

Research Paper

## Exploring the Sense of Place Components in Historic Districts: A Strategy for Urban Designers and Architects

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### Abstract

Historical fabrics are known as a national heritage and treasure which are full of spiritual and human concepts. However, we are witnessing that many of these historic districts are being forgotten, abandoned and destructed as the emotional relationship between human and its residing place is fading out. Sense of place is a concept which focuses on the emotional and internal relation between people and their environment. Sense of place consists of three dimensions, namely: place identity, place dependence and place attachment. This research is trying to identify the most significant components regarding the sense of place. It is assumed that by improving these components, a higher level of sense of place is achieved in historic fabrics. These components could also help urban designers and architects that contribute to the historic fabric of the city. Qualitative content analysis methodology was used to elicit the sense of place components from 175 studies. Screening of the systematic reviews and extraction of information on included studies was performed using a validated framework. Finally, the Delphi method is used to find the most related components of the sense of place in historic districts. The results for the physical factors show that the most important attributes are "valuable landmarks and fabric", "form and physical characteristics", "communal spaces and public gathering places", and "visual harmony and unity of the facades". The results for the set of activity factors show that experts were generally reliable in their responses. The mean value for "events in place" is 4.94, which indicates that experts perceived this attribute as the most influential determinant. Other important attributes are "social activities and interactions", "proper roads and pathways", "legibility and identification", "land use and functional diversity", and "accessibility and permeability". In the meaning category, "vitality and happiness" is the most important attribute to evaluate the sense of place in the historical fabrics. "History and originality of the place" is then ranked second, and "aesthetic, beauty and arrangement" third. In the individual-social category, "memories and experiences of place" scored the highest followed by "cultural, religious and ritual ceremonies", "mental imagery of the place", and "awareness of historical values of places" (mean value of 4.24).

**Keywords:** Sense of place, Historic districts, Sustainability of communities, Urban designers and architects.

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### 1. INTRODUCTION

The majority of structure in Iranian cities is formed by historical areas. These areas are considered as national heritage due to their historical and architectural values. Since the emotional bond between people and their places is dynamic, more research is needed to understand the

specific mechanism. These areas are at heightened risk of being forgotten, abandoned and neglected. Many urban historic districts have suffered from declining physical, social, cultural and economic structures which followed by weakening sense of place and identity and resulted in mass immigration of local inhabitants. Previous studies have indicated that people's sense of place could play an important role in motivating place-protective behavior [1-3]. This research expresses people-place connections through the concepts of sense of place and place

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attachment. To achieve a healthy environment that consists of strong emotional connections and mutual relations between people and environment, it is necessary to identify the main components of sense of place. The two most predominant dimensions proposed to measure place attachment include place identity and place dependence. Sense of place has higher importance when considering historic districts and a stronger sense of place enhances people's collaboration and responsibility to protect the historic values and gives them motivation to continue to reside that will guarantee the well-being of the communities. There has been limited studies addressing the sense of place in historic districts [4].

The purpose of this study is to identify the most significant components regarding sense of place and by improving these components, a higher level of sense of place can be achieved in the historic fabrics. These historic treasures and social capitals are full spiritual and human concepts and as Tuan has said a place is defined by having "a history and meaning" [5-6]. Place meaning is a fundamental pre-requisite for forming and improving the concept of sense of place in historic fabrics. Accordingly, the research is tried to answer the following questions:

1. What are the influential components of sense of place in the historical districts?
2. What role do these components have on historical district's sense of place?

## 2. LITERATURE REVIEW

### 2.1. Sense of place

Sense of place is one of concepts that focuses on people's connection with different environments. It conveys the meaning of attachment to natural or man-made structures, while space is considered as an open and abstract phenomenon, place is part of space which is occupied by someone or something that has value and meaning [7]. Sense of place means people's perception of the environment and their more or less conscious feeling towards environment, which puts the person in an internal contact with it, so that one's understanding and feeling is linked with environment's spiritual background and hence becomes fully integrated. This is the factor that transforms space into a place with special sensory and behavioral characteristics for special people. In addition to causing a sense of comfort in an environment, Sense of place also supports cultural concepts noted by people, social and cultural relations in a specified place and reminds people of their past experiences which assists them in achieving an identity [8]. From phenomenologists' perspective, sense of place means connecting to a place by understanding symbols and everyday activities. This feeling can be created in the individual's place of residence and get expanded and developed over time [9]. In fact, in this view, sensory judgment is a criterion for evaluating space and reacting to it, and decides to continue to be present in space and use it, as well as the desire to re-refer or refrain from it [10].

### 2.2. Influential components of sense of place

The subject literature in the field of sense of place indicates that the factors make up the concept from different viewpoints consists of a variety of aspects which many common points are observed between them. In the meantime, the sense of place constituent elements include three categories: Physical characteristics (form), activities and meaning. Many social science scholars have the same view regarding this structure and trace of the view can also be found in canter's theory of place. The well-known canter theoretical model (Figure 1), a pioneer in architecture and urban planning conceptual studies, is one of theories which can explain the quality of urban planning components. Based on the model, place is a part of the natural space or space that has conceptually or materially defined borders and is the result of interactions between the three areas of human activity, imaginations and form [11]. The effectiveness of Canter's model has paved the way for other researchers in the field to work and provide other types of such models. For instance, Relph's sense of place model [9] and following to his thoughts, Punter's sense of place model [12], (Figure 2) which includes form, activity and meaning characteristics, can be considered as a derivative of canter model [13].

