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Explaining the concept of transparency in Qajar architecture with the approach of morphology of traditional houses

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ABSTRACT

Transparency is one of the principles that has been continuously used in Iranian art and architecture. The meaning of this principle in Iranian architecture is the constant movement and evolution of material quality to spiritual quality. The current research is analytical-descriptive research in terms of its structure, which in terms of its main goal is considered to be of the type of applied and developmental research, which can also be used as an exploratory research approach considering the lack of previous research on the concept of transparency in the field of the city in a methodical way. According to the course of theoretical foundations, the effective factors in the influence of transparency in the field of traditional houses morphology and by explaining the branch of Qajar architecture style to it, these factors are gathered for indexing using content-analysis method are taken so that the framework of the proposed criteria can be presented in chapter one. In conclusion the main affecting factors are enlistment, spatial ambiguity, flexibility and compatibility, legibility, permeability, spatial perception, connection, connectivity, spatial organization, spatial opening, dynamism, lightness, sequence, visual connection and light transmission. In future studies the main factors can be evaluated about relationship and affection value in traditional house architecture.

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1. INTRODUCTION

The concept of home has been investigated from different aspects due to its multidimensional nature. The diversity of the literature related to the house is related to the diversity of the dimensions of human existence, dimensions that include physical-biological aspects of non-material aspects. Some have searched for the social aspect of the house in the communication between spaces with the method of space syntax (Asifa et al. 2018). Some pay attention to the psychological aspects of home in the context of social changes (Gauvain et al. 1983). Using the psychological theories of Jung, Cooper Marcus refers to the relationship between the human psyche and the environment, especially the house, in the depth of the human psyche and in history, the symbolic concept of the house in the human psyche as an expression of self (Haq, 1999), on the other hand, Home can be considered as a tool to express human identity (Rainwater, 2019; Forty, 2004). In the 1980s, studies continued in the field of the meaning of home, especially in the field of psychology. Among others, we can refer to Tognoli's research, in which five characteristics were introduced for the house: centrality, continuity, solitude, self-expression (personal identity) and social relations (Kiani et al., 2016). He emphasized that these five characteristics differentiate between housing and home. At this time, two independent and important studies by Sagret (Saegret, 1985) and Manum (Manum, 2009) emphasized this distinction. In the 1990s, Newton and Putnam concluded that research on the meaning of home repeatedly presents the concepts of solitude, security, family, intimacy, comfort, and control with different interpretations (Newton and Putnam, 1998) As the most important area of human presence and growth, the house is the first design and the most extensive achievement in architecture, which has a large amount of it, according to the subject, it has the most use for humans, so it can be the best platform for the crystallization of culture. Iranian-Islamic and its components. (Galany,

2020). The house, as the primary housing that is produced in a short period of residence, mainly reflects the culture and level of expectations of the residents. (Richard and Lee, 2001) This spatial structure provided in these types of houses is in accordance with people's needs and changes are made according to their desires for more well-being. (Hayward, 2017) Historical periods define the relationship between man and space as it is in the body called housing as the first place, and examining its changes can lead to the recognition of residential patterns. (Trunbull, 2011) and in terms of architecture, this space is of great importance in their social interactions in urban settlements (Severin, 2019). Man's relationship with architectural space is a daily relationship that includes an important part of his life. This relationship is more complicated than the relationship between man and the artistic space of painting and sculpture, because man also experiences this space from the inside. Therefore, after centuries, the main question of architecture, space and life and how to connect these two is still. The living space does not exist as a predetermined model in the world of ideals, but it must be created and the architect is responsible for its creation (Kirimi, 2012). It has seen it, just as its spatial structure has undergone major changes and the way its spaces are formed has also become very different. (Khan & et al., 2021) according to the division of the overall structure of houses into inner and outer parts, the principle of hierarchy and spatial continuity can be seen from the entrance to the main part of the complex. This principle has stitched the houses together in such a way that it will not be possible to pass from one space to another space without observing the spatial hierarchy and spatial continuity. (Tahbaz et al., 2011) The way of distribution and placement of elements in a space is called spatial organization (Severin, 2019). Spatial structure can be considered as the adaptation of spatial organization to the physical environment. Basically, the spatial structure is the manifestation of the internal and external

