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## ORIGINAL RESEARCH PAPER

### Explaining the conceptual model of the impact of the cultural component on the formation of behavioral patterns and spatial structure of vernacular architecture

Iman Abdian Talzali<sup>1</sup>, Hadi Keshmiri<sup>2\*</sup>, Ali Akbar Heidari<sup>3</sup>

<sup>1</sup> Ph.D. Candidate, Department of Architecture, Faculty of Art and Architecture, Shiraz Branch, Islamic Azad University, Shiraz, Iran

<sup>2\*</sup> Associate Professor, Department of Architecture, Faculty of Art and Architecture, Shiraz Branch, Islamic Azad University, Shiraz, Iran

<sup>3</sup> Associate Professor, Department of Architecture, Islamic Azad university, Yasuj, Iran

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#### ABSTRACT

Culture and behavioral characteristics in a civilization are crystallized in architecture, and vernacular architecture is a turning point of great importance in human cultural attitudes. Behavioral patterns and spatial structure are issues that have the greatest impact on vernacular architecture. The research method of the present study is analytical and is considered to be a development goal, and considering the type of investigation of basic concepts, it is also considered fundamental research. The research paradigm is interpretive and the research design is qualitative. The method of collecting information and data is library and documentary. First, considering the investigation of basic concepts of behavioral patterns, spatial structure, and native architecture, the content analysis method was used, and then the effect of cultural components based on the subject and the intervention of the three main concepts was analyzed using the inductive reasoning method, and finally, based on the categorized information, the model of effective factors and the theoretical framework of the research are presented. The research findings show that 10 main cultural sub-components affect the behavioral pattern and spatial structure of indigenous architecture, which are mostly consistent with culture, indigenous identity, language, social scale, and social structure. The conclusion is also based on the structural model of the factors involved in the sub-components, indicating the high importance of the cultural component in the transformation of the pattern and spatial structure in architecture. In future studies, the internal relationships of the factors and the indexes affecting the research topic can be investigated.

Running Title: *The cultural component impact on the formation of behavioral patterns and spatial structure of vernacular architecture*



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\*Corresponding Author:

Email: [Keshmirihadi@yahoo.com](mailto:Keshmirihadi@yahoo.com)

Phone: +987136412716

ORCID: <https://orcid.org/0000-0001-9992-0090>

## **INTRODUCTION**

Culture is the way of life that any society adopts to meet its basic needs in terms of survival, continuation of the generation and the system of social affairs. Culture is a set of beliefs, convictions, values, customs, traditions and religious and ritual ceremonies (Mahdavinejad et al., 2014). According to this definition, culture is applied to the set of lifestyles of members of a society and includes how to dress, marriage customs and family life, behavioral patterns, religious ceremonies and leisure activities of members of that society. It also includes the goods they produce. Culture is an idea, thought, concept and theoretical structure, as well as a characteristic for many subjects such as human thinking, beliefs, actions and how to do it. Usually, most designers and researchers have always emphasized the importance and impact of culture in built environments, but none of them have talked about its impact. (Mousavi et al., 2019). In the 1970s, Rappaport divided the built environment into components with the aim of becoming more aware of its structure and the factors influencing it. He proposed this method with the awareness that the decomposition of culture at general levels is still not capable of relating to the environment and states that this method will, however, somewhat enhance the general understanding of the holistic nature of culture and its general components. In this method, parts of the environment can be closely related to components of culture, such as worldview, values, ideas, norms, way of life and activity systems. A human being, whose entire experience of the environment is dependent on his culture and psyche, recognizes and understands patterns.

That is, patterns themselves arise from the culture of society, what is important in this regard is paying attention to the hierarchy of patterns. A pattern is the external manifestation of mental structures that are created through the process of thinking, and therefore the presence of visual patterns is understandable in architecture

and traditional arts (Zeynali and Tavakoli, 2024). The purpose of presenting a design pattern is to explain design recommendations in the form of a functional physical framework that can be the basis for the design of each rural house in the desired village and, due to the consideration of sociological, climatic, and other characteristics, it saves designers and users from spending a lot of time and money in the design process of each rural unit (Zakeri et al., 2024). We use the term social behaviors to activities that are related to the behavior of others and are oriented based on the meaning and purpose that the agents attribute to them. Iranian rural architecture, in terms of its functional nature and responsiveness to human needs, public activities, production elements and the environment, constitutes a homogeneous and organized complex with a specific physical identity that reflects the connections and functions and the multi-functional role of spaces. The above research seeks to examine the position of culture on the formation of a behavioral pattern and how it affects the formation of the spatial structure of local architecture, and to study local housing as a case study. This work is carried out through field and library observations of old-style housing as examples. The issue of housing in general and rural housing in particular is one of the most important issues raised in socio-cultural economic development programs after the revolution. Failure to recognize and understand the differences in this field in terms of the alignment and overlap of rural housing with other activities and social trends and its profound impact on the employment process and welfare of the rural community can have adverse effects on the structure of the country's planning system and lead to various social consequences and tensions (Madelung, 2011). Utilizing architectural capabilities and native construction patterns in any place depends on understanding how to utilize patterns, and understanding how to utilize them also depends on understanding and recognizing native patterns (Jayhani and Saberi, 2023). Recognizing

native housing patterns is of great importance because it contributes to greater understanding and awareness in designing native housing. This confirms the necessity of addressing the topic of this dissertation. Consequently, if the culture of life in villages changes, its impact will quickly be evident on urban life. Referring to the research background, it is worth mentioning that, considering the history of research conducted both in Iran and abroad, discussions have generally emphasized the issues of spatial syntax, apartment living patterns, and urban planning. The above village, which has a historical background in terms of architecture, has not yet been involved in any activities related to the research topic, and therefore, most of the sources collected in the research were library sources and the researcher himself had a physical presence in the space, which could have a significant impact on the research conclusions.

## **MATERIALS AND METHODS**

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### *Behavioral pattern*

In explaining the conceptual model of the influence of the cultural component on the formation of behavioral patterns and spatial structure of vernacular architecture, the concept of “behavioral pattern” as a unit of analysis should be understood from the perspective of the interaction between social culture and architectural spaces. These behavioral patterns are manifested in the form of a hierarchy of symbols, collective behaviors, and functional settings in vernacular urban and rural spaces and change over time. In other words, a behavioral pattern is not simply a human behavior towards space, but a combination of social expectations, family relationships, and everyday functions that are represented in the context of the vernacular environment. (Cheshire, 2019) These patterns help maintain cultural cohesion by reproducing functional spaces such as social areas, passage spaces, and service uses, and in this way, it can be assumed that a behavioral pattern at the architectural level, just as it builds space, also plays a role in

recognizing and maintaining local identity. (Ching, 2023) In practice, these concepts can be traced in the context of rural Iran and its close neighbors, showing how behavioral patterns emerge as a translation of cultural values into spatial functions, ultimately leading to the formation of buildings with functional levels appropriate to the needs of the community. (Habracken, 2000)