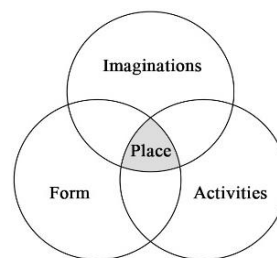


Fig 1. Place Model (Canter, 1977)

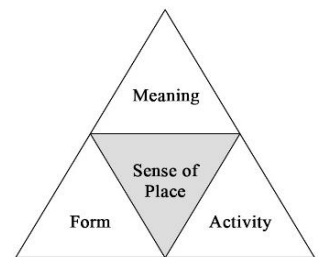


Fig 2. Sense of Place Model (Punter, 1991)

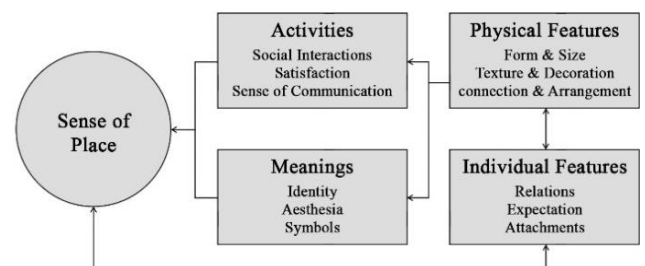


Fig 3. Sense of Place Model (Falahat, 2006)

Some theorists have also indicated the factors that influence the sense of place. Tuan considers physical, activities and meanings characteristic as factors that would influence the sense of place [14] and Shamai believes that the concept includes attitudes, feelings and behaviour toward a place [4,15]. Gustafson explains that both Relph and Canter suggested a similar three-part model of place and instead of that model, he presents another three-pole triangular model [16]. The model is composed of self, others and environment. More recently, Relph describes

places as fusions of physical factors, activities and significance, aspects of the experience of the everyday world [17]. As Pallasmaa also emphasizes on sensory experiences in the studies and linked people's preferences towards historical environments in comparison to modern and contemporary built environments to richness of sensory experiences they offer [18]. It is social factors, and experiences from the presence of a person in a place are more important than ever in the sense of place literature. In a clear statement, people perceive places not only as spatial locations [19], but as social areas where meaningful representations of, and emotional connections to, people and settings can be formed [20-21]. In this way, the studies highlight the importance of social context in the process of explaining the sense of place [4].

In recent years, sense of place in field of cultural heritage has also been considered and studied. The recent Québec Declaration on the Preservation of the Spirit of Place, adopted by ICOMOS in 2008 [22], attempts to define sense of place from the perspective of cultural heritage studies. In the document, interplay and interdependency of tangible and intangible components of place and its values have been recognized, and the plural and dynamic character of the concept acknowledged. In the Québec Declaration, "spirit of place is defined as the tangible (buildings, sites, landscapes, routes, objects) and the intangible elements (memories, narratives, written documents, rituals festivals, traditional knowledge, values, textures, colors, odors, and so on), that is to say, the physical and the spiritual elements that give meaning, value, emotion and mystery to place." It is also defined as a "continuously reconstructed process", thus putting forward the importance of people and communities, who assign meanings and values to a place and reinvent them over time [6].

Previous studies have emphasized on different physical, activities, meanings and social aspects but some have paid more attention to specific aspects and consider them as more important factors. For example, in some cases, the place literature suggests that social relationships embedded in the setting are crucial to developing attachment. Memories and meanings are with people in place rather than just the physical setting [23]. In this regard, some researchers believe that the importance of physical properties is less than other fields. In the same way, Relph believes that a place is essentially its people, and appearance or landscape are little more than a backdrop of relatively trivial importance [9]. Greider and Garkovich and Eisenhauer et al also hold the position that sense of place is strongly socially constructed [24-25]. In contrast, scholars suggest that the physical setting contributes important "raw material" to place meanings and attachment. Although people may turn "blank space" into "meaningful place", in reality, physical features of the environment play an important role in producing sense of place. Space is never truly "blank" because the physical setting contributes important raw material to place meanings [23]. Ryden has also emphasized on the important role of physical properties and believes that a knowledge of place is grounded in those aspects of the

environment that appreciate through the senses, such as color, texture, slope, quality of light, the feel of wind, the sounds and scents carried by the wind [26].

Based on the data reported in the literature, four aspects that influence the sense of place are considered as physical, activity, meanings and social. In fact, the foundations of the research are based upon Relph's and Punter's ideas, and to better differentiate the components, the category of social factors has been added to the triples of previous theories.