relationships of the units of a spatial complex and the location of its components on the basis of the physical environment (Hilier, 2007). The investigation of the spatial organization of historical houses in relation to the way of life in them reveals that the architecture of historical houses responds to the diversity and dynamism of the way of life at home and expresses the nobility of Iranian architecture and architectural culture on the diversity of life, to the more serious extent of behaviors and needs, therefore the spatial organization of the historical house offers a wide variety of space for its residents and has encouraged diverse experiences and activities and increased the dimensions of each seemingly simple activity by providing spatial variety (Penn, 2013). In this regard, we have witnessed public, semi-public, and semi-private spaces in traditional houses of the past (Postalci and Atay, 2019).

By examining different perspectives and different researches about the principle of transparency, it can be seen that there are different views on this issue. On the other hand, transparency in Western and Islamic art and architecture can be interpreted in different ways; But they have common points in some concepts and principles. Therefore, before addressing the topic and examining the principle of transparency in the architecture of historical houses in Iran, it is necessary to provide a precise definition of this principle in architecture. For this reason, some of the most important concepts and perceptions are given in the table below to provide a specific definition in this research. (Tab. 1)

Transparency is one of the principles that has been continuously used in Iranian art and architecture. The meaning of this principle in Iranian architecture is the constant movement and evolution of material quality to spiritual quality. The principle of transparency has taken a complementary course throughout the history of Iranian architecture (Mirmiran, 2010). Examining the surviving buildings from different periods in Iranian architecture shows that transparency is

one of those principles that have been used in different ways in the period of Islamic and contemporary architecture. In Islamic architecture, the semantic aspect of the principle of transparency, which is “derived from spiritual symbols”, has been very important; Meanwhile, in the contemporary period, the physical dimension of transparency, which is “related to the body of the building”; It becomes important and the building’s body and building elements are effective in creating transparency in architecture (Hosseini, 2011). “The emergence of modernity and the undeniable influence of modern thought on the contemporary architecture of Iran” leads to the difference in the use of transparency in the contemporary architecture of Iran and the Islamic period (Sarikhani, 2015). During the Pahlavi era, due to the expansion of political relations with European and American countries, the expansion of exchanges and exchanges, the education of Iranian architects and engineers in foreign universities, the advancement of technology and the invention of the printing press. Photographic and video cameras, Iranian architects were influenced by Western architectural style and a new type of transparency was manifested in contemporary Iran. “In modern architecture, immateriality prevails and walls are dematerialized by losing their stability. The product of this immateriality is visual and spatial continuity, which is basically expressed with transparency. In this era, with the advancement of technology, it was possible to negate Babur’s walls and use all-round windows. This architecture created a fluid space that consisted of horizontal and vertical surfaces”. In fact, in contemporary architecture, the expression of transparency is manifested in the enclosure and introversion of buildings. So that the closer we get to the Pahlavi era, the extroversion of the buildings increases. Therefore, it seems that transparency in contemporary architecture is tangible and objective (like the presence of glass walls), and in traditional architecture it is tangible and subjective (like what happens with movement in space).