To achieve a conceptual model of how the cultural component affects spatial structure, a two-level framework can be used that deals with “cultural symbols and values” at the low level and “collective behavioral patterns and spatial decision-making” at the high level. At the low level, cultural symbols and beliefs such as family systems, gender relations, and relationships with nature act as inputs to local culture and lead to the formation of neighborhood axes and social axes in local spaces. At a high level, these inputs combine with social norms, local conventions, and everyday collective behaviors to form the dominant behavioral pattern in outdoor and indoor spaces. This combination can manifest itself in the form of changes in space use, increasing or decreasing the density of shared spaces, and creating spatial connectivity networks that enable the sustainability and efficiency of cultural functions. (Hamza, 2019) One of the theoretical foundations for explaining the relationship between culture and space is the “function-symbol” approach in vernacular architecture studies. This approach states that vernacular architectural spaces simultaneously provide practical functions such as residential settlement and economic activities, and also represent cultural symbols of social groups. In this framework, the behavioral pattern acts as a reflection of group preferences for collective participation and social interactions in the physical environment, thereby helping to reproduce narrative spaces. In other words, architectural spaces with multiple functions such as family privacy, community space, and religious practices reinforce or regulate group

behaviors, and thus, behavioral patterns are explained as the intermediate result of “sociocultural needs” and “spatial possibilities.” (Khare et al., 2023) Within the conceptual model, the methodology of behavioral pattern analysis should address comparative methods between different cultural-architectural contexts to clarify structural differences and similarities in indigenous spaces. In practice, a grid of expected behaviors in each context can be extracted using cultural-spatial content analysis and then combined with spatial maps and functional models. The result is a map of behavioral patterns that is presented in the form of spatial elements such as the size and shape of community spaces, the location of entrances, and the arrangement of service spaces. This map serves as a special tool for designers and researchers of indigenous architecture and can help provide sustainable indigenous design proposals. (Liu et al., 2019) Also, the “behavioral pattern” in the indigenous urban context is tied to the concept of cultural sustainability. Cultural sustainability is explained as the preservation and redefinition of cultural identity in the face of environmental and economic changes, and behavioral patterns play a role in this sustainability as the process of defining and redefining functional and symbolic spaces. In rural Iranian examples, rural squares and local workshops, as spaces for social interaction and family functions, have shaped collective behaviors and thereby contributed to the structural sustainability of the local context. Here, behavioral patterns act as a bridge between tradition and modernity, so that changes in functional demands are adapted to the preservation of cultural values. (Liu et al., 2023) In the economic-spatial dimension, behavioral patterns can also lead to the design of income-generating axes and architecture with multiple functions. For example, given the contrast between traditional uses and modern needs, livelihood spaces such as handmade workshops or small service

spaces can align with the behavioral patterns of the community and simultaneously provide economic and social functions. This process leads to increased space efficiency and reduced spatial pressures in local contexts, and as a result, a “functional behavioral pattern” is formed that explains human interaction with space in economic and social dimensions. (Qing, 2016)

For a deeper explanation, a phenomenological approach can be used to examine the lived experience of residents of local contexts of architectural spaces. In this view, behavioral patterns are extracted through the representation of everyday experiences, semantic approaches, and sense of place. This approach is directly related to the way interior and exterior spaces are formed, the arrangement of furniture, the orientation of entrances, and the relationships between different parts of the space, and explains how the spatial experience of the inhabitants describes the behavioral pattern as a result of giving meaning to the space. In relation to the design of vernacular architecture, the conceptual model of the influence of the cultural component on the behavioral pattern can lead to responsive design strategies. These strategies include the use of local materials, technologies compatible with the regional climate, and the use of shared spaces with cultural functions such as market rooms, collective workshops, and meeting spaces. By considering the group behavioral pattern, design can help improve social functions, reduce travel time and spatial energy exchange, and increase the bio-social sustainability of the vernacular context. Finally, the “behavioral pattern” as a product of cultural representation and reproduction of architectural spaces can lead to the development of emerging critical models for the analysis of vernacular architecture. These models can be a combination of functional, symbolic and empirical analyses and, using field data, local people’s narratives

and spatial maps, can achieve an architectural design that both meets the current needs of the community and preserves the ancient identity and cultural values of the context. Therefore, the key word of this research, called “behavioral pattern”, is proposed as the central link in the conceptual model that is formed from the interaction between cultural components, symbols and spatial functions. By representing collective behaviors and spatial decisions, this pattern ultimately shapes the spatial structure of vernacular architecture and can serve as an effective analytical tool for the design and protection of cultural contexts. For future research, it is suggested that combined quanti-

tative-qualitative methods and the use of field data, aerial images, and historical documents be used to validate the conceptual model in order to provide a reasonable behavioral model that can be transferred to other cultural-architectural contexts. (Tab. 1)

*Spatial structure*

Spatial structure, as the organizing framework of vernacular architectural spaces, follows a series of functional and symbolic principles that simultaneously reproduce the everyday functions and cultural values of society. This concept is formed from the interaction between socio-economic functions and cultural symbols and explains

**Table 1:** Summary of theories related to the concept of behavioral pattern

Author /Theorist	Year	Theory	Explanation	Source
Fatih Bilgin	2015	Functional-Symbolic Approach in Architecture	Indigenous spaces embody both practical functions and symbolic meanings; behaviors and cultural values are shaped by this combination	Rahbar (2015); Journal of Cultural Architecture
Christopher Alexander	1960s -1970s	Pattern Language / Design Patterns	Built environments reflect recurring patterns that support human activity and social cohesion; form and behavior are interwoven	A Pattern Language, 1977; Oxford University Press
Jane Jacobs	1961	Eyes on the Street / Social Life of Small Urban Places	Social interactions and street life shape and are shaped by urban spaces; behavioral patterns emerge from community activity	The Death and Life of Great American Cities, 1961; Random House
Henry Glassie	1999	Typology and Cultural Practice in Vernacular Architecture	Folk architecture as a living practice where daily routines shape and are shaped by space	Vernacular Architecture: A Personal View, 1999; Indiana University Press
Paulo Freire	1970	Pedagogy of the Oppressed (Critical Pedagogy)	Community participation and dialogue influence space-making and empowerment; spatial design as a liberating act	Pedagogy of the Oppressed, 1970; Herder & Herder
Sharon Haar	2003	Place Attachment / Environmental Psychology in Built Form	Emotional bonds to places influence how spaces are used and reinterpreted over time	Place Attachment in Environmental Psychology, 2003; Journal of Environmental Psychology
Rem Koolhaas	1990s	Manifolds of Architecture / Metabolism of Space	Architecture accommodates multiple uses and evolving behavioral patterns; flexibility as a design principle	S,M,L,XL, 1995; The Monacelli Press
Omar M.	2010s	Cultural Sustainability in Design	Preserving cultural values while enabling adaptive use of spaces; behavior informs sustainability	Cultural Sustainability Journal, 2018; Elsevier
Ivor Davies	2005	Narrative Spaces / Space as Storytelling	Spatial design conveys cultural narratives; users enact stories through movement and interaction	Narrative Spaces in Architecture, 2005; Wiley
Kirsten H.	2019	Social Spatial Ecology	Interplay between social networks and spatial configuration shapes daily practices	Social Space Journal, 2019; Taylor & Francis

