

A Comparative Study of Iranian Nomadic Housing

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Abstract

The purpose of this paper is to present the typical domestic space and to describe and analyze a particular temporary architecture (nomadic house) in order to perceive the exceptional nomadic culture and the architecture associated with it. The research investigates some of the nomadic tribes of Iran and their living space: including the nomadic home (Black Tent) and, uses those findings to analyze their unique culture. The research is a comparative study of the nomadic housing of Iranian tribes. Rediscovering different architecture of nomadic people who need migration between their summer and winter residences, who need places for their livestock and therefore who need different methods of living helps to understand this particular *modus vivendi*. In this regard, documenting how Iranian tribes can arrange and design their homes seems to be a good method for the preservation of this culture.

Keywords: Architecture, Nomadic Architecture, Nomads of Iran, Domestic Space; Housing, Identity, Cultural Heritage

Introduction

Migration is one of the most prevalent forms of social life, which has continued since the formation of human social life in antiquity. The nomads of Iran are from different tribes living across Iran. During migration, they also take their housing from one region to another. This housing has been adapted to their geographical lifestyle. For this reason, it is possible to argue that nomadic tribes have used the most portable and mobile housing since ancient times.

A wide area of East and Central Asia, the Middle East and North Africa has witnessed many forms of coexistence with migrations, and in particular the way the nomadic tribes lived. Various studies found in publications from the Paul Oliver Vernacular Architecture Library (POVAL) indicate that the geographical, political, and socioeconomic factors have affected the formation and development of the nomadic lifestyle on the Iranian plateau. Among them, the impact of geography is the most important factor of nomadic life and the livestock economy is the most significant. (Oliver, 1997; Salzman, 2002; Potts, 2014)

Housing style in the nomadic tribes is characterized by being able to assemble, rebuild and carry along all necessities of life. Housing is subject to the conditions of culture, livelihoods, economy and technology of that society. It adapts to climate-geographical conditions. Starting a few decades ago, due to political, security, welfare, service, etc., the more permanent settlement of these tribes has been implemented in villages or around cities. Of course, it should be noted that the resettlement projects in some regions of Iran have not yielded any results, and the migration culture is still very active and mobile in some places. (Moeni, 2008)

The tribal residence and the resulting lifestyle, language, music, local cuisine, handicrafts, dances, local clothing, local ritual and wedding celebrations are the most important features of the tribes. The most unique and important aspect of the nomadic life is their homes.

The main aim of the study is to register vernacular structures in Iran. It is important to present a typical domestic space, to describe and analyse the particular temporary architecture/forms of home in order to perceive the exceptional nomadic culture and the architecture associated with it.

Methodology and Literature review:

The research investigates some of the living space of the nomadic tribes of Iran: among others the nomadic home (Black Tent). The findings are used to analyse and preserve their unique culture. The research is a comparative study of Iranian nomadic housing and the domestic space of Iranian tribes. The purpose of the study was based on applied research. It has been analysed analytically and descriptively. The research method was qualitative and based on: documentary studies as well as field studies. Data examination has been done through library studies, authors' observation during onsite visits and documentation of the indigenous habitat patterns of Iranian nomads by the field method, all with reference to study resources.

The theoretical framework was built upon the multi-disciplinary collection of books dealing with vernacular architecture worldwide (The Paul Oliver Vernacular Architecture Library¹ (POVAL)). Paul Oliver is one of the first researchers who worked on the subject and studied a wide range of topics regarding vernacular architecture. Oliver's encyclopedia of vernacular architecture is one of the most important and significant books dealing with the topic. (Oliver, 1997) It includes an introduction to all varieties of vernacular architecture all over the world and a survey arranged by continent followed by region, which also includes Asia. (Oliver, 1997, Vol. 2) Those books are one of the best sources for research, but still very general. In this study the authors try to present discussion regarding Iranian plateau and to focus on this specific region in order to develop a much deeper representation and to introduce the major part of homes in the nomadic life of Iran. The comparative research about Iranian nomads housing is an important topic and is being investigated by other scholars nowadays. (Zarghami, 2016)