	Theorist	Definition of Transparency	References
Transparency in the word	Tahanoi	The book of Arabic dictionary is that which does not block the penetration of the rays and that which does not have color and brightness.	Tahanoi, 2011
	Marzban	Dictionary of visual art worlds; A feeling that does not obstruct the view; or not cover his back	Marzban, 2013
	Pakbaz	Encyclopaedia of art: transparent, back view, spherical glass, front glass and front view	Pakzad, 2007
	Ariyanpour	Dictionary: light-transmitting, bright, non-transmitting, light-conducting, burning	Ariyanpour, 2000
	Barker	Scientific and technical glossary: the ability of an object to transmit light or different wavelengths, transparent, transparent, smooth	Barker, 1997
Transparency in art and architecture from the perspective of Iranian theorists, designers and researchers	Mirmiran	Transparency means visibility; Therefore, the root of the discussion is concepts such as internal and external communication, continuity, continuity, integration, and lightness, and finally it reaches enlightenment.	Mirmiran, 1998
	Diba	Opposite the closed and finished space is the concept of transparency and continuity. In such a space, the path of human movement or his gaze is continuous, so that spatial openings on horizontal and vertical lines cause transparency in the layers of walls and columns, and the perspective and the final view in an infinite and improbable horizon, come alive again. And it takes on a new look.	Diba, 1999
	Mahvash	Transparency can be considered beyond its literal meanings based on finding, seeing and revealing, as a concept that is understood, sensed, imagined and observed, desired or experienced in the space of thought, feeling, imagination, intuition, ideal, or experience within the human being. . Transparency can be recognized in the form of three material, psychological, and spiritual aspects, which are respectively in the realms of form (<i>tools</i>), perception, feeling, and meaning.	Mahvash, 2006
	Noghrekar	In the wisdom of Islamic art, transparency is the breadth of vision, and since the main vision of man is his spiritual vision; Transparency is the possibility of penetration from the appearance of the work to its interior and content, or the manifestation of the universe in its material existence. In a general classification, transparency has two characteristics: 1-reducing the mass and mass of the building and increasing the empty space, 2-manifesting the inner and divine aspects of materials and materials with various methods using light and its reflection in patterns, colors	Noghrekar, 1999
Transparency in art and architecture from the perspective of theorists, designers and foreign researchers	Kanawar	The literal meaning of transparency refers to the physical expression of matter and its scientific meaning refers to the quality of the organization of spaces.	Kunnawar 2009
	Adrian Forti	In the dictionary of modern architecture, transparency is one of the key words of the 20th century. An expression used for transparency in the architecture of most parts of the world; It is a tension and attraction in creating a sequence of spaces inside and outside the building.	Forty, 2000
	Usher	From a visual point of view, transparency is related to the material and the possibility of light passing and seeing through the material. The literal meaning of transparency describes the quality of materials through which light passes, and its practical meaning is the perceptual quality that allows the mind to distinguish different spatial concepts; Describes.	Asher Barnston, 2003

	Carolin Rowe	Transparency always happens where places with two or more semantic levels are related in space; That is, there is a great variety of communication between vertical and horizontal levels, and each of these cases creates a kind of spatial transparency.	Pakzad, 2007
Transparency in art and architecture from the perspective of theorists, designers and foreign researchers	Rowe Estlitzki	There are two types of transparency: the real transparency of materials is around the view through them and the phenomenal transparency (this type of transparency explains the perceptual quality that cleans spatial concepts). Phenomenal transparency is the simultaneous perception of different spatial situations. Transparency, as the principle of formal organization, creates clarity; As it also causes ambiguity and doubt.	Islami 2011, Rowe & Colin, 1997
	Schultz	Transparency is one of the manifestations of open plan and open form.	Norberg Schultz, 2014
	Dandis	In the book Basics of Visual Literacy, transparency is a technique and is the opposite of opaque, and in graphic and visual works it is defined as follows: In this technique, the details of visual elements can be seen from behind the main element.	Dandis, 2009
	John Lang	It is obtained from the error of depth, line and form.	Lang, 2013
	Rost	Transparency can be seen as a factor in achieving the internal and external continuity of the building.	Rost, 2008
	Estremadoyro	Transparency in its general sense is the amount of light passing through. In architecture, it is assumed that transparency forces us to understand different spaces at the same time and causes different perceptions and feelings inside and outside the space.	Estromadoyro, 2003

Table 1: Definition of Transparency by theorist

The aspect of innovation is also based on the explanation of the exemplary structure of the principle of transparency in the spatial hierarchy by stating the classification and providing a framework that can be used to present the way it is formed and changed in the architecture of historical houses. (Peponis et al., 1990) By means of the aforementioned indicators, it is a new way to study and check transparency in fundamental researches in Iranian architecture. On the other hand, the measurement of some of these indicators by means of the space syntax method, which is a new way to measure different variables, and shows that transparency is not only influenced by modern Western thought, but also has its roots in the symbolism of traditional Iranian architecture and the concepts of extraction from

the traditional spaces of Iran can be continued in the contemporary architecture of Iran and cause the sense of openness and multiplication of the space (expansion of vision). As an architectural tool, it has been provided to the artist and architect, and by creating a process of movement from material quantity to spiritual quality (predominance of content over container), it has led to the reduction of matter and the increase of space, and with an architectural expression and unity in the manifestation of the inner aspect. And the majesty of the material in the structural part of the diagram creates a sense of belonging to the place (space). In order to achieve these concepts, there is a need to choose a correct method in space analysis, and the space syntax method plays an important role in this. (Tab. 2)