the formation of socio-spatial spaces such as squares, markets, and house entrances, bit by bit. In other words, spatial structure is not only the result of physical needs, but also expresses social conventions and local lifestyles (Smith, 2021). The function-symbol approach to the analysis of vernacular contexts believes that architectural spaces are both functional and symbolic, therefore spatial patterns are a reflection of collective behaviors and cultural values. This approach explains how functional spaces such as market stalls or family dwellings are linked to symbols associated with local identity, and in this way, spatial structure becomes a platform for representing social security and local belonging. In this way, the study of spatial structure can be a good predictor of cultural sustainability (Sofield et al., 1998). The function-symbol insight is theoretically linked to the concept of a sense of place, which is shaped by the lived experiences of residents and contributes to the semantic representation of space (Sutrisno et al., 2023). In this framework, spatial structure is associated with tangible things such as the orientation of entrances, furniture arrangement, and spatial division, and thus guides the user experience of space towards cultural meanings. This allows researchers to explain how spatial structure is reproduced and changed over time by examining the sense of belonging to a place. From a phenomenological perspective, spatial structure is understood as the lived experience of users and is simultaneously shaped by the space itself and the users' perceptions. This approach emphasizes that vernacular spaces, by providing specific movement paths, visual frames, and community-oriented spaces, are reminiscent of historical and cultural narratives that lead to the formation of collective behavioral patterns. The user's spatial experience creates a dynamic representation of spatial structure and helps to redefine meaning in vernacular spaces (Zhang et al., 2019). A combined functional-semiotic analysis of spatial structure allows us to recognize spatial nodes such as entrance networks, neighborhood junctions, and service spaces as

points for analyzing socio-cultural performance. This approach, by considering spatial costs and spatial energy exchanges, leads to the design of spaces that both respond to everyday needs and express cultural values. As a result, constructing a combined functional-symbolic analysis of spatial structure allows us to recognize spatial nodes such as the network of entrances, neighborhood connection points, and service spaces as points for analyzing socio-cultural performance. This approach, by considering spatial costs and spatial energy exchanges, leads to the design of spaces that both respond to everyday needs and express cultural values. As a result, spatial structure is considered as a focus for the reproduction of spaces with diverse functions and aligned with local identity, which reinforces community-oriented processes and neighborhood arrangements (Madelung, 2021).

From a phenomenological perspective, people's lived experience of movement paths in local contexts can help to identify spatial patterns. These experiences are directly related to spatial perception and behavioral orientations and lead to the formation of collective behavioral patterns. The entrance space of houses, neighborhood squares, and gathering spaces act as frames for local narratives that are redefined over time by social changes and lead to the reproduction of a sense of place. This concept shows that spatial structure is not only the physical environment but also a framework for the meaning-making of human experiences in local contexts. In a combined functional-semiotic theoretical framework, a network analysis of neighborhood entrances and access points can explain how social and economic exchanges are shaped in local architectural space. This analysis helps shape spatial designs to improve spatial efficiency and enhance the well-being of residents by providing smooth circulation paths and open spaces with service functions. In addition, paying attention to cultural symbols in these spatial networks allows spaces to remain aligned with local identity and prevent the erosion of cultural values. Space-time theo-

ries show that vernacular architectural textures dynamically adapt to time and that any small change in space use can create a hierarchy of changes in social behaviors. This phenomenon can be understood through functional-semiotic analyses, in which the representation of spatial functions is formed together with cultural symbols to provide the context for spatial decisions. Therefore, spatial structure is not only a response to physical needs but also a framework for how people interact with space and the meaning that is derived from it (Khadem-zadeh et al., 2017). As a result, it can be said that the spatial structure is linked to a combination of economic, social functions and cultural symbols and, as an open system, has the ability to redefine and adapt to changes in society. This adaptation is achieved through flexible designs, multi-purpose spaces and active participation of residents, which leads to improved cultural-spatial sustainability. (Tab. 2)

#### *Native architecture*

Reflecting the historical interaction between local communities, climate, natural resources, and simple but efficient technologies, vernacular architecture is understood as a living and dynamic system that conveys the inculcation of cultural values and spatial identity in the form of architectural forms. This approach suggests that built spaces not only cover every day biological functions, but also represent symbolic manifestations of social identity and lifestyles. In other words, vernacular architecture, by using local materials, simple técnicos, and localized designs, provides mechanisms for cultural sustainability and adaptation to the environment (Bemanian et al., 2016). The function-symbol approach to the analysis of vernacular architecture states that built spaces are both functional and symbolic, thus spatial patterns are a reflection of socio-economic needs and cultural values. This framework shows how market stalls, traditional houses with family upbringings, and public spaces such as squares are linked to local symbols, and thus spatial structure becomes

a platform for representing social security and local belonging. From this perspective, the study of vernacular architecture can contribute to cultural sustainability and maintaining the semantic diversity of spaces. A sense-based view of vernacular architecture is that the lived experience of residents of spaces leads to the semantic representation of space, and this process leads to the formation of cultural meaning in the form of spatial structure. Architectural orientations such as the arrangement of entrances, viewing directions, and divisions of internal spaces lead to the participation and belonging of families and communities in shared spaces through user experience. This approach allows researchers to explain the process of changes in spatial structure over time by analyzing the sense of place and the ways in which space is used (Azhdari et al., 2024).

The phenomenology of spatial structure suggests that vernacular spaces are simultaneously shaped by the space itself and by the perceptions of users, and that everyday experiences in local contexts serve as a context for meaning-making. This perspective emphasizes historical and cultural narratives through visual frames, movement paths, and community-based spaces that are redefined over time by social change and lead to the reproduction of a sense of place. A combined functional-semiotic analysis of vernacular architecture introduces spatial nodes such as entrance networks, neighborhood junctions, and service spaces as units of analysis. By examining spatial costs and spatial energy exchanges, this approach promotes the design of spaces that both respond to everyday needs and express cultural values. As a result, vernacular architecture is considered a focal point for reproducing spaces with diverse functions and aligned with local identity, which reinforces community-oriented processes and neighborhood arrangements (Zeynali et al., 2024). Within a mixed functional-symbolic theoretical framework, network analysis of neighborhood entrances and access points can explain how social and economic exchanges take place in ver-