The knowledge gained about the vernacular traditions of the world up to the present has created a base and great fundament for field research. However, due to the fact that the written resources regarding the area of nomad architecture, especially in Iran, are very limited, most of the data in this paper are the result of architectural findings and the authors' interviews with Iranian nomads in different regions of the country. Data include findings based on surveys and field trips in Iran and taking into consideration how discovering tradition and culture merge with what is written into the "nomadic city" landscape. For surveying this particular example of domestic architecture – such as the Black Tent, a number of site visits were conducted that included interviews with a community of the tribe and inhabitants of the tents. Architecture examples were explored and recognized by the authors themselves. One of the most attractive parts of the study was travelling together with the nomads in order to better understand and analyse the nomadic settlements from the point of view of architecture.

Nomadic life in Iran:

1. Migration

Iranian nomads are the people who migrate from one place to another with their tribe, family and all of their belongings. Migration is a way of life for nomads in which cattle is the basis of their economic life. Staying in a temporary location and living on a trail are two outstanding characteristics of nomadic life. During their seasonal migrations, nomads move

¹ This collection provides a complementary set of research works done by architects, geographers, architectural and art historians, planners, folklorists, archaeologists, conservationists and anthropologists that have been collected over a period of 50 years.

with their animals, from winter resort locations to summer grazing lands. Then they move back to their winter resort locations again when it gets cold.

Migration started many centuries ago. Research on the nomadic way of life unveiled that this phenomenon exists mostly in semi-dry and arid territories, i.e. in areas where there is not any suitable piece of land for farming, like slopes or stony grounds. (Moshiri, 1983)

The different climate in Iran has led to a variety of architectures in different places, and this climate difference also affects the structure of Iranian nomadic homes. Coexistence and interaction with the environment and continuous efforts to adapt to the climatic and geographic conditions of each region led to the formation of unique methods of survival, unique migration systems and exploitation of environmental resources. It has been estimated that between 150-200 million people in the world lead a life centred on shepherding and cattle breeding. Iran with an average annual rainfall of less than 250 mm (about one-third of the world's rain) is considered to be part of arid and semi-arid regions. Studies show that sustainable land management and exploitation of such areas are cattle-based. Therefore, migrating from cold to tropical regions and vice versa as a model for adapting to climate change and exploitation of natural resources is one of the main causes of the development of nomadic life that has lasted for several thousand years in Iran. (Akbari, A. 2004)

2. Tribal population of the country

The number of major tribal groups in the country is 17, namely: Bakhtiari, Qashqai, Ellson (Shahsavan), Mamivand, Boyer Ahmad Sofla, Khamseh, Boyer Ahmad Oliya, Bahmayi, Ghara-dagh Arasbaran, Mamassani, Kurdish, Tayebi, Jalali, JabalBarezi, Zalki, Baloch and Afshar. In the last few decades, the survey of the status of the nomadic population of Iran indicates a decrease in the proportion of nomadic population compared to the total population of the country. The Nomads Affairs Organization of Iran² is arguing this issue.

Table1: Distribution of nomads in various geographical regions of Iran, Nomadic Organization of Iran

| Area | Province | Tribes |
|----------------|-------------------------|--|
| West and South | Kurdistan | Goran tribes, Golbaghi, Oramanat, Marivan, Sanandaj, Baneh, Saghez tribes (Kurdish nomads) |
| | Kermanshah | Kurd Jaaf, Kalhor, Qalkhani, Sangari, Goran and Karand, Salas Babajani, Zanganeh, Zhooleh (Kurdish nomads) |
| | Ilam | Kurds, Malekshahi, Arkovazi, Shohan, Khozel, Rosgeh |
| | Lorestan, Ilam | Biranwand, Hassanwand, Papi, Derrickwand, Segund, Zelaki, Maywand |
| | ChaharmahalvaBakhtiari | Bakhtiari |
| | Kohgiluyeh&BoirAhmammad | Boyerahmad (Oliya, Sofla, Tropical), Bahmayi, Tayyibi, DoshmanZiari, Chram and Baboei (Bavi), Mamasani |
| | Fars | - Qashqai (tribes) |