		Index	Definitions related to the principle of transparency	Source	Component
		<p>Lightness, reducing the mass and mass of the building, increasing the empty space (Momeni 2017) It is obtained from the error of depth, line and form.</p>	<p>In the wisdom of Islamic art, transparency is the breadth of vision, and since the main vision of man is his spiritual vision, transparency is the possibility of penetration from the appearance of the work to its interior and content, or the manifestation of the kingdom of the world in its material existence. In a general classification, transparency has two characteristics:</p> <ul style="list-style-type: none"> - Reducing the mass and mass of the building and increasing the empty space - Manifestation of the inner and divine aspect of materials and materials, various techniques using light and its reflection in color patterns 	Noghrekar, 1998	Visual continuity, materialization and lightness, light passing and reflection
			Lang, 2012	Visual continuity	
The principle of transparency	Permeability	Light and light reflection	What does not prevent the penetration of rays and what does not have color and brightness.	Tahvoni, 2005	Permeability
			An object that obstructs vision; or cover your back.	Marzban, 2013	Light transmission
			Encyclopedia of art: transparent, back view, spherical glass, front glass and front view	Pakbaz, 1999	Light transmission
		Light reflection and spatial opening (Toghiani 2016) Inviting the visual transparency plan (Nagarikar 2014)	Dictionary: Transmissive light, bright, non-obstructive, transmissive light conductor, burning	Ariyanpour, 1992	Light transmission and reflection
			Scientific and technical glossary: the ability of an object to transmit light or different wavelengths, transparent, transparent, smooth	Barker, 1997	Light transmission
			Transparency; It is one of the manifestations of open plan and open form	Norberg-shultz, 2012	Spatial opening
			Transparency means visibility; Therefore, the root of the discussion comes to concepts such as internal and external communication, continuity and integration, lightness, and finally, enlightenment.	Mirmiran, 1998	Visual continuity, sequence, style
	Spatial hierarchy and sequence is the process of building visible communication networks in space (Lochinger, 1981:34). In the dictionary of modern architecture, transparency is one of the key words of the 20th century. An expression used for transparency in the architecture of most parts of the world. It is attractive and attractive in creating a sequence of space inside and outside the building. Transparency can be seen as a factor in achieving the continuity of the inside and outside of the building	Forti, 2009	Continuity and sequence, internal and external communication		
		Rost, 2008	In and out sequence		

