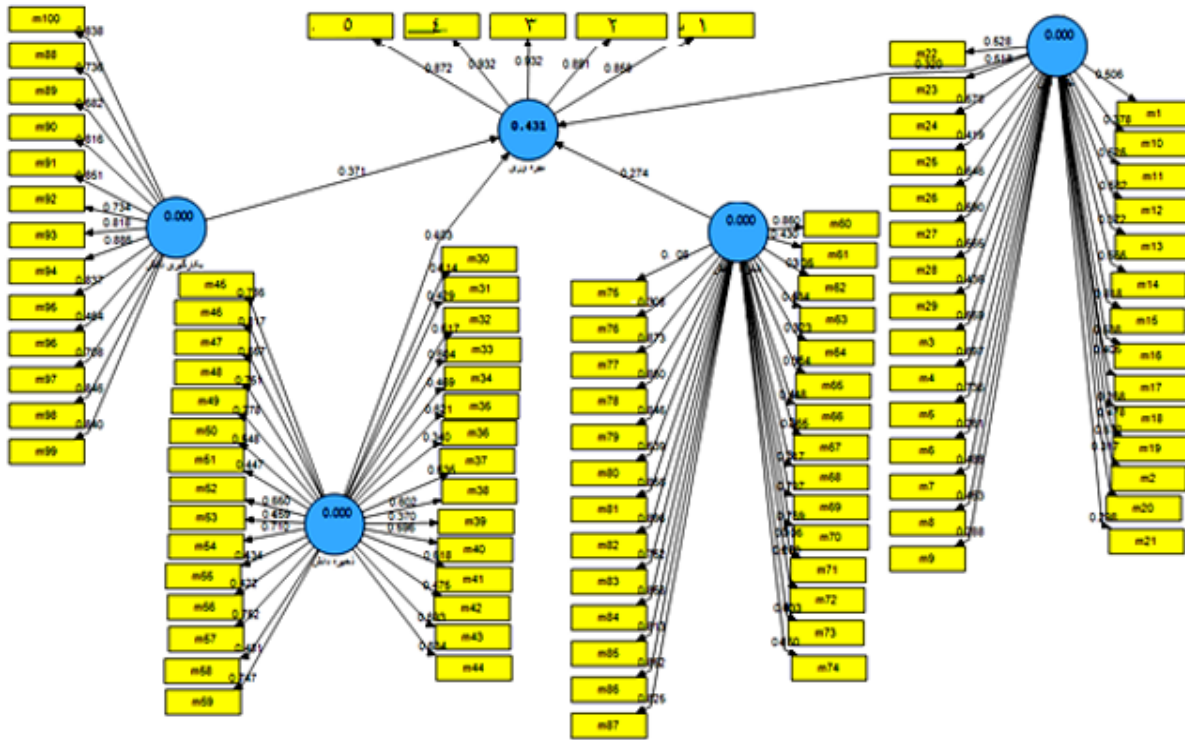


Diagram 1- The model in the structural mode of presenting the design model based on the knowledge of the components affecting the sense of belonging to the place in the contemporary houses of Tehran.

Result	Acceptable model	Independent model	Saturation model	Estimated model	Index	
	-	-	28	119	78	NPARI
			1825.77	0	218.89	χ^2
			200	0	41	df
(Unacceptable)	Lower than	3	20.063	0	5.339	χ^2/df
		0/9	0	1	0.880	'NFI
	Higher than	0/	0	1	0.897	'CFI
		0/08	0.223	-	0.103	RMSEA

Table 5- Fit indices of the model explaining the relationship between natural elements and environmental comfort with the components of the sense of belonging to the place

Model in the significant mode

The chi-square on the degree of freedom in the modified model is equal to 2.921. The value of RMSEA in the model explaining the relationship between natural elements and environmental comfort with the components of the sense of belonging to the effective place is equal to 0.07, which means an acceptable fit. Also, NFI and CFI statistics should be higher than 0.9. These numbers show that the modified model has a good fit. In the following, the coefficients of the model are analysed and conclusions are drawn from the assumptions.

