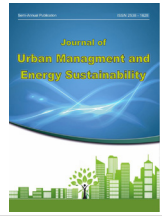


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CASE STUDY RESEARCH PAPER

Explaining the role of sense of place using Iranian architectural characteristics with a contemporary approach

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ABSTRACT

Explaining the role of sense of place through the lens of Iranian architectural characteristics with a contemporary approach necessitates a thorough exploration of the interplay between architecture, culture, and identity in Iran. By integrating traditional elements with modern innovations, architects can design spaces that resonate profoundly with cultural identities, thereby strengthening the emotional and psychological bonds individuals share with their environments. This research adopts an analytical-descriptive methodology and is categorized as applied and developmental research. Additionally, it serves as exploratory research due to the scarcity of prior studies addressing the role of sense of place in relation to Iranian architectural characteristics within a contemporary framework. The theoretical foundations of the study consider effective factors influencing architecture, particularly in ecological contexts. By incorporating principles of architecture, these factors are evaluated by experts and stakeholders using the Delphi method for indexing. Findings reveal that the experts identify cultural identity, sustainable architecture, climate responsiveness, and interaction with natural features as the most significant factors contributing to effective architectural practices. Specifically, cultural identity scored 4.92, while sustainable architecture received 4.55, indicating their paramount importance for future research endeavors. Ultimately, the study underscores the necessity of prioritizing these indicators to enhance the realization of sense of place in contemporary Iranian architecture.

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INTRODUCTION

Explaining the role of sense of place using Iranian architectural characteristics with a contemporary approach involves an intricate examination of the relationship between architecture, culture, and identity in Iran. The “sense of place” is a concept that encapsulates the emotions, meanings, and values that people associate with particular locations. In the context of Iranian architecture, this sense is deeply intertwined with the historical, social, and environmental elements that define the spaces (Rostami, 2020). Iranian architecture has a rich heritage characterized by its unique features, including courtyards, iwans, domes, and intricate tile work. These elements are not merely decorative; they serve as the building blocks of a cultural identity that resonates with the people and their surroundings (Khanmohammadi & Zandi, 2021). The traditional Iranian courtyard, for instance, is a classic architectural feature that fosters a sense of community and belonging. It acts as a transitional space, connecting the interior of a home to the external environment while providing privacy and facilitating social interactions. In contemporary architectural practice, there is a growing interest in reinterpreting these traditional elements to create spaces that reflect modern lifestyles while honoring cultural heritage (Zarghami & Naderi, 2019). By integrating features such as courtyards into modern designs, architects can enhance the sense of place, creating environments that foster connection, comfort, and a sense of identity among inhabitants (Nowzari, 2022). Moreover, the use of materials in Iranian architecture plays a crucial role in establishing a sense of place. Traditional materials like adobe, brick, and stone are not only environmentally appropriate but also imbued with historical significance (Khanmohammadi & Zandi, 2021). When contemporary architects select these materials, they evoke a connection to the past, reinforcing the identity of a space. For example, buildings that utilize locally sourced materials maintain a dialogue with

the landscape, fostering a sense of belonging and continuity between the past and present. This approach is increasingly relevant in urban areas where rapid modernization can lead to a disconnection from historical roots (Rostami, 2020). Additionally, the principles of Persian garden design, with their emphasis on harmony and balance, can provide valuable insights into creating spaces that enhance the sense of place (Zarghami & Naderi, 2019). The layout of these gardens—often featuring water elements, symmetrical patterns, and lush vegetation—serves as inspiration for contemporary landscapes that seek to create serene and inviting environments. By embedding such elements into modern architecture, designers can cultivate a sense of tranquility and connection to nature, essential for fostering a sense of place in bustling urban contexts (Mohsenipour & Zakeri, 2018). Furthermore, contemporary architecture in Iran is also experiencing a shift toward sustainability, which inherently enhances the sense of place. By embracing eco-friendly practices and sustainable materials, architects can create buildings that are not only functional but also responsive to the environmental context (Nowzari, 2022). This holistic approach enriches the experience of the space, as inhabitants become more aware of their connection to the environment and historical narratives. Sustainable practices also reflect the traditional Iranian understanding of nature, as many historical structures were designed to harmonize with the landscape (Khanmohammadi & Zandi, 2021). The role of light in Iranian architecture is another significant aspect that contributes to the sense of place. Traditional designs often incorporate strategic openings and stained glass (shisheh) windows to filter natural light, creating dynamic spaces that change throughout the day (Rostami, 2020). This manipulation of light not only enhances the aesthetic quality of spaces but also affects how inhabitants interact with their environment. Contemporary architects can learn from these principles by designing spaces that prioritize