### *2.3. Impact of sense of place on sustainability of Communities and places*

Studies regarding sense of place have shown that residents' willingness to address local problems have been revealed to be affected by their emotional connection to local places [27] and these bonds are essential to the wellbeing of neighborhoods because they motivate residents to participate, improve, and protect their communities [28]. This means that the extent to which the emotional and intimate relationships of a person with the environment in which they are present or reside are stronger and deeper, the sense of responsibility and participation in the person is enhanced and his protective behaviors are promoted. If in an environment, acts contrary to group values are taken, those acts will be condemned and confronted by people and residence due to their strong sense of place. In other words, as Nanzer believes, policies that run counter to residents' attitudes are less likely to gather public support and, in turn, fail in its objectives [29]. Many of the debates in sense of place scholarship focus on increasing residents' interest in the biological features of the coastal areas, which in turn would foster a willingness to conserve these areas for future generations [30]. Also, Chen and Sekar believe that sense of place continues to play an important role in urban redevelopment and community-focused built environment design [31]. From the perspective of geographers and planners, identifying the main factors driving sense of place and measuring them can improve environmental design to ensure the site contributes positively to sense of place and promotes sustainability and liveability.

Many studies have been conducted to discover the relationship between the sense of place and other concepts such as conservation, habitat stability, navigational and return to the place. In this regard, the article expands previous research regarding sense of place and attitudes towards future generations for conservation of coastal areas in the Japan [30]. In the study, two regions are investigated and compared. The results of the study showed that the sense of place is followed by the desire of individuals to protect the environment. Also, structural equation modeling (SEM) revealed that the biophysical variable of coastal area and biodiversity had the strongest effect on residents' attitudes towards conservation for future generations. In the research, environmental education programs has been recommended to increase residents' interest in natural features of coastal areas so that the protection of it is enhanced by people themselves.

In another research, the elements of ‘person-place bonding’ and its relation to intangible cultural heritage sustainability are examined. Through 32 in-depth interviews, it is concluded that the sense of place includes three main issues of the ‘Sense of Loss’, ‘Sense of Justice’ and ‘Sense of Mission’ in historic sites that can assist the sustainable development, especially the sustainability of intangible cultural heritage [32]. Falahat [8] also examines the concept of the sense of place and its various levels from phenomenology and environmental psychology point of view and identifies the factors shaping it. By reaching the conclusion that sense of place is derived from the inner connection of man, his mental imagery and the environmental characteristics, he has discovered a model to illustrate how these effects are. Previous studies have also been conducted on the field of sense of place in historic districts and fabrics. Azizi and her colleagues compare the components that affect the sense of place between the two traditional and modern neighborhoods. The results showed that in traditional neighborhoods, "the social components and activities" and in modern neighborhoods, "the physical and visual components" obtained higher scores [13]. Samimi Sharomi and Partovi have conducted a study to examine and evaluate sense of place and also to discover the difference between two neighborhoods of Gilan Blvd as a planned site and neighborhood of Sagharizans as an organic site [33]. The results showed that the planned neighborhood of Gilan Blvd is in a weaker position than its older counterpart. They have identified the following reasons: the uniformity of the environment and the standardization of fabric quality in the Gilan Blvd, the decline of native identity, weakness in human communication, lack of sense of collective life, immigration, the new neighborhood being built and the lack of social memory.

### 3. RESEARCH METHOD

The present research methodology is qualitative in terms of nature. Content analysis method has been used to identify the components of the sense of place. Delphi technique is also used to identify the most effective components of sense of place in historic districts. It is also used to rank and validate the component classification in the proposed sense of place framework (quadruple framework, including physical, activity, individual-social and meanings aspects). Thus, library studies were conducted in the field of sense of place and after reviewing 175 sources related to the topic, 113 components were extracted through content analysis technique. After categorizing the components, the results were shared with three experts and some changes were made to the categories based on their comments. Also, some components were eliminated from the sense of place components due to their general or ambiguous definitions<sup>1</sup>. The other items were considered as subcomponents and were subdivided into broader concepts and finally, 70 of the most important components influencing the sense of place were achieved in the first round of Delphi technique. In the next step, the results were given to 17 experts in the

form of a survey. Then, it was requested of them to give a score of 1 (very low) to 5 (very High), based on the 5-point Likert scale, to each of the components. They were asked to give these scores based on their own views about the importance and impact of each component on residents’ sense of place in historic districts and fabrics. After analyzing the data using "SPSS Statistics Version 22" software and applying experts’ opinions regarding the classification of the components in the proposed categories, a set containing 30 of the most important components of sense of place in historic districts was achieved.

#### 3.1. Examining sources related to the sense of place

At the beginning of the research process, sources related to the topic have been collected and a search through sources including books and articles has been conducted using key words related to the topic (sense of place, attachment, dependency, historic districts as English key words and their Persian equivalents). Once a comprehensive list of abstracts has been reviewed, any studies appearing to meet inclusion criteria would then be obtained and reviewed in full. At this point, 175 sources, including 112 foreign sources and 63 Persian sources, have been collected and examined.