		Index	Definitions related to the principle of transparency	Source	Component
The principle of transparency	Movement	Dynamics and fluidity	Opposite the closed and finished space is the concept of transparency and continuity. In such a space, the path of human movement or his gaze is continuous, so that spatial openings on horizontal and vertical lines create transparency in the walls and columns. and perspective. The final landscape takes on a new life and appearance in an infinite horizon.	Diba, 1999 and Mehdi pour, 2015	Movement and dynamics, visual continuity, spatial openness
		Communication between levels			
		Horizontal and vertical, path			
		Human movement and dynamics, organization of movement in space	Transparency always happens where there are places in space with two or more levels of meaning; It means that the variety of communication between vertical and horizontal levels is high and each of these cases creates a kind of judicial transparency.	Collin Row, 2004	Visual continuity in horizontal and vertical dimensions
		Visual continuity and organization			
		A wide perspective			
		Visibility, depth error	In the book of visual literacy, transparency is a technique and it is the opposite of opaque, and in graphic and visual works it is defined as follows: In this technique, the details of visual elements can be seen from behind the main element.	Dundis, 2009	Visibility from the behind
		line and form, connection between horizontal and vertical surfaces,			
		Visibility from the back			
	Visual continuity and communication inside and outside the presence and function of elements such as yard, pond, sash, porch	The meaning of transparency refers to the physical expression of matter and its scientific meaning refers to the quality of space organization.	Kunnawar, 2009	Spatial Structure	
Transparency is a quality of space that is created in the relationship between the interior and exterior surfaces of the space, and in fact, its rigidity is reduced and it becomes transparent	Dorri, Talischi, 2016	Spatial Structure			
The perception of space is a matter between the perceiver and the perceived, whose quality is under the influence of the perceptual relationship between the person and the body (Dari 2015), the visual connection between the environment and the interior (the presence of nature in the building) (Heidarian 2015).	There are two types of transparency (the real transparency of materials is around the view through them) and phenomenal transparency (this type of transparency explains the perceptual quality that cleans spatial concepts). Phenomenal transparency is our perception of different spatial situations. Transparency, as the principle of formal organization, creates clarity; As it also causes ambiguity and doubt	Islami, 2011, Row, 1976	Permeability, ability, spatial perception		
Transparency in its general sense is the amount of passage. In architecture, it is assumed that transparency forces us to understand different spaces at the same time and causes different perceptions and feelings inside and outside the space Transparency can be considered beyond its literal meanings based on finding and evidence revealing, a concept that is understood, sensed, imagined and observed, desired or experienced at the thought, emotion, imaginary, intuitive, idealistic, or experiential space within the human being. Transparency can be recognized in the form of three material, psychological, and spiritual aspects, which are respectively in the realms of form (tools), perception, feeling, and meaning From a visual point of view, transparency is related to the material and the possibility of light passing and seeing through the material. The literal meaning of transparency describes the quality of materials through which light passes, and its practical meaning is the perceptual quality that it lends to the mind to distinguish different spatial concepts; Describes	Estremadoyro, 2003	Light transmission, readability and perception of spaces			
	Mahvash, 2006	Spatial perception			
	Estremadoyro, 2009	Light transmission, Spatial Perception			
	Oxford dictionary: refers to a situation that makes it easy to understand something		Perception		

Table 2: Definitions related to the principle of transparency

According to the statement of the research topic and the mention of the generalities of the research, including the statement of the problem, necessity, goals, questions, etc., as well as the review of the research background and the mention of the multi-stage research method, the combination of factors as a concept that affects transparency in the extraction architecture and it was categorized and a conceptual model of these factors was presented graphically.

MATERIALS AND METHODS

Spatial patterns of historical houses in Iran

In traditional houses, actions took place in three different arenas: open, semi-closed and closed. Historical evidence shows that the above structure has been repeated in all regions despite different climatic characteristics. This variety of shapes create platforms with different capabilities for performing daily activities, which causes sensory perception of nature from different angles and distances and creates new meanings.

Open space

One of the characteristic features of Iranian houses is the presence of open space in the house. In these houses, useful open space was formed in the form of different courtyards and roofs. In the Islamic perspective, the presence of open space in the house is one of the important things that stimulate the spirit of thinking and connection in terms of establishing a close relationship between man and nature." In most of the old houses in Every moment there was the possibility that man could communicate with the sky and the infinite space. Man felt that the place where he lives is a part of that infinite space" (Mostafa and Hassan, 2013). The yard has a service area. And it is a movement area and there are defined corners for the activities of family members such as eating, sleeping, talking. Touching and interacting with natural elements such as plants, water, pets, etc. Has been a part of people's daily activities. In other words, in these yards, there has been a close relationship

with natural elements, beyond the presence in the text of nature and sensory perception, but also with creation and production activity.

Closed space

In the closed spaces of the traditional house, the senses were dealing with nature both from a distance and up close. In these spaces, there was an unlimited and varied presence of natural elements in both real and abstract forms. The conscious and unconscious involvement of the senses with natural elements in different forms of hearing, visual, touch and smell through the flow of sunlight, breeze, different sounds (the sound of the wind hitting the leaves of the trees, the sound of water moving at the feet of the trees, etc.), the smell of plants and... Has been. The activity has also happened with the constant touching of objects such as carpets and pottery with secondary nature and abstract motifs. Using materials such as bricks and tree trunks in the roof, frames and doors, etc. Another is the entry of secondary nature into the closed spaces of the house.