natural light, fostering a more inviting and uplifting atmosphere (Mohsenipour & Zakeri, 2018). Moreover, the symbolism embedded in Iranian architectural forms adds another layer to the sense of place. Features such as domes and minarets not only serve structural functions but also carry cultural and spiritual significances (Zarghami & Naderi, 2019). By thoughtfully integrating these symbols into modern designs, architects can evoke a sense of pride and identity among the inhabitants. This approach not only honors the past but also creates a narrative that resonates with the contemporary context (Nowzari, 2022). In addition, the application of local crafts and artisanship into contemporary architectural practice plays a vital role in enhancing the sense of place (Khanmohammadi & Zandi, 2021). Using materials such as handmade tiles, woodwork, or plaster decorations brings a unique identity to modern buildings that reflect the rich cultural tapestry of Iran. This connection to craftsmanship fosters a sense of continuity and coherence in architectural expression, enriching the overall aesthetic experience. In the context of urban development, strategies rooted in Iranian architectural characteristics can significantly contribute to a strengthened sense of place. By creating pedestrian-friendly spaces that prioritize social interaction and community engagement, urban environments reflect the cultural traditions found in historical Iranian cities (Rostami, 2020). These strategies promote vibrancy in urban areas, facilitating community ties and a shared sense of identity among residents (Zarghami & Naderi, 2019). Furthermore, it is essential to recognize the importance of context-specific responses to modern challenges. For example, the integration of green spaces in urban planning can echo traditional Persian gardens, enriching the sensory experiences of inhabitants and reinforcing their connection to the locality (Nowzari, 2022). This remembrance of the past, when combined with contemporary design, fosters a richer narrative that connects people with their surroundings.

The influence of social interactions within architectural spaces can also enhance the sense of place, promoting engagement among residents. By designing multifunctional public spaces that accommodate various activities, architects create opportunities for community gathering and social bonding, enhancing the collective identity of neighborhoods (Mohsenipour & Zakeri, 2018). Moreover, considering the audiovisual aspect of architecture, the use of sound—whether from bustling markets, flowing water features, or communal gatherings can help enhance the immersive experience of place (Khanmohammadi & Zandi, 2021). These sensory experiences foster a connection to the environment that goes beyond mere visual appreciation, creating an atmosphere filled with life and vibrancy.

Lastly, addressing the notion of identity in contemporary Iranian architecture requires an understanding of the dynamic interplay between tradition and innovation. As architects grapple with the rapidly changing urban fabric and social dynamics, the challenge lies in ensuring that the designs remain reflective of their cultural roots while addressing contemporary needs (Rostami, 2020). Through conscious design choices that respect local history and contemporary demands, architects can create spaces that truly resonate with their communities. In conclusion, the interplay between sense of place and Iranian architectural characteristics offers profound insights for contemporary architectural practices. By honoring traditional elements while embracing modern innovations, architects can create spaces that resonate deeply with cultural identities, enhancing the emotional and psychological connections individuals have with their environments. As Iran navigates the complexities of modernization, the integration of architectural heritage into contemporary design not only preserves the past but also enriches the future, fostering environments that are meaningful, functional, and reflective of a rich cultural narrative.