² 'Nomads Affairs Organization of Iran is a governmental organization, which is responsible for giving services to the Iranian itinerant mountaineers. With the aim of organizing the migration and voluntary resettlement of nomads, it organizes the necessary policies and plans in coordination with the upstream institutions (government, parliament, Nomads supreme council, etc. Source: <http://www.ashayer.ir/index.aspx?siteid=1&pageid=162>

| | | |
|----------------------------|--|---|
| | | - Khamsch (tribes) includes Arab tribes, Baseri, Baharloo, Inanlou and Nafar |
| | | - Sorkhi tribe, Mamasani tribe (nomads Lor and Lak) |
| East and South East | Kerman, Sistan and Baluchestan and Hormozgan | Afshar, JabalBarezi, Bechaghchi, Baluch, Aineh, Soleimani, Qara'i, Asiabor, Khajavi, Borkhori, Poshtkohi, Jazi, Javidan, Raeini, Maboki, Shekari, Shenbou, Ghorba, Kamrani, Kamchi, KomachiSanjari, Kouhshahi, Narmi, Momni, Mohini, LakBakhtiari |
| North West | East Azarbaijan, West, Ardebil and Guilan | Shahsavani, Arasbaran (GharehPepagh), Khalkhal, Jalali, Milan Khoi, Milan Maku, Shakak, Mamash, Zarza, Pennishin, Piran, Sadat |
| North East | Khorasan, Semnan, Mazandaran and Golestan | Sangsar, Alikai, Ehsani, Arabs, Afshar (Torkish tribe), Zaferanloo (Kurdish), Shadlou, Ghachorloo, Teymouri, Hazare, Balouch and Sistani, Turkmen |
| Central | Zanjan | The tribes of LorChegini and Ghiasvand, the tribe of Turk Shahsavani Baghdadi and the tribe of the Kalhor |
| | Hamedan | The tribes of Torkashvand, YarmTaghlou, Jimar, Shahsavani |
| | Tehran, Qom, Central | Kale Kouhi, Kalhor, Sangsar, Hadavand, Shahsavani Baghdadi, Moghan |

Source: <http://www.ashayer.ir/index.aspx?siteid=1&pageid=162>

The above table (Table 1) shows that despite the fact that this process is taking place in Iran, there is still a wide range of nomad populations present in the country. In all provinces in different parts of Iran, we can find some tribes in different cultures. Nowadays however, some of these tribes have been resettled in cities or countryside villages.

Nomadic housing in Iran:

'All houses are dwellings; but all dwellings are not houses. To dwell is to make one's adobe: to live in, or at, or on, or about a place. For some this implies a permanent structure, for others a temporary accommodation, for still others it is where they live, even if there is little evidence of building.' (Oliver, 2007, p.15)

In the past two centuries, comparative studies and typology have been introduced in various sciences from biology to architecture. This content-based discussion is important in the field of basic theoretical discussions about architecture that include topics such as space, shape and form.

It can be very effective to identify types in all activities, which are incarnate, repetitive and rooted in human works. In this regard, the intention is to study the valuable life of Iranian tribes in the history of Iran. The history of these tribes also makes their housing worthier of attention.

The home has great meaning for humans – it means security, family, a calm area, settlement and fulfillment of all basic needs. What can this meaning be for nomadic people who have a different life? Nomadic people depend on migration between their summer and winter residential places to find ranches needed for their livestock. Therefore, they need different methods of living. In this regard, the question arises: how can they arrange and design their home to include all of its possibility and the necessary equipment for normal living?

This research attempts to introduce the interesting case of nomadic home life in different parts of Iran that involve methods of living practiced by inhabitants, and what is more, examples of their beautiful and unique culture.