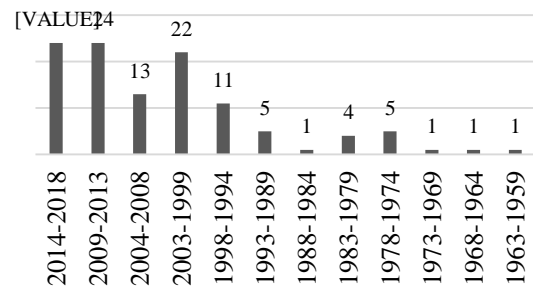


Fig 4. The frequency of foreign sources

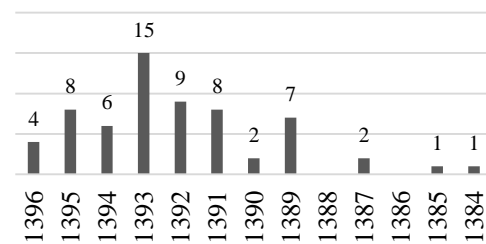


Fig 5. The frequency of Persian sources

As seen in the charts above, foreign sources are from 1960 to 2018 and Persian sources are for the years 1386-1396 (Persian Calendar). As the frequency of sources based on the year of publication indicate, while in the process of collecting and reviewing, the focus has tried to be more on recent sources, books and manuscripts.

3.2. Extracting the sense of place components using content analysis method

Content analysis method is one of the methods used in quantitative and qualitative approaches. Initially, the method was more used in quantitative way to measure variables, but in the mid-20<sup>th</sup> century, qualitative approaches also entered the content analysis method [34]. This method allows researchers to search among a large

amount of data by using systematic method and categorize the findings [35]. According to Walizer and Winer, any systematic procedure used to examine the content of recorded data is considered content analysis [36]. In the research, after studying and examining the sources, and by using content analysis method, sense of place components are systematically extracted. Accordingly, the 143 components extracted from reviewed literature (Table 1).

**Table 1.** Example of a part of the content analysis

Components	Category	Studies														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		2017 Savic [6]	2002 Stedman [37]	2008 Habibi, R. S. [38]	1977 Tuan [14]	2018 Chen and Sekar [31]	2008 The Québec Declaration [22]	2016 Ayashm and Mirgholami [39]	2013 Mohammad et al. [40]	1982 Seamon [41]	2017 Khettab and Chabbi-Chemrouk [4]	1995 Xu [42]	2013 Yazdanfar et al. [43]	1998 Montgomery [44]	2002 Salvesen [45]	1991 Punter [12]
Urban landscape & view	Form (Physical)		*	*			*		*	*	*				*	*
Social interactions	Activity				*	*		*	*			*		*		
Aesthetic and beauty	Meaning					*		*			*					
Cultural, religious and ritual ceremonies	Social-individual						*									*
Communal and public spaces	Form (Physical)	*										*			*	
Memories and experiences of place	Social-individual	*		*	*		*	*	*	*		*	*			
Services, infrastructure, facilities	Activity			*		*		*							*	*
Natural elements	Form (Physical)		*					*			*				*	
Satisfaction	Meaning		*			*							*			
Visual diversity	Form (Physical)					*							*			
Events in place	Activity	*														
Vitality, liveliness and happiness	Meaning			*		*							*	*		
Cleanliness and health measures	Activity			*												
Individual and social Characteristics	Social-individual					*				*		*				
Attitude, belief, worldview	Social-individual	*	*								*	*				
Traditional knowledge	Social-individual						*									
Enclosure	Form (Physical)							*								
Sense of security and Safety	Meaning					*		*			*					
Legibility and identification	Activity			*								*				*
Historical fabrics and Valuable landmarks	Form (Physical)							*	*		*					

The components of the literature review have been extracted, and after initial integration, has reached to 113. In the subject literature, some components of sense of place are expressed by different terms that refer to the same concepts. As an example, landscape, view point and scenery convey the same concept which have been considered as physical components in various sources. Other examples also include concepts such as identification, recognition, legibility and ability to recognize the space. Also, words such as attitude, worldview, mentality and belief refer to the same concept, and all these words and expressions are collected and introduced.

### 3.3. Categorizing the extracted components

After collecting the components of the sense of place, the extracted items from the review of literature have been put into four categories of physical, activity, meanings and individual-social. Accordingly, the 113 components extracted from the literature review in these four fields are classified as follows. It should be noted that the frequency represents the number of studies which identifies the component as an effective factor in the sense of place. For example, in 25 studies, the component of urban view point and the landscape have been recognized as a factor affecting the sense of place.

**Table 2.** Components of literature review in the area of the sense of place and its classification in the four categories.