MATERIALS AND METHODS

Literature Review

Definition and Concept of Sense of Place

Sense of place is a psychological and social concept that has intrigued researchers and designers throughout history. This concept pertains to the emotions and emotional connections individuals establish with places, contributing to identity and a sense of belonging (Cresswell, 2004). Various factors influence sense of place, including history, culture, language, and architecture (Tuan, 1977). In the realm of Iranian architecture, sense of place is particularly evident in the spaces and forms that have evolved throughout history (Rostami, 2020). Historically significant elements of Iranian architecture, such as iwans, courtyards, and domes, each possess unique connections to the sense of place (Khanmohammadi & Zandi, 2021). These features not only emphasize functional aspects but also enhance the emotional appeal of spaces, thereby strengthening a sense of belonging among residents (Gee, 2010). Examining sense of place in Iranian architecture necessitates a deeper understanding of the structures and forms that have developed over time. The importance of sensory and emotional experiences in the interaction between inhabitants and space is particularly emphasized (Montgomery, 1998). For instance, the incorporation of natural light into buildings, the localization of natural elements, and the design of communal spaces can enrich people's emotional experiences (Nowzari, 2022). As attention to environmental and social sensitivities in new designs increases, sense of place emerges as a primary goal (Mehta, 2013). This section explores the relationship between architectural design and sense of place, elucidating how design influences individuals' emotional responses to their surroundings (Zarghami & Naderi, 2019). These interactions assist architects in creating buildings that address functional needs while providing profound emotional and aesthetic experiences for users (Christensen, 2016). Ultimately, the exploration

of sense of place must encompass social and cultural dimensions, highlighting its influence on individuals' daily lives and social interactions (Cresswell, 2004).

Characteristics of Iranian Architecture and Their Impact on Sense of Place

Iranian architecture, as a rich cultural vessel, possesses specific characteristics that can evoke a strong sense of place (Sadri, 2015). Iranian architectural structures typically feature intricate details and aesthetic decorations that convey particular cultural and historical messages to the observer. Elements such as windcatchers, domes, and colorful façades embody symbols of Iranian identity (Zarghami & Naderi, 2019). Windcatchers, a key feature of traditional Iranian architecture, have historically served as a mechanism for temperature regulation and ventilation, providing comfort and ease in spaces (Nowzari, 2022). This aspect demonstrates how traditional designs can address environmental needs while simultaneously reinforcing a sense of place (Khanmohammadi & Zandi, 2021). Moreover, central courtyards facilitate social interaction and gatherings, enhancing a sense of belonging. Additionally, the use of light and color in Iranian architectural works can significantly impact the experience of sense of place (Montgomery, 1998). The vibrant façade designs, alongside the use of stained glass in mosques and traditional homes, create interactions between light and color, producing a meaningful and enchanting atmosphere (Sadri, 2015). This approach to light in new designs can revitalize the sense of place, offering unique spiritual and emotional experiences for inhabitants. Contemporary designs in Iran must pay attention to cultural and historical features to enhance sense of place in urban or rural contexts (Rostami, 2020). Architects can incorporate traditional elements such as tile decorations into modern projects, establishing a connection between past and present (Gee, 2010). Consequently, it can be concluded that contemporary designs will only be successful when they consider the cultural fabric and spir-

itual essence of the community, thus enhancing the sense of place (Rostami, 2020). To achieve sustainable and contemporary architecture, it is essential for architects to pay close attention to the historical and aesthetic characteristics of Iranian architecture.

Impact of Contemporary Architecture on Sense of Place

Contemporary architecture in Iran faces numerous challenges that can potentially diminish the sense of place (Zarghami & Naderi, 2019). In many instances, modern designs may stray from traditional principles and characteristics, leading to a neglect of sense of place and local culture (Mehta, 2013). Striking a balance between innovation and the preservation of cultural heritage can help strengthen the sense of place and improve the aesthetic quality of spaces (Nowzari, 2022). In this context, contemporary architecture can draw inspiration from traditional concepts and adapt them for present-day needs (Khanmohammadi & Zandi, 2021). Through hybrid designs, architects can create innovative and meaningful spaces that contribute to a reinforced sense of place while maintaining visual appeal (Christensen, 2016).

For instance, the use of smart lighting technologies and new materials in conjunction with traditional elements can help create dynamic and engaging spatial experiences that foster a sense of place (Sadri, 2015). Moreover, attention to public spaces and social interactions in contemporary design can contribute to strengthening the sense of place (Rostami, 2020). Spaces such as parks, squares, and pedestrian areas should be designed to promote human connections and enhance a sense of belonging (Gee, 2010). One of the significant challenges in contemporary architecture is addressing the diverse needs of the new generation, which expects their living spaces to be flexible and varied (Mehta, 2013). Therefore, contemporary designs should be able to cater to a broader spectrum of social, economic, and cultural needs while simultaneously drawing inspiration from historical context and scale (Zarghami & Naderi, 2019). It is also crucial

that new designs consider local materials that align with both environmental and contemporary Iranian spirit (Nowzari, 2022). This approach can help preserve cultural identity while reinforcing sense of place against social and economic changes. The primary goal of contemporary Iranian architecture is to combine historical elements with modern innovations to enhance sense of place while simultaneously improving residents' quality of life (Rostami, 2020).