There is a wide range of types of nomad houses in Iran depending on the region. Examples shown below represent this diversity and illustrate the reaches of nomadic architecture and the cultural heritage of nomadic people. (Rouhi, 2016)

1. Nomadic housing in the Western and Southern parts of Iran

The Black Tent and typical nomad housing can be found in the Zagros Mountains (Fig.1a, Fig.1b, Fig.1c). The Zagros Mountains are located in the western and southern part of Iran in the provinces of Ilam, Kermanshah, Kurdistan of Kohkiluyeh and Boyerahmad, Chaharmahal and Bakhtiari, Esfahan and Fars.



Fig. 1a, 1b: Black Tent of Ilam province;
Fig. 1c: Black Tent of Chaharmahal and Bakhtiari province
 Source: a) drawing by Hassas N.; b) photo by Mansourimoghadam M.;
 c) www.isna.ir/news/95101207181

2. Nomadic housing in the Eastern and Southeast parts of Iran

Tents can also be found in the eastern and southeastern parts of the country, which includes parts of Khorasan, Sistan and Baluchestan, and Kerman and Hormozgan provinces (Fig.2a, Fig.2b, Fig.2c). Here special weather conditions prevail. In this area, climate diversity is severe, and in general, this region has low water levels and low rainfall with hot weather and a great difference in temperature overnight. Kapar is one such hut made in the southern part of Kerman province. Usually, huts in Kerman have a circular shape and in the Sistan and Baluchestan provinces the hut (kabar) has an ellipsoidal shape with a lower ceiling.



Fig. 2a: Kapar of Kerman province,
Fig. 2b: Kapar of Sistan and Baluchestan province,
Fig. 2c: Kapar of Khorasan province
 Source: a) www.halil.ir; b) <http://zahedan.irib.ir/>; c) <https://www.borna.news>

3. Nomadic housing in the Northwest part of Iran

The northwestern part of Iran includes the provinces of East and West Azerbaijan, Ardebil and part of Guilan. Due to its mountainous terrain and its climate diversity, the examples of this nomadic housing differ from the others (Fig.3a, Fig.3b, Fig.3c).



a)

b)

c)

Fig. 3a: Black Tent of West Azerbaijan province,

Fig. 3b: Alachigh of the Shahsawan tribe **Fig. 3c:** Ardebil province

Source: a) drawing by Hassas N.; b) <http://econews.com/fa/content/1237962>; c) Hassas N.

4. Nomadic housing in the Northeast part of Iran

The northeastern region of Iran has a wide range of climates due to its vast expanses. In this region there are numerous examples of nomadic living space to be found (Fig.4a, Fig.4b, Fig.4c).



a)

b)

c)

Fig. 4a: Black Tent of Khorasan, **Fig. 4b:** Kormanj tribe, **Fig. 4c:** Torkman home (Oy),

Source: a) <http://khorasanshomali.khorasannews.com/Newspaper/Page/19229/3/24487/0>;

b) <http://valat.ir/news>; c) <http://yosefkhoje.blogfa.com/>

5. Nomadic housing in the centre of Iran

The central region of Iran includes the provinces of Zanjan, Hamedan, Semnan, Markazi, Tehran and part of Mazandaran, whose main feature is proximity to the capital. This feature has made the nomads of these areas more distinct than other tribes in terms of social, economic and psychological characteristics.



a)

b)

Fig. 5a 5b: Sangsar tribe
Source: photos by Hassas N.

There is a wide range of types of nomad houses in Iran depending on the region. The series of examples depending on the region shown above represent this diversity and illustrate the reaches of nomadic architecture and the cultural heritage of nomadic people. According to the findings of this section, in each province and in each of Iran's climates, we can see a variety of vernacular tribal architecture. Even in some provinces with different climatological typologies, we can observe a common type of architecture (such as the very representative Black Tent), which indicates that some of these species are usable in different climates.