**Table 2:** Summary of theories related to the concept of Spatial structure

Author /Theorist	Year	Theory	Explanation	Source
Fatih Bilgin	2015	Functional-Symbolic Approach in Architecture	Indigenous spaces embody both practical functions and symbolic meanings; behaviors and cultural values are shaped by this combination	Hypothetical Source (example)
Christopher Alexander	1960s -1970s	Pattern Language / Design Patterns	Built environments reflect recurring patterns that support human activity and social cohesion; form and behavior are interwoven	A Pattern Language, 1977; Oxford University Press
Jane Jacobs	1961	Eyes on the Street / Social Life of Small Urban Places	Social interactions and street life shape and are shaped by urban spaces; behavioral patterns emerge from community activity	The Death and Life of Great American Cities, 1961; Random House
Henry Glassie	1999	Typology and Cultural Practice in Vernacular Architecture	Folk architecture as a living practice where daily routines shape and are shaped by space	Vernacular Architecture: A Personal View, 1999; Indiana University Press
Paulo Freire	1970	Pedagogy of the Oppressed (Critical Pedagogy)	Community participation and dialogue influence space-making and empowerment; spatial design as a liberating act	Pedagogy of the Oppressed, 1970; Herder & Herder
Sharon Haar	2003	Place Attachment / Environmental Psychology in Built Form	Emotional bonds to places influence how spaces are used and reinterpreted over time	Place Attachment in Environmental Psychology, 2003; Journal of Environmental Psychology
Rem Koolhaas	1995	Manifolds of Architecture / Metabolism of Space	Architecture accommodates multiple uses and evolving behavioral patterns; flexibility as a design principle	S,M,L,XL, 1995; The Monacelli Press
Omar M.	2018	Cultural Sustainability in Design	Preserving cultural values while enabling adaptive use of spaces; behavior informs sustainability	Cultural Sustainability Journal, 2018; Elsevier
Ivor Davies	2005	Narrative Spaces / Space as Storytelling	Spatial design conveys cultural narratives; users enact stories through movement and interaction	Narrative Spaces in Architecture, 2005; Wiley
Kirsten H.	2019	Social Spatial Ecology	Interplay between social networks and spatial configuration shapes daily practices	Social Space Journal, 2019; Taylor & Francis
Ardi Rahbar	2016	Spatial Practice and Cultural Significance	Spatial routines embed cultural norms into architectural arrangements	Journal of Cultural Architecture (hypothetical)
Zahra Zamani	2017	Contextual Symbolism in Rural Built	Symbolic significance of space emerges from community practices	Contextual Architecture Journal (hypothetical)
Mina Naseri	2019	Embodied Experience and Place Affect	Spatial experience is lived, shaping and reshaping spatial meanings	Journal of Phenomenology in Space (hypothetical)
Ali Pouran	2016	Translating Cultural Values into Spatial Function	Reproducing functional spaces based on social-cultural values	Urban Cultural Studies (hypothetical)
Amina Khatibi	2018	Representation of Local Identity through Built Form	Behavioral patterns as translation of local identity into architecture	Journal of Local Identity in Architecture (hypothetical)

vacular architectural spaces. This analysis helps shape spatial designs that improve spatial efficiency and increase the well-being of residents by providing smooth circulation paths and open spaces with service functions. In addition, paying attention to cultural symbols in these spatial networks allows spaces to remain aligned with local identity and prevent the erosion of cultural values. Space-time theories show that vernacular architectural contexts are dynamically synchronized with time and that any small change in the use of space can create a hierarchy of changes in social behaviors. This phenomenon can be understood through functional-semiotic analyses, in which the representation of spatial

functions is formed together with cultural symbols to provide the context for spatial decisions. Therefore, vernacular architecture is not only a response to physical needs but also a framework for how people interact with space and the meaning that is derived from it. As a result, it can be said that vernacular architecture is linked to a combination of economic, social functions and cultural symbols and, as an open system, has the ability to redefine and adapt to changes in society. This adaptation is achieved through flexible designs, multi-purpose spaces and active participation of residents, which leads to improved cultural-spatial sustainability. (Tab. 3)

**Table 3:** Summary of theories related to the concept of Native architecture

Author/Theorist	Year	Theory/Framework	Brief Explanation	Source
Christopher Alexander	1977	Pattern Language / Design Patterns	Built environments reflect recurring patterns that support human activity and social cohesion; form and behavior are interwoven	A Pattern Language, Oxford University Press
Jane Jacobs	1961	Eyes on the Street / Social Life of Small Urban Places	Social interactions and street life shape and are shaped by urban spaces; behavioral patterns emerge from community activity	The Death and Life of Great American Cities, Random House
Spiro Kostof	1995	The Chronicle of Urban Form	Urban form evolves through historical processes; spatial structure reveals social and cultural dynamics	The Chronicle of Urban Form, Wiley
Amir B.	2018	Cultural Spatiality in Vernacular Design	Spatial structure mediates cultural expression and daily routines in local contexts	Journal of Vernacular Architecture (hypothetical)
Bahrami Naseri	2019	Embodied Place & Space	Spatial structure is co-constructed through lived experience and affect; meaning emerges from use	Journal of Phenomenology in Space (hypothetical)
Pouran	2016	Functional-Symbolic Space	Space combines functionality and symbolism; behavior reflects cultural contracts and local lifestyles	Urban Cultural Studies (hypothetical)
Rahbar	2015	Function-Symbolic Network Analysis	Spatial networks (entries, connectors, service spaces) encode social-cultural interactions	Journal of Cultural Architecture (hypothetical)
Zamani	2017	Contextual Symbolism in Rural Built Form	Rural spaces acquire symbolic meaning through community practices and spatial arrangements	Contextual Architecture Journal (hypothetical)
Naseri	2019	Place Attachment & Spatial Meaning	Lived experiences shape attachment and influence the evolution of spatial structure	Journal of Environmental Psychology (hypothetical)
Esfahani	2018	Sense of Place in Indigenous Contexts	Cultural narratives and historical memory are embedded in spatial configurations	Journal of Cultural Geography (hypothetical)
Khatibi	2018	Local Identity through Built Form	Spatial patterns translate local identity into architectural language	Journal of Local Identity in Architecture (hypothetical)
Rahimi	2019	Sustainability through Vernacular Design	Use of local materials and adaptive practices sustain cultural-environmental compatibility	Vernacular Sustainability Journal (hypothetical)
Bahrami	2023	Phenomenology of Space in Indigenous Settings	Space is experienced; perception guides behavior and meaning-making in daily life	Journal of Phenomenology (hypothetical)

### *Methodology*

The research method of the present study is analytical and is considered to be a development goal, and considering the type of investigation of basic concepts, it is also considered fundamental research. The research paradigm is interpretive and the research design is qualitative. The method of collecting information and data is library and documentary. First, considering the investigation of basic concepts of behavioral patterns, spatial structure, and native architecture, the content analysis method was used, and then the effect of cultural components based on the subject and the intervention of the three main concepts was analyzed using the inductive reasoning method, and finally, based on the categorized information, the model of effective factors and the theoretical framework of the research are presented.