Empirical Examination of Sense of Place in Iranian Architecture

To gain a deeper understanding of sense of place in Iranian architecture, empirical and field studies are essential (Khanmohammadi & Zandi, 2021). Such studies can include interviews, case studies, and surveys from inhabitants and architects to gather real feedback regarding emotions and experiences related to various places (Nowzari, 2022). These data can assist architects and researchers in identifying the strengths and weaknesses of existing designs and leveraging insights for future projects (Rostami, 2020). Additionally, such studies can help identify the needs and expectations of residents, enabling designers to create better living spaces that genuinely resonate with users (Mohsenipour & Zakeri, 2018). In empirical studies, factors influencing sense of place could include visual characteristics of spaces, social amenities, and human interactions (Cresswell, 2004). By employing both quantitative and qualitative methods, a more profound analysis of these factors can be achieved, examining their impact on sense of place in residential complexes, public spaces, and urban areas (Zarghami & Naderi, 2019). Moreover, the exploration of residents' historical and cultural experiences may facilitate the reproduction of sense of place in contemporary designs (Montgomery, 1998). In this context, part of the designs may focus on revitalizing cultural and social aspects of the past, thereby portraying the narrative of residents' lives (Rostami, 2020). Such connections can lead to increased sense of attachment and satisfaction among residents. Some studies

have indicated that when designs respond to the emotions and needs of individuals, they can positively influence the social behaviors of residents (Nowzari, 2022). Creating social environments that allow for positive interactions is of considerable importance (Khanmohammadi & Zandi, 2021). Ultimately, the analysis of these experiences, considering cultural and social dimensions, can yield positive outcomes for future designs (Zarghami & Naderi, 2019). Paying attention to the perspectives of residents and architects in design projects can enhance the quality of living spaces and revive the sense of place.

The Future of Sense of Place in Contemporary Iranian Architecture

The future of sense of place in contemporary Iranian architecture requires a new approach to space design that encompasses flexibility and adaptability to socio-economic changes (Mehta, 2013). This future may be intertwined with sustainable design principles and the revitalization of cultural appeal. In light of increasing urbanization and rapid urban development, contemporary architects face new challenges and opportunities that can reinforce sense of place (Rostami, 2020). Designing public spaces and engaging local communities in this process can significantly impact creating a shared identity and sense of place (Cresswell, 2004). The role of technology in the future of space design also becomes apparent. The application of innovative technologies in construction and design can facilitate creativity in realizing sense of place while maximizing the use of available resources (Khanmohammadi & Zandi, 2021). Arising from the integration of digital tools and adaptive design strategies, the potential to craft environments that are both functional and resonant with profound cultural significance increases (Rostami, 2020). Attention to community inputs and participatory design processes can facilitate a sense of ownership and belonging within the community. As urban environments evolve, understanding diverse demographic needs becomes crucial. Flexibility in the design

of public spaces can promote beneficial social interactions while accommodating various activities (Zarghami & Naderi, 2019). Ultimately, the future of sense of place in Iranian architecture will hinge on the successful amalgamation of historical and contemporary elements, along with the integration of innovative design principles, thereby facilitating improved living conditions and preserving cultural identity for generations to come (Nowzari, 2022).

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 role of sense of place using Iranian architectural characteristics with a contemporary approach. According to the course of theoretical foundations, the effective factors in the influence of the urban landscape in the field of ecology are considered and by explaining the branch of landscape architecture to it, these factors are tested by experts and elites for indexing using the Delphi method. Are taken so that the framework of the proposed criteria can be presented in chapter one. Based on this, a group of components has the ability to generalize in the direction of conducting research, which includes the assumption of a pair of criteria.