Types of nomadic housing structure

The hidden biological pattern in architecture is the same esoteric information found in the architectural sphere. The social relations of people are recognizable in the context of the architecture. The form and geometry of nomadic housing varies according to its type. Nomads in Iran have different housing styles due to different geography, culture, society and typology. All of the structures are propped with natural material taken from their environment, which can show the historical vernacular architecture. There is a wide range of types of tents built by nomadic people in Iran (Table 2).

Table 2: Characteristics of nomad house in different geographical areas of Iran

| Type of house | Climate | Compatibility features | Materials | Form and geometry |
|-------------------|--------------------------|---|---------------------------------|----------------------|
| Black Tent | Moderate and mountainous | Easy to carry, can change form in different seasons | Wood, straw, goat hair | Rectangle |
| Kapar | Warm and dry | Coordination with environmental conditions | Wood, straw, goat or camel hair | Elliptic, Circle |
| Alachigh | Cold and mountainous | Coordination with environmental conditions | Wood, straw, goat or camel hair | Circle |
| Mazif | Warm and dry | Coordination with environmental conditions | Wood, straw, goat or camel hair | Rectangle |

Source: Hassas N.

1. Black Tent

The most representative housing of nomads in Iran is the Black Tent. The Black Tents are made of natural materials and comply with prevailing environmental conditions. Their cover is woven and ropes and strings are made with the long, black hair of Persian goats. Among the tribes of Iran, the Black Tent is built in different sizes and shapes. It has a particular structure and is built upon a very specific plan.

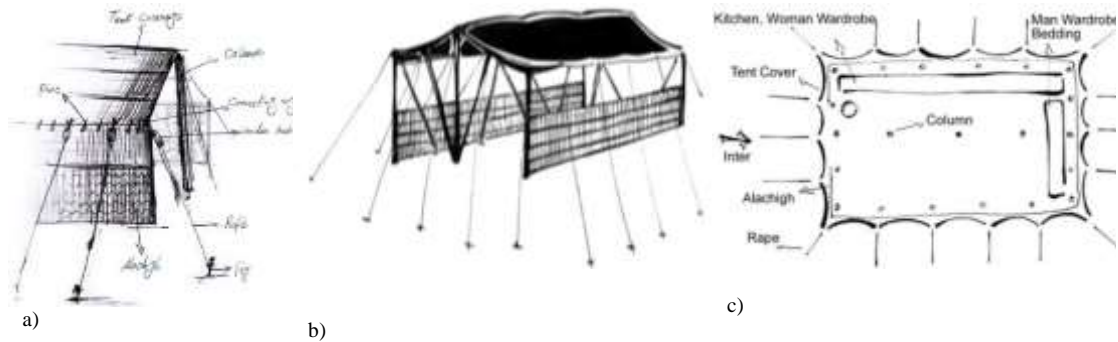


Fig. 6a: Structure of the Black Tent,
Fig. 6b, 6c: Winter Black Tent perspective and plan of the Qashqai Tribe, Fars Province.
 Source: drawings by Hassas.N

Based on detailed investigation (Fig.6) of the example of Black Tent from the Fars province, an attempt has been made to explain the main issues of the tents structure and stability during many centuries of nomadic domestic architecture. All the crucial parts and elements of the tent have been presented (Fig 6a). In the next drawing (Fig. 6b), the structure of the tent is shown. The tent cover consists of two parts: the ceiling and wall. Both parts are made of goat hair and the method of preparation and texture are the same. The tent also has a particular interior plan and decoration, which is very much connected with the culture of the tribes. The left side of the tent is intended for women and the kitchen, and the right side is dedicated for men and their belongings. (Fig. 6c) According to the economic situation of families, the roof of a tent may be a rectangle 6 to 12 meters long and 3 to 5 meters wide, which makes an area between 18 and 60 square meters. Weaving such a large surface creates a lot of problems: a big area is needed for a weaving workshop, the heavy cover is difficult to move and it is difficult to keep the quality of the fabric at the same, high quality level. If some parts are not woven tightly, the tent will soon leak. The covers consist of narrow strips, usually 60 to 80 cm wide. This allows for changing the damaged part of the strip without removing the whole tent cover. It is enough to exchange a strip of fabric by sewing the new part in with goat hair yarn. (Hassas, 2012)