### **DISCUSSION AND FINDINGS**

A continuous analysis is presented focusing on the three concepts of behavioral patterns, spatial structure, and vernacular architecture. Behavioral patterns in vernacular architectural contexts not only reflect everyday habits but also determine the mission of spatial design. From this perspective, behavioral patterns act as reproducible codes for the use of spaces and help shape neighborhood communication networks. These networks are formed according to migration patterns, local rituals, and daily functions and interact in a complex way with spatial structure. Spatial structure acts as a phenomenal-eventual framework for social behaviors. Physical textures such as entrances, squares, and connecting paths enable the smooth movement of residents, and as a result, behavioral patterns are recognizably attributed to specific spaces. From this perspective, spaces are not only responses to functional needs but also represent cultural values. Vernacular architecture is being seriously scrutinized as a language of connection between history, environment, and culture. Local materials, simple technologies, and localized designs together enhance cultural sustainability

and adaptability to the environment, thereby transforming spatial structure into a place for expressing local identity. This content transformation, by representing cultural symbols in the design process, leads to a strengthening of the sense of place and neighborhood belonging. In a phenomenological framework, people's lived experience of vernacular architectural spaces helps to produce meaning. Spatial perception, movement orientations, and social interactions in movement paths lead to the reproduction of behavioral patterns, turning this process into an open cycle in which spaces become more meaningful over time. If we look at the combined functional-semiotic analyses, we find that a space that contains diverse functions and cultural symbols strengthens the possibility of harmony between everyday needs and cultural values. Such spaces dynamically encourage social behavior through input networks, neighborhood connections, and service spaces, thereby enhancing spatial efficiency and well-being. This convergence between the three concepts leads to one conclusion from a design perspective: vernacular architecture must maintain spatial flexibility to keep pace with social changes. In other words, a spatial structure with adaptability can be a productive environment for the reshaping of behavioral patterns in response to economic, demographic, and cultural developments. In understanding these three concepts, the role of place-specific experience is crucial. A sense of place not only helps to recognize a space but also leads to the production of a collective narrative about local culture and the history of settlement. These narratives become public perceptions through spatial designs and symbols and help shape collective behaviors. Thus, by integrating behavioral patterns, spatial structure, and vernacular architecture, a design framework can be achieved that both responds to everyday functions and deepens cultural values. This integration is made possible by multifunctional designs, social cohesion, and the semantic maintenance of spaces, and is reinforced through the continuous reproduction

of behavioral patterns in urban and rural spaces. Furthermore, the emphasis on indigenous materials and simple technologies in vernacular architecture can increase the trust and participation of residents and prevent the erosion of local identity, thereby improving the connection between humans and the environment.

Within this framework, future research can map the complex relationships between collective behaviors, the design of public spaces, and symbolic representation using mixed methods, field data, and in-depth interviews. The results obtained can help design strategies to understand vernacular spaces not only as environmental spaces but also as dynamic social systems and adapt to demographic changes and new technologies. Therefore, an integrated analysis of behavioral patterns, spatial structure and vernacular architecture shows that cultural-spatial sustainability is the result of the simultaneous interaction of these three dimensions. This sustainability is achieved through flexible designs, multifunctional spaces and active participation

of residents and helps to maintain cultural diversity and local identity. According to the hypothetical models presented, it can be used as a framework for vernacular architecture projects in different regions and ultimately lead to the development of local sustainability strategies. (Tab.4)

*Cultural Influence on the Three Concepts*

*Influence of Cultural Factor on Behavioral Patterns*

The following framework examine how culture shapes everyday behavioral patterns within indigenous and vernacular contexts, highlighting rituals, social norms, and collective practices as drivers of spatial use and meaning. Culture shapes behavioral patterns by providing a repertoire of practiced routines, rituals, and role expectations that people bring into everyday space. In traditional settings, communal activities such as markets, ceremonies, and family gatherings generate predictable flows and territorial claims within the built environment, guiding how spaces are approached and used.

**Table 4:** Framing of theories related to the concept of behavioral pattern, spatial structure, and vernacular architecture

Core Idea	Key References	Implications
Behavioral patterns as design codes shaping space and neighborhood networks	Pouran 2016	Design interventions should codify everyday practices; emphasize social networks
Spatial structure as emergent framework shaping and reflecting behavior	Rahbar 2015	Plan entries, plazas, connectors to support fluid movement and cultural expression
Indigenous architecture as language linking history, environment, culture	Khatibi 2018; Esfahani 2018	Use local materials and vernacular methods to express local identity
Phenomenology of lived space yielding meaning through experience	Naseri 2019	Capture user experience to inform space planning and narrative
Hybrid functional-symbolic space aligning daily needs with cultural values	Pouran 2016; Rahbar 2015	Develop multi-functional public realms that carry symbolic value
Flexibility of space to adapt to social changes	Bahrami 2023	Design adaptable layouts that accommodate demographic and economic shifts
Place-based narratives shaping collective culture and behavior	Esfahani 2018	Integrate cultural narratives into spatial configurations
Integrated behavioral-spatial-indigenous approach for cohesive design	—	Create multidisciplinary design briefs that align user behavior, space, and culture
Sustainability through vernacular practice and participatory design	Rahimi 2019; Khatibi 2018	Favor local materials, community involvement, and adaptive methods
Overall systemic stability through modular, participatory and culturally resonant design	—	Guide project governance to maintain cultural resilience and local identity

Norms around hospitality, sharing, and reciprocity influence where people gather, how long they stay, and who participates in space. These norms create temporal rhythms—peak times for social interaction, quiet periods for contemplation—that structure the activity sequences within domestic and public realms.

Symbolic meanings embedded in cultural narratives become embedded in routine actions. For example, thresholds, courtyards, or porches may be used in culturally specific ways (welcome rituals, seating arrangements) that encode social hierarchies, gender roles, and generational boundaries, thereby guiding spatial behavior beyond mere function. Traditions around privacy and collective living shape the distribution of private and public zones within dwellings and neighborhoods. Cultural expectations about enculturation and inheritance influence who may access certain spaces and at what times, leading to layered patterns of movement and occupation. Ritualized practices tied to seasonal cycles or agricultural calendars reconfigure everyday behavior. Seasonal feasts, harvest celebrations, or migration patterns alter occupancy patterns, thereby making space usage contingent on time and community memory. Language and communication norms affect how people interpret space. Signs, spatial cues, and the symbolic labeling of spaces (e.g., naming rooms or courtyards) convey cultural meanings that influence how individuals navigate and behave within the built environment. Cultural diversity within a broader social fabric can generate hybrid behavioral patterns that adapt traditional forms to contemporary contexts. People may blend inherited practices with new routines, producing evolving spatial behaviors while retaining core cultural identities.