DISCUSSION AND FINDINGS

When we engage in the contemporary reinterpretation of Iranian architectural elements, we seek to continue a sense that has been established in the architecture of ancient Iran as an emotional attachment, creating a sense of place rooted in the history and fabric of Iran's architectural past. This evokes in the audience the values and culture of the past, resulting in a sense of belonging and subsequently a sense of identity for the individual. The contemporary reinterpretation of Iranian architectural elements emphasizes preserving the values and concepts inherited from previous generations, which is

significantly important and worthy of reflection. Additionally, it breathes life into the structure and creates meaning within the space because the concepts and values of Iranian architecture stem from all the influential factors that generate spatial sensation, form, and the spirit of the building. Therefore, through the contemporary reinterpretation of Iranian architectural elements, we can set the stage for the influential factors that contribute to the identity of Iranian architecture, giving rise to a building with a contemporary architectural form while being rooted in the fabric of Iranian architecture, thereby showcasing Iranian architectural identity. Based on the conducted studies, it seems that the Persian garden, as one of the hallmarks of Iranian architecture, can significantly impact the spatial experience of a cultural building; thus, we can achieve valuable concepts by incorporating elements of the Persian garden in the construction of a cultural building, ensuring that contemporary interpretations align with the legacy and identity of Iranian architecture. (Fig. 1)

Considering the examination of the concepts that create a sense of place from different perspectives and levels, the factors constituting a sense of place can be categorized into two groups: 1) perceptual and cognitive factors, and 2) physical factors.

1. Perceptual and cognitive factors: A sense of place is a complex connection of meanings, symbols, and qualities that an individual or group consciously or unconsciously perceives from a specific space or location. The meanings and concepts discovered after an individual perceives a place are among the

factors that create a sense of place. In this context, a sense of place is not merely a feeling, emotion, or any type of relationship with a specific location; rather, it is a cognitive structure and system through which individuals develop a sense of belonging to objects, people, and concepts of a place. Therefore, a person without a sense of place is unable to live in a specific environment, as a sense of place reflects the ability of a space or location to generate a special feeling regarding the entirety of that place. With a sense of place, the individual's relationship with all the concepts, people, and other subjects present in that location is established. In this case, place is a whole that audiences recognize all activities and events with.

2. Physical factors: Research shows that the physical characteristics of the environment influence the creation of meanings and the provision of specific activities, which impact the sense of place. Facilitating activities within a space is variable according to satisfaction with environmental characteristics such as temperature, sound, and the possibility of social interactions and individual activities, produced by static elements of the environment like dimensions, proportions, and forms. Recognition and perception of a space are established through understanding meanings, symbols, and the aesthetic quality of the form and nature of the space, as well as their identity. In summary, a sense of place is the result of the internal relationship of humans, their mental imagery, and environmental characteristics. (Fig. 2)