According to the information in Table 11-4, all predictor variables considered in the model, i.e. the components of the sense of belonging to the place, the relationship between natural elements and environmental comfort, and the relationship between natural elements and environmental comfort, have a total prediction ability of 0.36 ($p > 0.01$) of the variance of the mediator variable, i.e. the components of the sense of belonging to the place and the ability to predict, had 0.16 ($p > 0.05$) of the variance of the dependent variable, and these coefficients are both positive and direct.

Reviewing the contemporary houses investigated and considered for the comparative evaluation of compliance with the criteria for the improvement of the recognition model of the components affecting the sense of belonging to the place in them.

Review has shown that social interactions, furniture and facilities, aesthetics and identity, and land use and activities were in the first to third priorities. The investigation has shown that in these contemporary houses, the important criteria for the improvement of the recognition model of the components affecting the sense of belonging to the place have been observed, and therefore it can be stated that the two important criteria with high weight, i.e. the criteria of

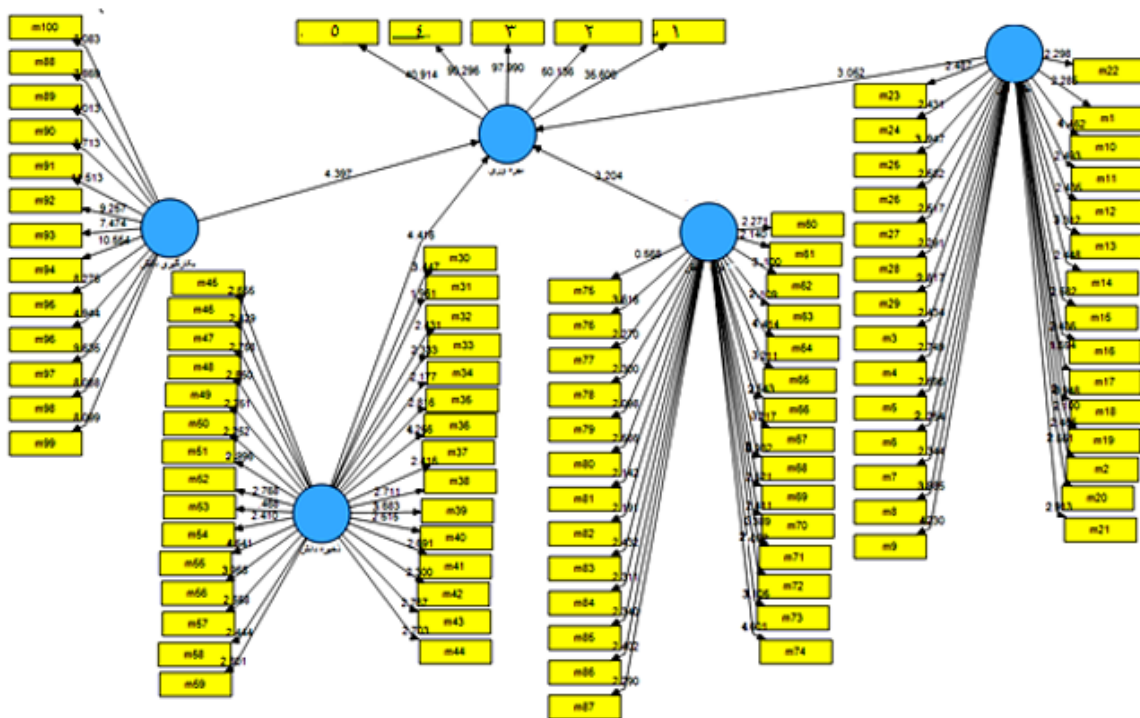


Diagram 2- The model in the meaningful state of presentation of the design model based on the knowledge of the components affecting the sense of belonging to the place in the contemporary houses of Tehran.