	Components extracted from literature review	Freq	Components extracted from literature review	Freq	Components extracted from literature review	Freq	Components extracted from literature review	Freq
Physical Category [31]	Urban landscape and view	25	Visual diversity	12	Man-made environment	11	Physical borders and territory	4
	Shape, form and physical characteristics	31	Climate and environmental comfort	8	Harmony and adaptation to the natural environment	5	Visual harmony and unity of the facades	2
	Harmony with historical character and form	1	Natural elements, Ecosystems and biological environment	23	Communal and public spaces	17	Convenient walking environment	7
	Materials	7	Place size	7	Centeredness	2	Edge	6
	Texture	12	Ratio and Human scale	13	Distance	4	Node	5
	Color	12	Enclosure	12	Valuable landmarks and fabrics	6	Landmarks and symbols	10
	Hierarchy of human presence	1	Environmental sustainability	5	Lighting at nights	5	Private spaces	3
	Entrance elements	23	Decorations	3	Building density	1		
Activity [23]	Land Use and functional diversity	15	Effective communication with outside	2	Control, monitoring and management of place	6	Social relations and neighboring	20
	Permeability	6	Access to public transport	8	Social activities	14	Being with others	9
	Proper roads, pathways, pedestrian and Accessibility	26	Information and Communication technology (Mobile and computer)	2	Behavioral patterns and behavioral commitment	7	Services, infrastructure, facilities (utilities, urban furniture and parking)	18
	Physical base	2	Legibility and identification	20	Social interactions	23	Cleanliness and health measures	5
	Location of the place in the city	6	Smell	6	Social Collaborations	7	Navigation	6
	Flexibility	2	Sound	5	Events in place	5		
Meanings [39 items]	Interest in place	2	Satisfaction	16	Sense of security and safety	19	Sense of community	8
	The meaning of place and symbolic meaning	19	Feeling, perception and understanding of the environment	21	Traditions and place names	5	Identity (place, historical, individual and social)	29
	Spirituality and emotional ties to the place	2	Distinctive location and its uniqueness	7	Attachment, affiliation and dependency	29	Place character	7

	Components extracted from literature review	Freq	Components extracted from literature review	Freq	Components extracted from literature review	Freq	Components extracted from literature review	Freq
	Sense of locality	3	Insideness (sense of belonging)	3	Calmness and relaxation	10	Perceptive senses	3
	Secrecy	1	Attraction	7	Feeling comfortable	7	Contradiction	4
	Quality of place	9	Place history and originality of the place	6	Man-place Relationship and emotional relationship	14	Symbolism, beliefs and symbolic concepts	9
	Surprise	2	Quality of life	1	Memorability	3	Aesthetic and beauty	11
	Appealing place	1	Being proud of the place and being famous	1	Cohesion and connection (man and place)	6	Order	3
	Vitality and happiness	10	Sense of loss	3	Hope for better conditions	1	Place familiarity	4
	Pleasure	3	Sense of justice	1	Place's artistic values	1		
Social [20]	Awareness of historical values	1	Culture and cultural harmony	18	Social and individual values	18	Housing ownership type	10
	Social responsibilities	2	Demographic density of the place	6	Memory	9	Mental imaginations	12
	Ethnic ties and proximity to acquaintances	4	Political issues	3	Expectations	3	Attitude, worldview, mentality and intention	10
	Cultural, religious and ritual ceremonies	9	Economy (economic conditions and income levels)	4	Process of choosing accommodation (optional or forced)	3	Individual and social characteristics (age, occupation, gender)	18
	Family	2	Traditional knowledge	1	Needs	6	Experience of place	23

The classification of the components of sense of place was based on previous theories. However, in some cases, there was no consensus regarding some components in the literature. In these circumstances, such components are suggested to be placed in one of the four categories, which will be explained in later stages using the Delphi method. The classification results have been validated and some changes have been made to its structure. The following describes some of the components in the four categories.

Punter considers "urban view point and landscape, construction form, permeability and urban furniture" [12] as criteria to measure physical factors (Tables 1 and 2). Urban furniture has been considered as subcategory to equipment and services category according to the results obtained using Delphi technique. Contrary to Punter's view, the subcategory is classified in the field of activity in the research. He introduces "usage, Roads and pedestrian's traffic amount, behavior patterns and legibility", as criteria for assessing activity factors and "cultural relations, perceptual functions, and qualitative evaluation" as criteria for assessing meanings factors. According to experts' opinions, component of cultural relations in the present study has been classified as subcategory to social-individual factors. Relph believes that activities and interactions which take place in social events are one of the most effective characteristics of the place that

promotes the sense of place [9,46]. In this study, social relations is considered to be subcategory of activity field. In addition, the most important physical factors affecting perception and sense of place are "size of place, degree of confinement, scale, proportions, human scale, distance, texture, color, smell, sound and visual diversity". Steele believes that features such as "identity, history, imagination and illusion, the mystery, pleasure, wonder, security, vitality, passion and memory" establish a centralized relationship with the place [47]. "Background and context, services and facilities, location of places in cities and need to communicate with the environment" are other factors that have been explored in previous studies [48]. Also, Salvesen considers the elements of "physical personality, ownership, originality, amenities, natural elements (such as water, plants, trees, sky and sun), private and public spaces" as constitutive components of a place that is effective in creating a sense of place. Furthermore, he considers the various factors such as impatience, the uniformity of buildings and the advent of the digital age as threats to the sense of place [45]. From Xu's point of view, the meanings of space and environment play an important role to create a set of particular qualities of sense of place [42]. In addition to the components mentioned in Table 2, the results of research in the field of sense of place indicate that the component of time affects the formation of sense

of place. In other words, earlier research has identified the age or position within the life course of an individual as a predictor of sense of place dimensions [49]. In addition, length of residence in a place has been hypothesised as a potential predictor of place variables. It seems that individuals who have resided longer in a place are more likely to have developed significant relationships with other residents as well as with physical attributes of the place [50] and possess a strong feeling towards the place. This position is held by many place theorists such as Tuan; Relph, but contrasts with empirical research conducted by Stedman, who found no effect of length of residence on attachment [9,14,37]

The results of the literature review show that the most frequent components of the sense of place are "physical characteristic, urban landscape, natural elements, communal and public spaces". Also, in the category of activity, the components of "walking paths and roads, social interactions, social relations and neighboring, legibility, facilities and infrastructure", in the category of meanings, the components of "feelings, perception and cognition of the environment, safety and security, the meaning of the place and satisfaction", and in the individual-social category, the components of "experience of place, individual and social characteristics, social and individual values, culture and cultural harmony" are the most frequent.