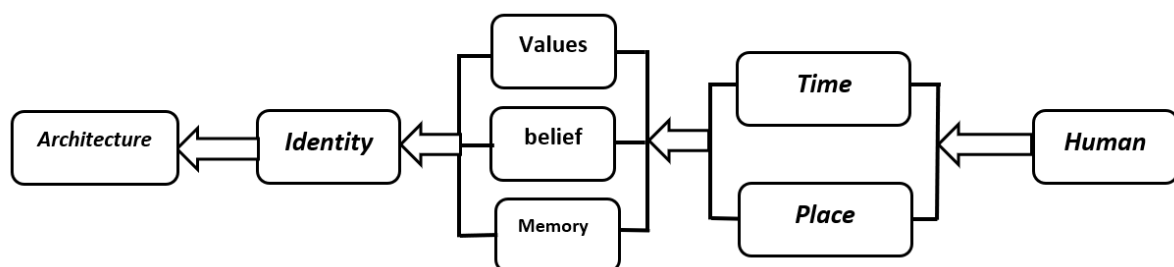


Figure 1: Factors influencing the sense of place and identity

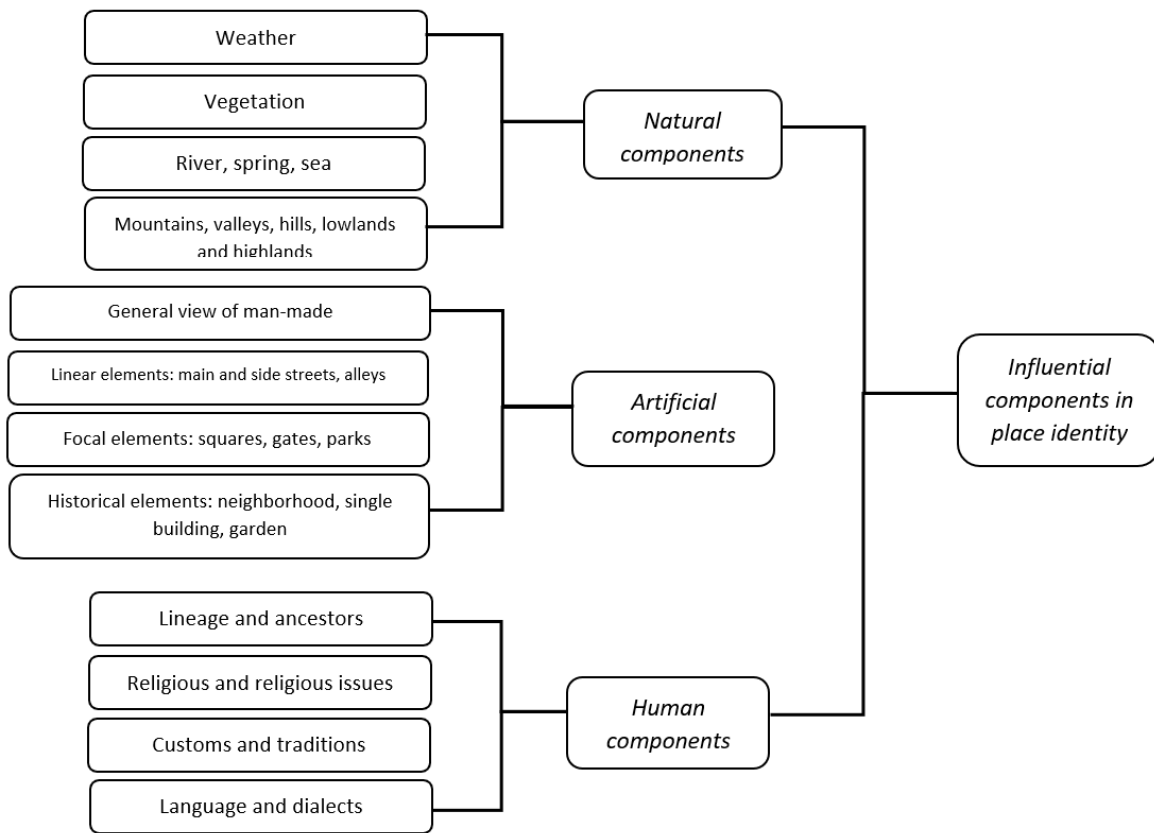


Figure 2: Components affecting the sense of place

Therefore, the factors influencing the sense of place include physical, perceptual, social, and functional elements, which contribute to the creation of a spatial feeling in the environment. For a sense of space to emerge, the physical, perceptual, social, and functional aspects must be aligned and interconnected so that harmony among them is achieved, creating a desirable feeling in the audience of the building. A cultural place, based on the effects determined by the goals of the space, significantly enhances the potential for a spatial sense. Thus, all four influential factors in creating a sense of place must be coordinated with this potential to ensure the quality of the spatial feeling reaches a desirable level. Hence, choosing the Persian garden as one of the hallmarks of Iranian architecture, which has historically reflected the architectonic

concept of the garden and a sense of place or “placeness,” is another influencing factor in the creation of a sense of place and can facilitate the provision of a spatial feeling in a cultural building. (Fig. 3)

The architectural gaze of today towards the history of past architects and their architecture, and the importance of this subject, requires a connecting link between contemporary architecture and that of the past. By finding this link, we can connect today’s architecture with past architecture and also give identity to contemporary architecture. Architecture these days often emerges in urban forms without regard for its ancient past, disregarding all the principles that previous generations adhered to, advancing independently of its climate and cultural architectural elements. Despite the climatic and