Fig. 7a, 7b, 7c : Nomadic women weaving a strip of Black Tent in Ilam Province
 Source: photos by Saeed Soroush

Beside the Black Tent in Iran, there are other examples of housing used by nomadic people like the Alachigh, Kapar or Mazif. Different characteristics are found in different geographical areas of Iran.

2. Alachigh

The Alachigh is usually made in cold and mountainous regions, and the plan is circular and hemispherical. The Alachigh is composed of two parts. The upper part of the roof is woven from goat hair. The other part is the sidewall, which is called chih or chit, and it is made up of a combination of goat hair and thin branches.



Fig. 8a, 8b, 8c.:Structure of the Alachigh, Shabsawan Tribe, Azarbayjan Province

Source: <https://www.ir-co.com/>

The Alachigh structure consists of a skeleton of wood, which is covered with a few pieces of felt. If the felt is removed, the Alachigh looks like a wooden cage. About 60 to 70 pieces of arched wood make up the Alachigh skeleton.

3. Kapar

Kapar is a kind of structure found in the southeast and south of Iran. The materials used to make these dwellings are wood, straw, goat wool or camel hair, branches and leaves. The curved branches are banged into the ground and then formed to build a wall, then branches of the palm tree are used horizontally. To cover the roofing in the winter, they use woolen felt.



Fig. 9a, 9b, 9c: Kapar Tent; Structure of the Kapar; Interior of the Kapar

Source: a)<https://www.seratnews.com/fa/news/31625/>; b)<https://fararu.com/fa/news/237306/>;

c)<http://www.rajanews.com/news/102371/>;

4. Mazif

Mazif has a strong, structurally complex architecture. It is used among the Khuzestan Arab tribesmen. It is built only by using straw and borax. This structure is placed on a hole that is dug manually. After digging the holes and preparing the cane branches, pillars are fixed in the pit with a mortar. There must be an odd number of pillars. Typically, from 7 to 17 pillars are used. (Abdiifar, 2016)



Fig. 10a, 10b, 10c: Construction processes of Mazif

Source: <http://www.mirasmah.ir/98>

The above-mentioned examples present significant information about the typology of nomadic architecture. Due to the limited research on this topic, this is only an introduction and starting point for further discussion. Nevertheless, the deep analysis of styles and types, and especially the clear understanding of the Black Tent example enable to derive meaningful conclusions.

Conclusion

The results of the analysis of this hypothesis prove that the architecture of the nomadic tribes of Iran is not only compatible with their livelihood, but also with specific climatic conditions. The reason for the both-sidedness of this analysis is that being a nomad requires a different kind of lifestyle based on architecture that can respond to this special type of life, and on the other hand, the peaceful adaptation to the environment is another reason for its survival over thousands of years.

Comparing different types of vernacular architecture, including the nomadic architecture, makes it possible to identify similarities, differences, distinctions and the causes for their existence. Historical and cultural life, like that of the Iranian tribal history, is worth studying and modeling. The creation of the most portable and mobile house is a result of housing compatibility with the geography and lifestyle. The main points in common for different types of nomadic housing are high compatibility with the environment, ease of movement and execution, speed of construction, use of indigenous technology, use of natural forms, vernacular materials and the principles of sustainability inherent in this kind of housing throughout history. In the nomadic settlement plan, it is evident that the housing has a central core like the inner layer of a house.

In the area surrounding this main layer, the open space of the plain or the slopes of the mountains or the desert are located like a courtyard with invisible dimensions for outer activities. Considering the importance of the nomadic housing survey, several significant results have been obtained.