### *3.4. Using Delphi technique*

As noted earlier, after assembling and categorizing the components of the sense of place, the method needs to be validated to ensure that to what extent the categorization of the components in the four areas are valid and correct and needed changes to be applied, if necessary. In addition, it is necessary to identify the most important components affecting the sense of place in historical fabrics in a credible and systematic way. Therefore, Delphi technique is used to achieve this. Delphi is a systematic approach or method to extract comments from a group of experts on a subject or a question [51] and is used to reach the consensus opinion of the group of experts by using a questionnaire [52], in a way which the anonymity of the respondents and their feedbacks given to panel members is respected [53]. The population in this technique is usually recommended to be between 15 and 30 [54]. In the case of uniformity of expert respondents, this number is usually sufficient between 10 and 15 [55].

Accordingly, in two phases, the results of the research are shared with a group of field experts and their feedbacks and opinions are used to achieve the research goals.

#### *3.4.1. The first round of the Delphi technique<sup>2</sup>*

In the first stage, a list of 113 components classified after the initial integration, in four physical, activity, meanings and individual-social categories, was given to three experts and they were asked to assess the categories and make suggestions to correct them if needed. They

were also asked to evaluate the necessity and importance of the components in influencing the sense of place. After collecting the opinions of the experts and analyzing them, a modified classification has been achieved and as per their comments, some of the existing components were removed from list of components due to their general nature, being irrelevant, having the same concept as sense of place or their weak influence on the concept. Also, according to the experts' opinions, some micro components were placed under the category of macro components, and eventually 70 components of the sense of place were reached.

#### *3.4.2. The second round of the Delphi technique*

In the second stage, a questionnaire was prepared based on the experts' opinions in the previous stage, consisted of 70 components of sense of place, and was made available to the panel of 17 faculty members and experts. It was requested of them to give score of 1 (very low) to 5 (very high) to each component, using Likert scale, based on their influence on sense of place in historic districts. Also, experts' feedback on the component classification was re-considered and analytical procedures were applied at the conclusion.

## **4. RESULTS**

The data obtained through the Delphi technique was analyzed using SPSS software and the results are as follows.

### *4.1. Descriptive statistics*

According to experts' opinions, the importance<sup>3</sup> of each of the physical and activity components of the sense of place in the historical districts is shown in Table 3. The results show that among the physical components, the factors "the presence of valuable landmarks and fabrics (mean 4.71)", "Communal and public spaces (4.59)", "form and physical characteristics (4.59)", "visual harmony and unity of the facades (4.29)", play a very important role in influencing the inhabitants' sense of place in the historic districts. Also, in activity category, the factors of "events in place, social interactions, social activities and collaborations, roads and pathways, land use and functional diversity, legibility and identification, and accessibility and permeability" are important in shaping the sense of place of residents in historic fabrics.

The most effective components in the meanings category are "quality of place, vitality and happiness, history and originality of place, meaning of place, aesthetic, beauty and arrangement, interest in place, sense of security and safety" and the most effective components in the category of individual- social are "experience of place (4.76), length of residence (4.59), cultural, religious, and ritual ceremonies (4.47), mental imaginations (4.24), awareness of historical values (4.24)".



**Table 3.** The score of physical and activity components according to experts' opinions

1. Physical components- 14 Items	Std. Deviation	Mean	Significance degree
Urban landscape and view	1.111	4.12	High
Form and physical characteristics (texture and material)	0.507	4.59	Very high
Natural elements and relation with nature	1.269	4.12	High
Visual diversity	1.417	3.59	High
Physical borders and territory	1.169	3.65	High
Place size	1.269	2.88	Medium
Ratio, human scale and Enclosure	0.928	4.12	High
Decorations	1.320	3.65	High
Communal and public spaces	0.795	4.59	Very high
Presence of valuable landmarks and fabrics	0.470	4.71	Very high
Lighting at nights	1.169	3.65	High
Building density	1.231	3.53	High
Visual harmony and unity of the facades	0.985	4.29	Very high
Harmony and adaptation to the natural environment	1.166	3.88	High
2. Activity components- 15 Items	Std. Deviation	Mean	Significance degree
Land use and functional diversity (cultural, commercial, ...)	0.800	4.47	Very high
Accessibility and Permeability	0.507	4.41	Very high
Proper roads, pathways, pedestrian and accessibility	0.800	4.53	Very high
Flexibility	1.131	3.82	High
Access to public transport	1.375	3.53	High
Being with others	0.928	4.12	High
Legibility and identification	0.800	4.47	Very high
Control, monitoring and management of place	1.091	3.76	High
Social activities and collaborations	0.800	4.53	Very high
Social interactions and neighboring	0.493	4.65	Very high
Events in place	0.243	4.94	Very high
Cleanliness and Health measures	1.225	4.00	High
Smell and sound	1.091	3.76	High
Navigation	0.866	4.00	High
Facilities and infrastructures (utilities, urban furniture and parking)	1.131	3.82	High