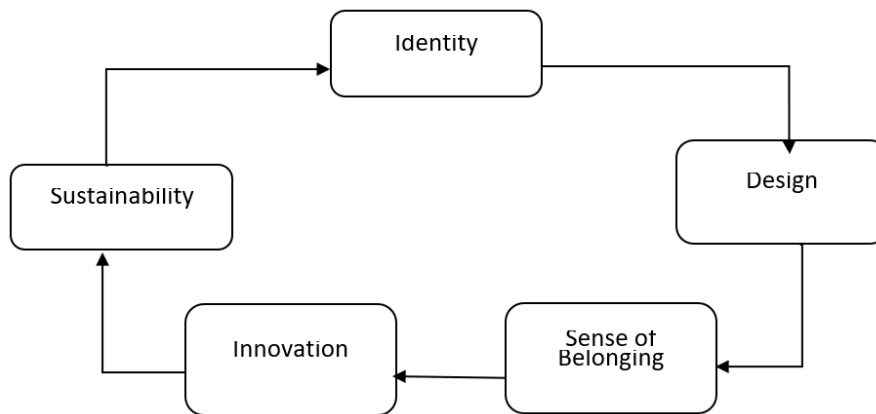


Figure 3: Factors affecting the creation of a sense of place

territorial differences that have significantly influenced its form and historical background, architecture must progress to maintain its identity.

Delphi method

The most important task in the Delphi method is the selection of experts and experts in the desired field. In this way, the selected people are given information about the Delphi method and they are invited to participate in this research. Anonymity is one of the important components of this research approach, the questions from the selected specialists and experts are followed by successive questionnaires. In this research, the initial model is developed based on the theoretical foundations and the use of existing models around the concepts of the urban landscape and the structural factors of the green roof. After the initial design, this model was tested and developed through the Delphi method. The use of open-ended questions in the Delphi questionnaire and their analysis in the next stages was a judgment about reaching a consensus among experts and reaching theoretical saturation of the qualitative methods used in the analysis of the data obtained in the present research. The collection of field data in the current research began with the collection of questionnaires in the first stage of the research and the extracted data were analyzed through descriptive statis-

tics and qualitative analysis.

Delphi method findings

In this research, the dimensions of the urban landscape and the components of the green roof were used as a default in the first stage, extracted from the theoretical foundations of the subject, and then the dimensions of the landscape and the components of the ecological urban landscape are presented according to the hypothesis of the research. These sub-components are expressed based on the estimation of the knowledge dimension of experts and also the perceptual process of citizenship. These factors are set as a package of suggestions in the panel of experts and elites so that the Delphi method can be planned and applied. A total of 20 factors that were tested with this method to reach the final indicators include:

Based on the article topic "Explaining the Role of Sense of Place Using Iranian Architectural Characteristics with a Contemporary Approach," here is a list of 20 influential factors on sense of place in Iranian architecture with a contemporary approach: Cultural identity, Use of local materials, Design of open spaces, Natural lighting, Attention to climate, Interaction with nature, Decorative details, Geometric proportions, Colors and textures, Social spaces, Preservation of traditions, Accessibility, Multifunctional environments, Human scale, Attention to history

and heritage, Innovation in design, Impact on sense of belonging, Interactive spaces, Sustainable architecture, Sensory experience

Findings of implementing the Delphi method

First round

In this round, the panel members identified 14 factors out of 20 factors that were extracted from successful researches as having a medium, high and very high impact on the role of sense of place using Iranian architectural characteristics with a contemporary approach. The detailed and extended results related to the implementation of the first stage of questionnaire distribution are given in the following table. The factors of identity, texture and materials, activity, stimulus, decorations, resilience, vegetation have been removed from the Delphi process due to their average importance of less than 2.5. (Tab. 1)

Second round

After the implementation of the first stage of assessment and evaluation of the opinion of the experts of the panel regarding the factors

proposed and extracted from the theoretical bases and also receiving the suggestions of the panel members, in this round, in order to observe caution, all the factors extracted from the theoretical bases are again Along with the average opinion of the members in the first round and the previous opinion of the same member, it was provided to all the experts of the panel. The panel members recognized 10 factors out of the 14 factors presented in the second round as having a high and very high impact (with an average greater than 2.5) on the research framework. The detailed and extended results related to the implementation of the second stage of questionnaire distribution are given in the table below. Kendall's coordination coefficient for the members' answers about the order of the 10 factors that had a high and very high influence in this round was 0.775. The factors of Accessibility, Human scale, Attention to history and heritage and Colors and textures have been removed from the Delphi process due to their average importance of less than 3.5 (Tab. 2).