The fit indices of the modified model are listed in Table 6-

Table 6- The fit indices of the modified model explaining the relationship between natural elements and environmental comfort with the components of the sense of belonging to the effective place

Result	Estimated model	Index
-	78	NPAR
-	119.78	X ²
-	41	df
Acceptable	2.921	X ² /df
Acceptable	0.934	NFI
Acceptable	0.955	CFI
Acceptable	0.071	RMSEA

Table 7- Squared multiple correlation of the components of the sense of belonging to the place

(Significance level)	(Higher limit)	(Lower limit)	(Estimation)	(Source of change)
0.008	0.413	0.288	**0.364	(Components of sense of belonging to place)

aesthetics and identity and quality spatial aspects, accessibility and permeability have been the only criterion of aesthetics and identity in the first three priorities.

Review has shown that spatial qualities, accessibility and permeability, aesthetics and identity, and natural elements and environmental comfort were in the first to third priorities. The investigation has shown that in these contemporary houses, the important criteria for the improvement of the recognition model of the components affecting the sense of belonging to the place have been observed, and therefore it can be stated that the two important criteria with high weight, i.e. the criteria of aesthetics and identity and quality spatial features, accessibility and permeability have been two criteria in the first three priorities.

The review has shown that natural elements and environmental comfort, land use and activities, and spatial qualities, accessibility and permeability were in the first to third priorities. The investigation has shown that in these contemporary houses, the important criteria for the improvement of the recognition model of the components affecting the sense of belonging to the place have been observed, and therefore it can be stated that the two important criteria with high weight, i.e. the criteria of aesthetics and identity and quality spatial qualities, accessibility and permeability have been the only qualities of space, accessibility and permeability in the first three priorities.

Research discussion and review

As mentioned, this research, according to the nature of the subject and the type of research process, the research method has been applied. The method of conducting the research in terms of implementation and analysis was a causal method. For this purpose, first, the traditional ar-

Table 8-Comparative evaluation of compliance with the improvement criteria of the recognition model of the components affecting the sense of belonging to the place in the southern side of the contemporary houses of Narmak neighbourhood using the Hierarchical Multiple Regression (HMR).

Rank	(HMR) ای	Standard deviation	Average	Requirements
1	0/388	2/35	4/95	Social interactions, furniture and utilities
2	0/394	2/51	4/87	Aesthetics and identity
3	0/427	2/44	4/70	Land use and activities
4	0/430	2/57	3/97	natural elements and environmental comfort
5	0/438	2/39	3/46	Spatial qualities, accessibility and permeability

Table 9- Comparative evaluation of compliance with the criteria for the improvement of the recognition model of the components affecting the sense of belonging to the place in the north side

Rank	(HMR)	Standard deviation	Average	Requirements
1	0/371	2/36	4/75	Spatial qualities, accessibility and permeability
2	0/382	2/27	4/53	Aesthetics and identity
3	0/409	2/22	4/42	Natural elements and environmental comfort
4	0/385	2/18	4/29	Social interactions, furniture and utilities
5	0/356	2/10	4/18	Land use and activities

Table 10- Comparative assessment of compliance with the criteria for the improvement of the recognition model of the components affecting the sense of belonging to the place in the west side

Rank	(HMR)	Standard deviation	Average	Requirements
1	0/355	2/35	4/29	Natural elements and environmental comfort
2	0/391	2/14	4/17	Land use and activities
3	0/342	2/11	4/05	Spatial qualities, accessibility and permeability
4	0/333	1/94	3/86	Social interactions, furniture and utilities
5	0/318	1/65	3/79	Aesthetics and identity

chitectural patterns of the art museum construction plans were calculated using the regression model. Then, the symbolic and sustainable architecture patterns in the construction plans of the art museum were valued and scored using the factor analysis model. To collect research data, a closed-ended questionnaire (multiple options) was employed, in which the views and opinions of experts and citizens of contemporary houses were investigated. The statistical population in this research is made up of the users of the space, that is, the people of Tehran, and random sampling method was used to select the sample of the research. The people who were questioned were chosen randomly from the users of the space and without paying attention to the personal choices of the questioner, they included a high variety of people present in the space. Two methods of qualitative analysis and quantitative analysis were used to analyse the information.