Semi-enclosed space

In traditional houses, semi-enclosed spaces are always built in various forms in different climates, and even in one house, there are several types of semi-enclosed spaces with different dimensions and functions. Were These spaces being both a place of commuting and a place of meditation and daily activities. Porches are the most flexible spaces of the house, sometimes they functioned as a room in the house due to their direct connection with the yard as a continuation of the yard and sometimes with many similarities with closed spaces. In this way, a flexible platform for understanding nature was formed. Therefore, in a traditional house, in terms of the diversity of the structure of the arenas, a natural element, for example, a tree, based on the degree of surrounding the person ([in the open space of the yard](#)) or being surrounded by the person without contact ([from the closed space of the room](#)) or the environment and Being relatively surrounded ([in the porch](#)) and due

to the different distances, caused variety and intensification of stimulation of the senses and the formation of different physical and mental actions and finally the accumulation of various belonging memories and double perceptual effects.

Methodology

The current research is analytical-descriptive research in terms of its structure, which in terms of its main goal is considered to be of the type of applied and developmental research, which can also be used as an exploratory research approach considering the lack of previous research on the concept of landscape in the field of the city in a methodical way. According to the course of theoretical foundations, the effective factors in the influence of transparency in the field of traditional architecture and by explaining the branch of Qajar style to it, these factors are gathered for indexing using content-analysis method. Are taken so that the framework of the proposed criteria can be presented in chapter one.

Investigating transparency indicators in Iranian historical architecture

Studies show that transparency has a wide range of applications and in order to explain the transparency in architecture, it is necessary to specify the concepts and indicators related to it. Transparency in architectural space appears on 4 levels, physical-instrumental, visual-perceptual, behavioral-functional and semantic-conceptual. Each level of transparency has indicators that show the main features and how to check it. These indicators have been extracted and determined according to Table 1 based on the adaptation of experts' views and opinions in this field, some of which have been mentioned. The amount of attention to each of these indicators is different in different buildings and historical periods. In such a way that some indicators may increase in a space to emphasize transparency and some indicators have a controlling and decreasing trend. (Tab. 3)

DISCOUSION AND FINDINGS

Understanding the principle of transparency in the architecture of traditional Iranian houses

Transparency and spaciousness are not only the main feature of spaces and series of space, but also affect its architectural patterns, which means that the architectural patterns of the city, which are single affairs, are also included in the process of transparency, for example, the pattern of the central courtyard. We mention that Iran's architecture has a destiny to become more transparent. From the beginning, where verandas were considered in the body of the central courtyard, which added to the lightness and transparency of the inner space of the courtyard. Over time, this was strengthened, so that the number and width of the porches increase. Finally, by breaking the walls of the central courtyard and creating courtyards at a height connected to the main courtyard, the transparency of the building increases. Finally, by breaking the walls of the central courtyard and Creating courtyards at a height connected to the main courtyard, this reaches its maximum strength and this pattern evolves in the direction of transparency (Salari et al., 2013). Transparency means the possibility and ability to see from outside and this causes the root of this discussion is related to concepts such as internal and external communication, continuity, integration, lightness, and finally to enlightenment (Diba; 1378). Therefore, in architecture, transparency is a quality of space that is created in the relationship between the interior and exterior surfaces of the space, and in fact, its rigidity is reduced and it becomes transparent. By reviewing the views of those who have studied Iranian architecture from the perspective of spatial qualities; We come across definitions such as "continue", "opening", "expansion", "fluidity", "transparency" and "boundlessness" of space; which seems to express a special feature in the spatial organization of architectural works of architecture. (Fig. 1)