No.	Factors	Number of responses	Average	Standard deviation	Min.	Max.
1	Cultural identity	15	4/18	0/42	1	5
2	Design of open spaces	15	3/38	0/61	1	5
3	Natural lighting	15	3/56	0/48	1	5
4	Attention to climate	15	4/10	0/35	1	5
5	Interaction with nature	15	3/95	0/45	1	5
6	Colors and textures	15	4/02	0/62	1	5
7	Preservation of traditions	15	3/75	0/61	1	5
8	Accessibility	15	3/10	0/35	1	5
9	Human scale	15	3/28	0/41	1	5
10	Attention to history and heritage	15	3/58	0/38	1	5
11	Innovation in design	15	3/88	0/41	1	5
12	Impact on sense of belonging	15	4/10	0/39	1	5
13	Interactive spaces	15	3/91	0/43	1	5
14	Sustainable architecture	15	3/45	0/44	1	5

Table 1: phase one of the fuzzy method in compiling the final indicators of the role of sense of place using Iranian architectural characteristics with a contemporary approach

No.	Factors	Number of responses	Average	Standard deviation	Min.	Max.
1	Cultural identity	15	4/45	0/38	2	5
2	Design of open spaces	15	3/58	0/55	2	5
3	Natural lighting	15	3/85	0/45	2	5
4	Attention to climate	15	4/20	0/32	2	5
5	Interaction with nature	15	4/10	0/41	2	5
6	Preservation of traditions	15	3/95	0/55	2	5
7	Innovation in design	15	4/02	0/38	2	5
8	Impact on sense of belonging	15	4/15	0/25	2	5
9	Interactive spaces	15	3/96	0/26	2	5
10	Sustainable architecture	15	3/86	0/35	2	5

Table 2: Phase two of the fuzzy method in compiling the final indicators of the role of sense of place using Iranian architectural characteristics with a contemporary approach

Third round

In the third round of compiling the research framework, the final indicators, along with the average opinion of the members in the second round and the previous opinion of the same member, were provided to all panel experts. The detailed and extended results related to the implementation of the third stage of questionnaire distribution are given in the table below. Kendall's correlation coefficient for the members' answers about the order of the 10 factors was obtained as 0.793 (Tab. 3).

CONCLUSION AND RESULTS

The results of the three rounds of implementing the Delphi method in the research show that a consensus has been reached among the panel members for the following reasons and the repetition of the rounds can be ended:

- 1- In the second round, more than 50% of the members chose 14 influential factors in developing the urban landscape of Ecology based on the concept of urban landscape architecture, who had an average greater than 2.5 among their factors.

No.	Factors	Number of responses	Average	Standard deviation	Min.	Max.
1	Cultural identity	15	4/92	0/25	3	5
2	Design of open spaces	15	4/05	0/22	3	5
3	Natural lighting	15	4/02	0/23	3	5
4	Attention to climate	15	4/35	0/29	3	5
5	Interaction with nature	15	4/20	0/31	3	5
6	Preservation of traditions	15	4/06	0/29	3	5
7	Innovation in design	15	4/12	0/32	3	5
8	Impact on sense of belonging	15	4/22	0/19	3	5
9	Interactive spaces	15	4/09	0/23	3	5
10	Sustainable architecture	15	4/55	0/24	3	5

Table 3: Phase three of the fuzzy method in compiling the final indicators of the role of sense of place using Iranian architectural characteristics with a contemporary approach

- 2- The standard deviation of the members' answers about the importance of the factors in the third round has changed significantly compared to the previous rounds.
- 3- Kendall's coordination coefficient for members' answers about the order of factors in the third round is 0.793. Considering that the number of panel members was more than 10 people, this amount of Kendall's coefficient is considered quite significant.
- 4- Kendall's coefficient of coordination for the arrangement of 10 influential factors in developing a research framework in the third round compared to the second round only increased by 0.017, which indicates a significant growth in this coefficient or the degree of consensus among the panel members in two consecutive rounds.
- 5- The points given to the factors by the experts and elites indicate that the indicators of Cultural identity, Sustainable architecture, Attention to climate and Interaction with nature features are the high points and therefore the most effective in realizing the construction and working model extraction.

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