- Due to the cultural and physical coordination of the house, the layout and form of the house are flexible and allow for more compatibility with the environment. Studying the similarities of nomadic houses shows that the Kapor, Alachigh and Mazif are more covered and isolable than the Black Tent. This can be attributed to critical climatic conditions. The Kapor and Mazif are used in the south of Iran where weather conditions are warmer especially in summer, with cold nights in winter. Of course, the Alachigh is used in the northwest of Iran where weather conditions are cold. Therefore, these kinds of structures are more covered to be safe in both warm and cold weather conditions. The Black Tent can be used in moderate climates and for weather in mountainous regions.

Due to the concept of the interior space of a nomadic house, without any internal partition or wall, different functions are possible. Therefore, by combining the various functions inside of the home, it can become multi-functional. The historical life experience of the nomad proves this.

Unwritten social and cultural contracts can be effective in house types that support simplicity and integrity. This research has attempted to show different nomadic houses from different cultures, all observing the meaning of home. For the nomadic lifestyle, it is necessary to have a simple and complete house. With repetition and the continuity of using natural materials, their home has become their culture.

Rediscovering the different architecture of nomadic people, who depend on migration between their summer and winter residences, places for their livestock and therefore who need different methods of living, will help us to understand this particular modus vivendi. In this regard, documenting how Iranian tribes can arrange and design their home to include all of its possibility and equipment for normal living seems to be the perfect method for the preservation of this unusual culture. As Parera argues: '*Despite the increasing challenges to the traditional nomadic life in Iran, a minority still refuses to give up life on the move and nomads of Iran cling to a disappearing way of life.*' (Parera, 2015) However, it is important to document the issue of nomadic life that threatens to be left behind and which, if not preserved as a cultural heritage, will be forgotten and destined to disappear. Identifying the concept of nomadic life is a crucial point in order to maintain this particular heritage and culture.

References:

- Akbari, A. (2004). Proceedings of the National Conference: Abandonment of the nomadic society of Iran, Vol. 1. 8.
- Abdiifar, N. (2016). 'Based on the documentation of the Mazif - related to the third millennium BC, in the Mesopotamian Land belonging to the Sumerian people.'
<http://shaparakdaily.ir/shaparak/News.aspx?NID=85021> - accessed on 25 August 2018.
- Hassas, N. (2012). The Conservation of black tent in Fars province, case study: Qashqai tribe. (MA thesis. Faculty of Architecture of Apadana University), Shiraz, Iran.
- Moeni, M. (2008). 'Study of the process of formation of nomadic housing.' Beautiful Art Journal, No. 33. 47-50.
- Moshiri, R. (1983). Geography Nomadic (principles and Iran). Samt Publication, 73-74. Nomads Affairs Organization of Iran:
<http://www.ashayer.ir/index.aspx?siteid=1&pag eid=162> - accessed on 25 August 2018.
- Oliver, P. (2007). Dwellings: The Vernacular House Worldwide. Phaidon Press.
- Oliver, P. (1997). Encyclopedia of Vernacular Architecture of the World. Cambridge; New York, NY, USA: Cambridge University Press.
- Parera T. (2015). Nomads of Iran Cling to a Disappearing Way of Life, MEE:
<https://www.middleeasteye.net/in-depth/features/life-nomads-iran-34671409> - accessed on 25 August 2018.
- Potts D. T. (2014). Nomadism in Iran: From Antiquity to the Modern Era. New York: Oxford University Press.
- Rouhi, T. (2016). Black Tent; Nomadic Architecture. Iranian People's Culture Quarterly. No, 45.46.
- Salzman P. C. (2002). 'Pastoral Nomads: Some General Observations Based on Research in Iran.'
Journal of Anthropological Research. Vol. 58, No. 2. The University of Chicago Press 245-264.
- Zarghami E. (2016). 'A Comparative Study On Iranian Nomads Housing' Housing And Rural Environment, Volume 35. Number 155. 19-36:<http://jhre.ir/article-1-1370-en.pdf>, - accessed on 25 August 2018