	Transparency indexes		Opinions of thinkers and experts
Physical-structural transparency	Transparent surfaces	Evolution of structural systems	(Mirmiran, 1998 and 1995), (Zoi, 1997), (Partui, 2009), (Groter, 2011), (Flamaki, 2012), (Mamarian, 2013), (Salari et al., 2013), (Sadat et al., 2016), (Giedion, 1962), (Dutton & Rice, 1995), (Brownell, 2021).
		Open and semi-closed space	
	Reducer	Holes and openings	
		Depression in the body	
Visual-perceptual transparency	Visual continuity	Inner to inner connection	(Taqvai, 2007), (Hadadi, 2007), (Groter, 2011), (Babaei et al., 2011), (Ardalan and Bakhtiar, 2012), (Mamarian, 2013), (Salari et al., 2013), (Nazer and colleagues, 2015), (Sadat et al., 2016), (Dary et al., 2016), (Giedion, 1962), (Slutzky & Rowe, 1963, (Kepes, 1965) Brownell, 2012), (Forty, 2004)
		Exploding enclosures	
	Spatial sequence	Continuity of vision	
		Inner to inner connection	
Behavioral-functional transparency	Spatial organization	Dynamics and fluidity	(Zoi, 1997), (Arnheim, 2003), (Tahuri, 2005), (Haeri Mazandarani, 2009), (Groter, 2011), (Ardlan and Bakhtiar, 2012), (Mamarian, 2013), (Salari et al. 2013), (Mahdovinejad and Sodani, 2011), (Bamarian, 2012), (Babaei et al., 2011), (Gideon, 2013), (Saadat et al., 2017), (Derry et al., 2017), (Dutton & Rice, 1995), (Slutzky & Rowe, 1963), (Kepes, 1965), (Forty, 2004)
		Continuity and continuity of space	
		Legibility of space	
		Flexibility and adaptability	
		Hierarchy and layering of space	
Semantic-conceptual transparency	Symbolic arrays	Symbolic light	(Diba, 1999), (Shultz, 2002), (Tahuri, 2005), (Pertoui, 2009), (Ardalan and Bakhtiar, 2012), (Flamaki, 2012), (Burkhart, 2013), (Mamarian, 2013), (Salari et al., 2013), (Bamarian, 2011), (Babaei et al., 2011), (Nazer et al., 2016), (Saadat et al., 2017), (Dari et al., 2017)
		Mystical and sacred concepts	
	Conceptual hierarchy	Concept arrays	
		Dematerialization and lightness	
		Spatial ambiguity	

Table 3: Opinions of thinkers and experts about Transparency indexes

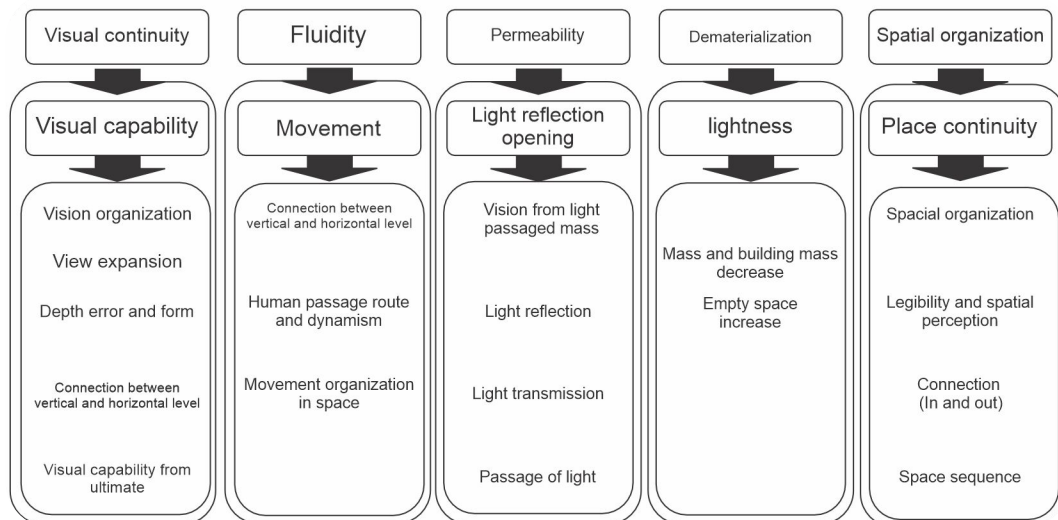


Figure 1: Main indexes of Transparency in traditional houses

CONCLUSION AND RESULTS

Knowing the criterion of dematerialization and lightness ([principle of superiority of space over building mass](#)) In an evolutionary process - which can be seen in the history of several thousand years of world architecture - it is a movement taken from the general movement of the universe from material quality to spiritual qualities. In general, the movement from material quality to the spiritual quality in architecture must be reduced from matter and add to the space ([Memarian, 2019, 352](#)).