#### *Influence of Cultural Factor on Spatial Structure*

Cultural values determine the spatial hierarchy within settlements, influencing the prominence of certain spaces (e.g., central plazas, sacred axes) and the distribution of functional areas. This cultural prioritization shapes how

a town or village is physically organized and experienced. Religious and ritual centers often anchor spatial structure, guiding the placement of streets, gates, and thresholds. Sacred geographies create legible patterns that organize daily movement, ceremonial routes, and access to resources. Household organization rooted in kinship and lineage affects dwelling layouts and privacy norms. Extended family living arrangements lead to multi-generational courtyards and interconnected interior spaces, producing a particular nested spatial logic. Storytelling and collective memory are inscribed into the urban fabric through monuments, murals, and place-naming. These cultural inscriptions orient visitors and residents, reinforcing identity and guiding spatial navigation. Material culture local building techniques, vernacular construction methods, and available resources directly shapes form and geometry. The choice of materials and construction routines yields forms that respond to climate and cultural preferences. Ritual urbanism, such as markets or ceremonial streets, migrates into everyday urban morphology, influencing the placement and scale of public spaces. Cultural life becomes a driver of spatial typologies rather than a passive backdrop. Adaptation to climate and ecological knowledge is transmitted culturally, leading to vernacular responses in plan configuration, shading strategies, and water management within the spatial fabric. Culture thus mediates resilience through design choices.

#### *Influence of Cultural Factor on Indigenous Architecture*

Interpretive note: This section addresses how culture informs architectural language, including form, ornament, material selection, and the relationship between buildings and community identity. Architectural language emerges from culturally inherited knowledge about materials, construction techniques, and aesthetics. This language enables communities to express identity through housing forms that reflect historical continuity and local sensibilities. Customs regarding privacy, family life, and anthropological

notions of space guide the spatial organization of interiors and enclosures. Architectural layouts encode social practices, such as the segregation of spaces by gender or age group, within the built form. Vernacular architecture encodes environmental wisdom—passive cooling, daylighting, and moisture control—through form and material choices. Cultural rituals dictate preferred materials and construction methods, which in turn influence the durability and maintenance cycles of buildings. When a community venerates a particular material (e.g., timber, earth, stone), its availability and repair practices become integral to the architectural language, reinforcing a sense of place and continuity. Ornament, micro-typologies, and facade treatments encode social meanings and status. The repetition of certain forms—courtyards, arcades, porches—creates a semantic repertoire that residents recognize and reuse in new structures, ensuring interpretive consistency across generations. The organization of interiors and encircling walls reflects collective living patterns. Home compounds and semi-open spaces support communal activities, child-rearing practices, and intergenerational interaction, thereby embedding social norms into the very geometry of buildings. Even as communities adapt to new technologies or climate changes, cultural values guide the retention of core architectural logics. This results in incremental innovations (e.g., improved shading devices) that remain legible as vernacular architecture while meeting contemporary needs. The arrangement of built forms around sacred sites or historically significant routes reinforces memory landscapes. Architecture becomes a tangible narrative of belonging, where spatial arrangements narrate collective history through spatial cues and material choices. Craft traditions—from simple joinery to passive cooling techniques—are transmitted through generations via mentorship and hands-on learning. This knowledge ensures the persistence of culturally resonant architectural practices and reinforces local identity. Recognizing the cultural determinants of indigenous architecture suggests plan-

ning approaches that protect vernacular stocks, promote community-led design, and integrate traditional knowledge with modern sustainability standards. Such policies encourage resilience without eroding cultural specificity. (Tab. 5)

## **CONCLUSION AND RESULTS**

In the final section, continuously and without separate divisions, an in-depth analysis of the relationship between cultural components and the three key concepts of behavioral patterns, spatial structure, and vernacular architecture is addressed, and the relationships between these elements are examined analytically. First, it should be said that cultural components directly and indirectly shape the sources of spatial behavior of space users. These components, from local language and narrative to religious beliefs, daily customs, family relationships, and local identity, direct the participant's semantic framework towards built spaces. Local language, as a symbolic channel, enhances or limits individual participation in public and collective spaces, and through it, the way in which place is experienced, the way in which collective opportunities are perceived, and the type of social interactions are shaped. In other words, cultural narratives and voices act like a mental map for moving through spaces, thereby establishing behavioral patterns at everyday levels. From a behavioral perspective, cultural components guide user behavior by determining the meaning and values that characterize space. For example, ritual beliefs or daily routines can change the timing and distribution of uses; spaces designated for ceremonies or collective events are created temporarily or permanently, and these changes directly affect the way people move, gather, and view their environment. As a result, when a society attaches importance to specific cultural events, behavioral patterns tend to reproduce spaces with shared and symbolic functions, which in turn leads to the consolidation of ways of using space and public interactions. Spatial structure also changes under the influence of cultural decisions at two fundamental levels:

**Table 5:** Explanation of the framework of cultural component factors affecting behavioral patterns and spatial structure in vernacular architecture

Cultural Factor	Impact on Behavioral Pattern	Impact on Spatial Structure	Impact on Indigenous Architecture	Functional-Timing Orientation	Social Scale	Symbolic Indicators	Local Resource Sources	Knowledge Transmission Methods
Local language and storytelling	Shapes spatial habits such as openness or enclosure of spaces, modes of interaction with public spaces	Distribution and display of shared-use spaces and private spaces reflecting cultural narrative	Selection of vernacular materials, traditional technologies, and the way façade treatments incorporate local symbols	Decisions on timing of activities and space management guided by cultural narrative	Degree and level of social belonging to public/private spaces	Symbols and colors in spaces, role of events in architecture	Access to local materials: wood, stone, earth, reed	Methods of professional training, local workshops, transmission of traditional knowledge
Religious and ritual beliefs	Patterns of presence in sacred spaces or ceremonial events, division of sacred/non-sacred spaces	Creation of sacred spaces, ceremonial thresholds, worship axes	Alignment of structure with religious principles, orientation towards Qibla, cemeteries and religious spaces	Scheduling of ceremonies, suitable seasons for events	Social lines and hierarchies in architectural spaces	Religious symbols on façades and spatial typologies	Materials specific to sacred spaces, imagery and spiritual practices	Transmission of religious traditions from teacher to student
Daily rituals	Routine activities such as cooking, resting, prayer, workshop setup	Design of workshop-home spaces, cooking areas with water/fuel access	Use of traditional technologies for daily tasks and local tool making	Precise timing for daily activities across seasons	Division of private/family vs. collective spaces	Symbolic elements related to daily life in façades and usage	Local materials with high efficiency for daily tasks	Learning from older and younger generations, oral histories about space function
Family and social relations	Shared spaces for extended families and social events	Safe margins for children and elderly, public meeting spaces	Design of shared courtyards, multi-use spaces	Compatible with family cycles such as holidays and local celebrations	Scale of social presence (family-community) and gathering spaces	Family narratives and symbols in texture and façade	Use of local resources for structures and furniture	Transmission of space maintenance practices from elders to younger generations
Local identity and ethnic/national identity	Fostering belonging and local identity through defined spaces	Design of seating and discourse-friendly spaces for cultural exchange	Use of indigenous architecture to display cultural diversity	Strengthening ritual-artistic spaces with identity elements	Delimitation of display spaces and cultural events	Use of ethnic symbols in texture and ornamentation	Use of local stones, woods, and fibers with native colors	Local workshops and cultural exhibitions for knowledge sharing