Review of results

It was mentioned that to carry out the process of research work, the analysis of contemporary houses in Narmak neighbourhood of Tehran has been done from the point of view of the improvement criteria of the recognition model of the components affecting the sense of belonging to the place with the effectiveness of the recognition model of the components affecting the sense of belonging to the place. For this purpose, considering a few contemporary houses as a statistical sample which was obtained based on the random clustering method from all the contemporary houses of the 60s and 70s in Narmaki neighbourhood of Tehran, and a questionnaire that conforms to the criteria for improving the component recognition model. effects on the sense of belonging to the place were distributed among them. The regions investigated included: 1- the central side of Narmak neighbourhood contemporary houses, 2- the northern side and 3- the western side. In examining the principles and rules of promoting the model of recognition of the components affecting the sense of belonging to a place, we examined the following components: spatial qualities, accessibility and permeability - sense of physical belonging to a place - focus - social interactions - sense of physical belonging to traditional houses - sense Physical belonging to economic centers and contemporary houses - sense of physical belonging to the traditional architecture of commercial complexes - color of the environment - responsiveness of the environment to leisure needs - cognitive relationship with the environment - emotional feeling to the places of contemporary houses - memorability of the environment - identity building Place and territory and personal property - perception of spatial identity - spiritual links with the environment and - presence of natural elements in the environment.

On the basis of the review of the opinions and responses of the statistical sample, it can be clearly seen based on the obtained weights that the criterion of concentration is the first, the criterion of spatial qualities, accessibility and permeability as the second important and influential criterion in the development and improvement of the model of recognition of effective components. The sense of belonging to a place and the criterion of the sense of physical belonging to a place have been mentioned as the third significant and influential criterion in the development and improvement of the recognition model of the components affecting the sense of belonging to a place. In this research, the most important variables investigated included: 1-natural elements and environmental comfort, 2-spatial qualities, accessibility and permeability, 3-aesthetics and identity, 4-social interactions, furniture and facilities, and 5-land use and activities. have been. The investigation has shown that there is a correlation between all the questions of the main variables and the main variables with the dependent variable in the values of CR, AVE and factor load. Therefore, it can be said that the criteria for the improvement of the recognition model of the components affecting the sense of belonging to the place in the contemporary houses of Narmak neighbourhood of Tehran have been considered. The survey showed that the criteria of aesthetics and identity and spatial qualities, access and permeability had higher weights than other criteria. Therefore, in the comparative analysis of the neighbourhood s, if these two criteria were among the first to third criteria, it can be stated that those contemporary houses had a higher intensity of the indicators of the improvement of the recognition model of the components affecting the sense of belonging to the place. In the comparative assessment of compliance with the criteria for the improvement of the recognition model, the components affecting the sense of belonging to the place in the southern side of the contemporary houses of Narmak neighbourhood, such as social interactions, furniture and facilities, aesthetics and identity, land use and activities, natural elements and environmental comfort and spatial qualities, access and permeability were investigated. The review showed



that social interactions, furniture and facilities, aesthetics and identity, and land use and activities were in the first to third priorities. The investigation has shown that in these contemporary houses, the important criteria for the improvement of the recognition model of the components affecting the sense of belonging to the place have been observed, and therefore it can be stated that the two important criteria with high weight, i.e. the criteria of aesthetics and identity and quality spatial aspects, accessibility and permeability have been the only criterion of aesthetics and identity in the first three priorities. The review showed that spatial qualities, accessibility and permeability, aesthetics and identity, and natural elements and environmental comfort were in the first to third priorities. The investigation has shown that in these contemporary houses, the important criteria for the improvement of the recognition model of the components affecting the sense of belonging to the place have been observed, and therefore it can be stated that the two important criteria with high weight, i.e. the criteria of aesthetics and identity and quality spatial features, accessibility and permeability have been two criteria in the first three priorities.

Conflict of Interest: The authors declare that they agreed to participate in the present paper and there is no competing interests.



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