Knowing the permeability criterion
 Permeability is a property of materials that allows fluid to pass through a porous space. This characteristic in architecture is as a border that acts as a filter for a rigid range or an opening that allows something to pass through ([Estremadoyro 2003](#)). In addition, “permeability has been visually oriented” ([Maddadhi et al., 2019](#)). Accordingly, permeability in spaces can be considered physical and visual. To achieve transparency through permeability in buildings that are made of solid elements; Spatial opening creates physical permeability and the reflection of elements such as water and light is a visual permeability factor.

Knowing the criterion of fluidity and dynamism

Knowing the criterion of visual continuity and the extent of vision (principle of organizing perspective and internal and external communication). Visual continuity is the main one, which can be called visual organization or transparency. “Continuity means the emergence of elements in a sequential manner” ([Estremadoyro, 2003](#)). In the principle of continuity, the human eye wants to see the counters in a visual structure as long as the direction of the elements has not been changed and no obstacles have been created; follow ([Memarian, 2015](#)).

Knowing the criterion of spatial organization and sequence (spatial continuity)

According to Diba, transparency depends on the two concepts of hierarchy and continuity ([Diba, 2009](#)). In expressing the principle of hierarchy and the concept of connecting curtains, one of the characteristics of Iranian architecture is establishing spatial continuity ([Fokuhi and Ghaznaviyan, 2011](#)). Sequence also means the continuation of one event after another in a logical order and in different time ([Estremadoyro, 2003](#)). It is possible that this event was all worth it; Or that they are subject to a kind of hierarchy ([Zolfipour, 2011](#)). In conclusion all of the affecting factors the concept of transparency in traditional houses can be gathered in fig. 2. ([Fig. 2](#))

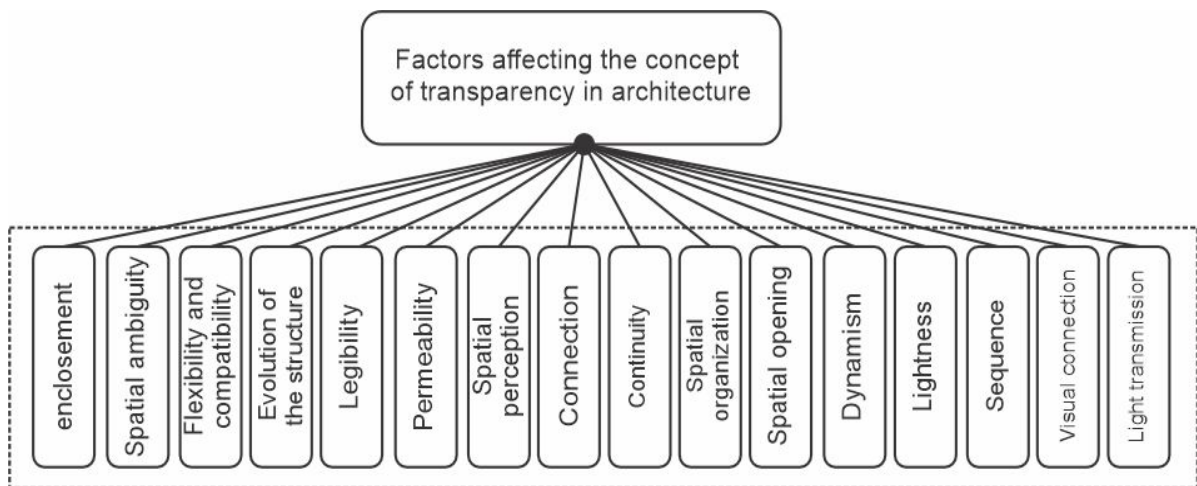


Figure 2: Factors affecting the concept of transparency in traditional houses

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