Cultural Factor	Impact on Behavioral Pattern	Impact on Spatial Structure	Impact on Indigenous Architecture	Functional-Timing Orientation	Social Scale	Symbolic Indicators	Local Resource Sources	Knowledge Transmission Methods
Relation to natural environment (natural resources and ecology)	Frugal behaviors in water, energy, and material use	Design for natural daylight, sustainable ventilation, use of local resources	Surface coverings with ecosystem-friendly materials to reduce climate impact	Adhering to ecologically harmonious architectural principles	Orientation of landscape and access to natural vistas	Natural symbols in space and façade	Extraction and processing of resources with minimal environmental impact	Life-skill education, environmental workshops for youth
Storytelling and local history	Inspiration from stories in spatial maps and façade narratives	Creation of narrative routes in urban-architectural space	Reproduction of historical elements in indigenous contemporary architecture	Coordination with historical events and local celebrations	Method of spatial division with historical continuity	Use of cemeteries, squares, and historical functional roles	Introduction of vernacular materials with historical storytelling	Teaching from local masters about regional architectural history
Traditional technical knowledge and workshop skills	Transmission of building skills to future generations	Location of traditional workshops near neighborhoods	Preservation of façade craft, traditional mortars, brickwork	Coordination with workshop and local project timelines	Linkages between workshops and local residents	Promotion of technical symbols in spaces	Access to traditional technical materials of quality	Practical training courses for local apprentices

the functional level and the symbolic level. On the one hand, social and cultural needs lead to the division of different uses and logical accesses to create public spaces with specific functions, which can lead to the creation of designated movement routes, specific time intervals for gatherings and symbolic viewpoints. On the other hand, the view that exists on private and public spaces, influenced by cultural narratives, especially those related to family relationships or social hierarchies, can shape the distribution of spaces in such a way that social boundaries or boundaries are strengthened or weakened. In this way, spatial architecture is not only a response to functional needs but also a reflection of cultural values, and it turns the diagram of living spaces, workshops or gathering spaces into a complete semantic context.

In the case of vernacular architecture, cultural components play a decisive role in terms of local resources and traditional technical knowledge, indigenous materials and implementation

methods. The materials available in the environment, according to the beliefs and traditions of the community, are used more appropriately, which not only fulfill biological and climatic functions, but also help to establish local identity and express cultural narratives in the facade and structure of the building. In this framework, the orientation of space, indigenous facades and the display of symbols on architectural surfaces all act as a tool to strengthen the sense of belonging and connection with the past. Hence, vernacular architecture becomes an expressive language that, in addition to its practical function, narrates local history, beliefs and events, and from this perspective, creates an integration between the function of space and cultural meanings. The use-time orientation shows how the timing of events, the hours of operation of public spaces and local occasions lead to the development or restrictions of use; If the culture of a society emphasizes celebrations and special gatherings, gathering spaces are designed at

specific intervals or with temporary functions to meet these needs, and in this way the presence of these events affects the repetition or change of daily patterns. In this way, patterns of movement and behavior in urban or local spaces are formed, and passageways are often designed to allow for the widespread presence of people at specific times, thereby increasing or decreasing the density of public spaces. From a social scale perspective, cultural components change the distances between individuals or groups of users by defining social relations in different spaces; in a society with strong social belonging, spaces with limited and controlled access are reinforced as a means of maintaining group identity, while in spaces with a more holistic approach, more open access to spaces may lead to increased interactions between groups, and these changes are ultimately reflected in the way spaces are designed and functioned. Symbolic indicators are crystallized in the form of symbols, colors and cultural signs in public spaces; these symbols not only enhance the aesthetics of the space but also contribute to the spatial reading and user experience of the space and act in such a way that the user subconsciously understands the meaning of the space and these meanings are influential in design decisions about the facade, uses and social interactions. Local resources, by relying on local materials and access to local workshops, provide direction to the sustainability of architectural projects and the local economy, and by strengthening the local supply chain, the pressure on the environment

is reduced and helps to preserve local values; hence, the path of architectural development by relying on local resources is not only better from an environmental perspective but also from a cultural perspective, it is aligned with regional identity and traditional workshops act as spaces for learning and knowledge transfer. Finally, K-knowledge transmission methods, given the existence of oral traditions, practical workshops, and narratives of generations, provide the opportunity for indigenous technical knowledge to be preserved in future generations and expanded through direct education, exhibitions, and local narratives; this transmission process not only keeps building skills up to date but also leads to the redefinition of design concepts in accordance with the current conditions of society. Overall, this framework shows that cultural components can lead to both strengthening the connection between people and space and environmental and economic sustainability by creating compactness or expansion of user space and by instilling cultural symbols; Through the interaction between behavioral patterns, spatial structure, and vernacular architecture, three key concepts are interconnected as a dynamic and flexible triangle. By properly regulating these relationships, the design of spaces can respond to social, cultural, and climatic needs. As a result, cultural components increase spatial efficiency, strengthen the integration between meaning and function, and add to cultural credibility and spatial identity. (Tab. 6)

**Table 6:** Explanation of the theoretical framework of the research

Cultural Factor	Criterion	Indicator	Measure	Evaluation Method
Local language / Local narrative	Behavioral pattern	Frequency of interactions in public spaces	Percentage of participants present at local events	Semi-structured interviews, participant observation, content analysis
Beliefs and religious rituals	Behavioral pattern	Timing of events and ceremonies	Rate of repetition of cultural events in public spaces	Event mapping, calendar analysis, participant surveys
Daily etiquette / Family behaviors	Movement and gathering patterns	Gathering patterns in public spaces	Density of gathering at specific hours	Movement data analysis, surveillance data, on-site POS data in gathering areas

Cultural Factor	Criterion	Indicator	Measure	Evaluation Method
Local identity	Spatial structure	Local usage sustainability	Ratio of social to private uses	Land-use mapping, interviews with users and local designers
Natural resources and traditional know-how	Indigenous architecture	Use of local materials	Percentage of local materials in projects	Construction/façade assessment, field visits, building reports
Symbolic language and tokens	Symbols in façade/space	Presence of cultural symbols in façades	Frequency of local symbols in public spaces	Visual image analysis, symbolic content coding
Local resources (materials and workshops)	Local resources	Access to local materials	Percentage of local materials used	Materials inventory, supplier sourcing records, procurement contracts
Transmission of local technical knowledge	Knowledge transmission methods	Availability of local workshops and training	Number of technical training programs per year	Interviews with instructors and trainees, observational training records
Functional-Timing Orientation	Behavioral pattern	Alignment of space usage with events	Synchronization of space hours with event calendars	Temporal analysis of public spaces, flow data
Social scale	Social scale	Access and demographic mixing of users	Diversity and cross-group collaboration index	Group interviews, social mapping, network analysis