**Table 4.** The score of meanings and social-individual components according to experts' opinions

3. Meanings components- 25 Items	Std. Deviation	Mean	Significance degree
Quality of place	0.426	4.79	Very high
The meaning of place	0.806	4.37	Very high
Quality of life	1.014	4.20	High
Symbolism, beliefs and symbolic concepts	1.317	3.88	High
Aesthetic, beauty and arrangement	0.786	4.35	Very high
Sense of security and Safety	0.985	4.29	Very high
Traditions and place names	1.317	3.88	High
Memorability	0.928	4.12	High
Calmness and relaxation	1.147	4.13	High
Feeling comfortable	1.061	4.00	High
Satisfaction	1.237	3.94	High
Sense of community	0.957	4.12	High
Vitality and happiness	1.007	4.53	Very high
Pleasure	1.265	3.50	High
History and originality of the place	1.004	4.41	Very high
Being proud of the place	1.265	4.00	High
Interest in place	0.816	4.33	Very high
Spirituality and emotional ties to the place	1.500	3.88	High
Mystery and Secrecy	1.483	3.25	Medium
Appealing place	1.166	3.88	High
Place familiarity	0.929	4.06	High
Place's artistic values	1.131	3.82	High
Hope for better conditions	1.457	3.47	High
Sense of loss	1.109	3.19	Medium
Sense of justice	1.278	3.41	High

4. Individual-Social components-15 Items	Std. Deviation	Mean	Significance degree
Housing ownership type	1.088	4.06	High
Cultural, religious and ritual ceremonies	0.514	4.47	Very high
Mental imaginations	0.970	4.24	Very high
Attitude, Worldview and intention	1.505	3.53	High
Experience of place	0.437	4.76	Very high
Individual and social values	1.029	3.94	High
Individual and social characteristics	1.063	3.94	High
Expectations	1.278	3.59	High
Needs	0.957	4.13	High
Culture and cultural harmony	1.265	4.00	High
Economy (economic conditions and income Levels)	1.249	4.06	High
Demographic density of the place	1.436	3.06	Medium
Awareness of historical values	0.970	4.24	Very high
Ethnic ties and proximity to acquaintances	1.111	4.12	High
Process of choosing accommodation (optional or forced)	1.169	3.65	High
5. Time, length of residence	0.507	4.59	Very high

4.2. Experts' opinions

In the category of activity, two distinct cases of "social activities and collaborations" and "social interactions and neighboring" can be put under a single category. In Meanings category, factors such as, "quality of place", "quality of life" and "meaning of place" have a very general nature and from the experts' point of view, they are in some way influencing the quality of place. Also, the terms "sense of community and social commitments" have no clear meaning, and the components of "aesthetic, beauty" and "attractiveness" have close concepts.

According to experts' opinions, "place familiarity" is a key requirement for the formation of a sense of place. In the individual-social category, the factors of "individual and social values" and "expectations of the place" are meaningless and component of "need" has a general nature. All of these components are influenced by "individual and social characteristics". Based on the evaluation of components by experts and the comments during polling, as well as attention to repetitive components in the literature, the most important components of sense of place in the localities and historical texts are identified and extracted.