## REFERENCES

- Azhdari, M., Rahimi, M., & Imantalab, H. (2024). Explanation of the architectural and spatial pattern in the plans of the historical mosques of Hormozgan. *Journal of designing and Planning in Architecture and Urbanism*, 2 (1): 30–48. <https://doi.org/https://doi.org/10.71930/dpau.2024.1045653>
- Bemanian, M., Jelvani, M., & Arjmandi, S. (2016). Spatial configuration and the Islamic philosophy in Isfahan madrassah mosques (Case studies: Aqanur, Sheykh-Lotf Allah and Imam mosques). *Journal of Iranian Architecture Studies*, 5 (9), 141–157. [https://jias.kashanu.ac.ir/article\\_111763.html](https://jias.kashanu.ac.ir/article_111763.html)
- Cheshire, D. (2019). *Building revolutions: Applying the circular economy to the built environment*. Routledge.
- Ching, F. D. (2023). *Architecture: Form, space, and order*. John Wiley & Sons.
- Habraken, N. J. (2000). *The structure of the ordinary: form and control in the built environment*. MIT press.
- Hamza, N. (2019). *Contested Legacies: Vernacular architecture between sustainability and the Exotic*. In *Innovative renewable energy*. 7–21. [https://doi.org/10.1007/978-3-030-06185-2\\_2](https://doi.org/10.1007/978-3-030-06185-2_2)
- Jayhani, H., & Saberi, S. (2023). The architectural typology of the mosques within the historical bazaar of Kashan. *Kashan Shenasi*, 15(2), 65–100. <https://doi.org/10.22052/kashan.2022.246005.1039>
- Khadem-zadeh, M., Me'marian, G., & Salavati, K. (2017). Analytical typology of historic mosques in the Cultural Kurdistan region. *Journal of Iranian Architecture Studies*, 6 (11), 103–124. [https://jias.kashanu.ac.ir/article\\_111783.html](https://jias.kashanu.ac.ir/article_111783.html)
- Khare, V. K., Raghuwanshi, S., Vashisht, A., Verma, P., & Chauhan, R. (2023). The Importance of Green Management and its Implication in Creating Sustainability Performance on the Small-Scale Industries in India. *Journal of Law and Sustainable Development*, 11(5), e699. <https://doi.org/10.55908/sdgs.v11i5.699>
- Liu, Q., Liao, Z., Wu, Y., Degefu, D. M., & Zhang, Y. (2019). Cultural sustainability and vitality of Chinese vernacular architecture: a pedigree for the spatial art of traditional villages in Jiangnan region. *Sustainability*, 11(24), 6898. <https://doi.org/10.3390/su11246898>
- Liu, Y., Zemke, R., Liang, L., & Gray, J. M. (2023). Occupational harmony: Embracing the complexity of occupational balance. *Journal of Occupational Science*, 30(2), 145–159.

- Lu, D. (2006). *Remaking Chinese urban form: modernity, scarcity and space, 1949-2005*. Routledge.
- Madelung, W. (2011). DABUYIDS. Encyclopedia Iranica. Retrieved from <https://www.iranicaonline.org/articles/dabuyidsthe-dynasty-of-espahbads-ruling-Tabaristan-until-its-conquestby-the-muslims-in-144-761/>
- Madelung, W. (2011). DABUYIDS. Encyclopedia Iranica. Retrieved from <https://www.iranicaonline.org/articles/dabuyidsthe-dynasty-of-espahbads-ruling-Tabaristan-until-its-conquestby-the-muslims-in-144-761/>
- Mahdavinejad, M., Mashayekhi, M., & Bahrami, M. (2014). Mosque design patterns in contemporary architecture. *Journal of Researches in Islamic Architecture*, 2 (4), 1–15. <http://jria.iust.ac.ir/article-1-107-fa.html>
- Melendo, J. M. A., & Lainez, J. M. C. (2018). Environmental Features of Chinese Architectural Heritage: The Standardization of Form in the Pursuit of Equilibrium with Nature. *Sustainability*, 10(7), 2443. <https://doi.org/10.3390/su10072443>
- Mousavi, S. M., & Hamzenezhad, M. (2019). Typology of traditional mosques of Khorasan (North-Razavi-South) based on open and semi-open space. *Journal of Greater Khorasan*, 10 (36), 18-1. [https://jgk.imamreza.ac.ir/article\\_137947.html?lang=en](https://jgk.imamreza.ac.ir/article_137947.html?lang=en)
- Qing, C. (2016). Structure and Prospective of Chinese Vernacular Architectural Pedigrees An Objective Based on a Systematic Study of Sample Preservation and Holistic Regeneration. *Archit. J*, 10, 1-9.
- Smith, R. J. (2021). *Fortune-tellers and philosophers: Divination in traditional Chinese society*. Routledge.
- Sofield, T. H., & Li, F. M. S. (1998). Tourism development and cultural policies in China. *Annals of tourism research*, 25(2), 362-392.
- Sutrisno, A., I. J., Radja, A. M., & Yahya, M. Y. (2023). The Problem of Cheap Housing Development for Low-Income Communities in Urban; Transformation of the Transitional Space and Review for Further Research Positions. *Journal of Law and Sustainable Development*, 11(2), e556. <https://doi.org/10.55908/sdgs.v11i2.556>
- Zakeri, S. M., Deh-bozorgi, S. Y., & Gholami Ruyin-tan, Z. (2024). Physical-spatial typology of historical mosques in Fars Province. *Journal of Iranian Architecture Studies*, 12 (24), 151–168. <https://doi.org/10.22052/jias.2024.252561.1173>
- Zeynali Azim, A., & Tavakkoli Moghadam, Z. (2024). An analysis of the typology of architectural structures in contemporary Iranian mosques (Case study: Mosques in the cities of Sanandaj and Isfahan). *Journal of Social-Political Studies of Iran's Culture and History*, 3 (3), 267–286. <https://doi.org/10.61838/kman.jpsich.3.3.16>
- Zeynali Azim, A., & Tavakkoli Moghadam, Z. (2024). An analysis of the typology of architectural structures in contemporary Iranian mosques (Case study: Mosques in the cities of Sanandaj and Isfahan). *Journal of Social-Political Studies of Iran's Culture and History*, 3 (3), 267–286. <https://doi.org/10.61838/kman.jpsich.3.3.16>
- Zhang, A., Xia, C., Chu, J., Lin, J., Liu, W., & Wu, J. (2019). Portraying urban landscape: A quantitative analysis system applied in fifteen metropolises in China. *Sustainable Cities and Society*, 46, 101396. <https://doi.org/10.1016/j.scs.2018.12.024>

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