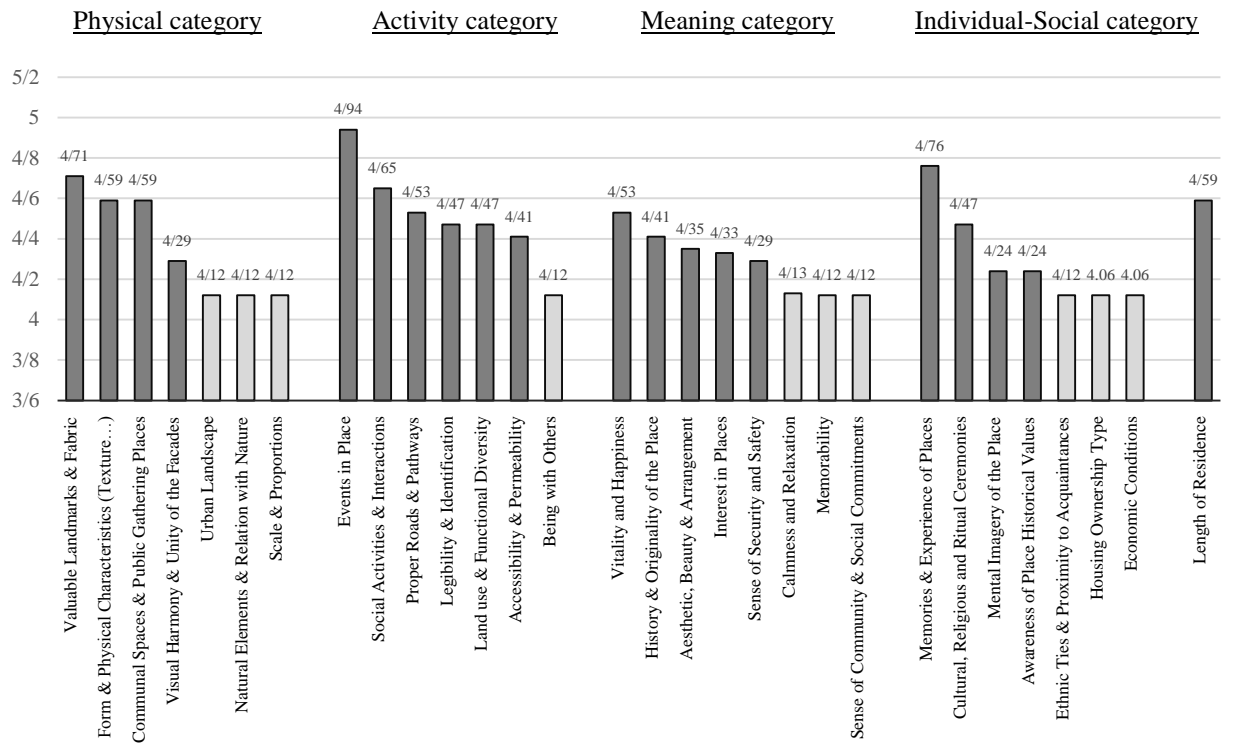


Fig 6. The most important components influencing the sense of place in historical districts

■ Components with higher degree of significance. □ Components with lower degree of significance

## 5. CONCLUSION

Results of the study showed that the components of the sense of place from the review of literature through content analysis method include 113 factors that can be categorized in four categories as described in Table 2. Also, the evaluation of these components by a panel of 17 experts using Delphi technique has resulted in identifying the most important of them in historic district (Figure 6).

Overall, physical settings and actions taken by people have significant impact on sense of place. According to the chart above, the components that have earned the average score (4.21 to 5) have the highest significance in influencing the sense of place in historic districts. These components in each category are as follows: a) Physical components: valuable landmarks and fabric, form and physical characteristics, communal spaces and public gathering places, visual harmony and unity of the facades. b) Activity components: Events in place, social activities and interactions, proper roads and pathways, legibility and identification, land use and functional diversity, accessibility and permeability. c) Meanings components: Vitality and happiness, history and originality of the place, aesthetic, beauty and arrangement, interest in places, sense of security and safety. d) Individual-Social components: Memories and experiences of places, cultural, religious and ritual ceremonies, mental imagery of the place, awareness of historical values of places. Also, the component of length of residence as an independent time component with the average score of 4.59 has been considered as influential factor on sense of place in historic districts. At lower levels, factors such as "calmness and relaxation, urban landscape, natural elements, scale and proportions, being with others, sense of community and social commitments, ethnic ties and proximity to acquaintances, ownership types and economic conditions" can be mentioned as important components of sense of place in historical districts which have earned average scores of 4.01 to 4.2. Below images illustrate the physical examples of sense of place components in historical districts.

Understanding the components can help urban designers and planners to fit involved in historic districts. Considering these factors in future plans would promote the inhabitants' sense of place. In other words, promote the sense of identity and belonging among them, and will be followed by continuation of residence and survival, promotion of protection behavior and social participations, and increase the sense of responsibility of the inhabitants of these districts in order to achieve a healthy, sustainable and community-based environment.

## POSTSCRIPT

1. The general components of "Environmental characteristics" include Physical components: "to be visible, context", Activity components: "monitoring", Meanings components: "trustworthiness, sense of mission", and Individual-Social components: "care". These

components were eliminated from the analysis due to their ambiguous definitions.

2. First stage of Delphi technique can be briefly explained as below:

a) Physical category: Materials, texture, color is a subset of physical features. Enclosure can result from proportions and scale. The word distance is also ambiguous. The edges, nodes and landmarks are the physical components that affect legibility and identification. The environmental sustainability is very general. Many of the above are artifact and human-made environments, so this is a general component.

b) Activity category: A suitable walking space can be considered as a subset of the Way, path, Roads and pedestrian. Information and communication technology can lead to familiarity with the place and has no direct impact on the sense of place. Private and public spaces are the bodies that lead to social interactions and activities. The word "location" is ambiguous.

c) Individual-social context: The component of memories and experiences of the place can be put under a single category. Political issues and traditional knowledge also have a general nature. The sense of community and social commitment can be in one set.

d) Meanings category: Considering the meaning of a sense of place that consists of the concepts of "identity, attachment and dependency" and examines the emotional and internal relationships between man and place, then the topics of identity of place, man-place relationship, affiliation and attachment are all sense of place definitions in a way and have the same conceptual nature. Also, beauty and arrangement components can be placed in a single set and components place character and its uniqueness can placed in another single set. Safety component does not have meanings nature and is an activity, however secured Feeling is meanings.

3. Importance degree for each component, as per average score given based on experts' opinions, consists of below intervals respectively. Very high: (4.21 to 5), High: (3.41 to 4.2), Medium: (2.61 to 3.4), Low: (1.81 to 2.6) and Very low: (1 to 1.8)

## CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this manuscript.

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