



Original Article

## Investigating Architectural Index Elements in The Local Mosques and the Jame Mosques (Case of study: Historical Mosques of Zanjan)

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Abstract

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The purpose of this research is to investigate the architecture of mosques and explain the architectural index elements in local and Jame Mosques. "Mosque" from the root of prostration is an allusion to a place of worship, the building of which should be able to induce a sense of worship in its audience. The forms and roles in the building are the shapes that are influenced by the content and affect the human sensory perception and are directly related to people's beliefs and religion. Therefore, the architecture of the mosque represents the depth of the perceptions of the intellectuals and ordinary people about the essence of the mentality and faith of the Muslim society, and the main issue in its design is the suitability of the architecture of the mosques with their dignity and functional content. When Islam emerged, there was no idea of the principles of building a mosque and the only pattern was the Prophet's house-a simple building with wooden pillars. Iranian architectural styles have changed and evolved during different periods of history, in accordance with governments, religions and beliefs, and with the arrival of Islam, the Iranian architectural style underwent many changes. In general, several prominent elements are used in the architecture of the mosque: the courtyard, the porch, the shabistan, the mihrab, the dome and the minaret; however, some mosques lack a courtyard or minaret and some have several mihrabs. So, in this research, the study of the historical local and Jame Mosques of Zanjan, by examining their architectural features, the architectural index elements which are unknown aspects of this research, as well as to determine the factors influencing the design of these mosques that take the ambiguous dimension of the problem, with library studies and the descriptive/analytical method of existing documents and research.

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## Introduction

Religious places have special sanctity and respect due to their formation based on the beliefs of different communities. These buildings, which include mosques, churches, synagogues, fire temples, temples and other places that are the hallmark of any religion, have undergone changes in the history of the beginning to date (Taheri, 2015: 6). The mosque is considered as the most important and prominent Islamic building and the key to understanding Islamic architecture. The Muslim community of the Middle Ages was a society based on religion and godliness, which the mosque is its natural manifestation. In Islam, the mosque is an important religious monument, the most important function of which is collective worship. The mosques of the early centuries of Islam were the simplest and most common form possible, namely consisting of a courtyard, which formed a covered hall through enclosed spaces and arched arches. The architecture of mosques is based on human equality, iconoclasm, attention to the inner and the spiritual, and most importantly, with a religious purpose (Hillenbrand, 1997: 447-449). The mosque is a place of worship from the root of prostration, which means prostration, any place or building where God is worshipped is a place of prayer, and its purpose is to accommodate a large congregation that can pray in groups towards Mecca (Upham Pope & Ackerman, 2008: 1125). Therefore, the forms and roles in the building are the shapes that are influenced by the content and affect the human sensory perception and are directly related to people's beliefs and religion, and the architecture of the mosque represents the depth of the perceptions of the intellectuals and ordinary people about the essence of the mentality and faith of the Muslim society, and the main issue in its design is the suitability of the architecture of the mosques with their dignity and functional content. The purpose of this research is to investigate the architecture of mosques and explain the architectural index elements in local and jame mosques.

## Research method

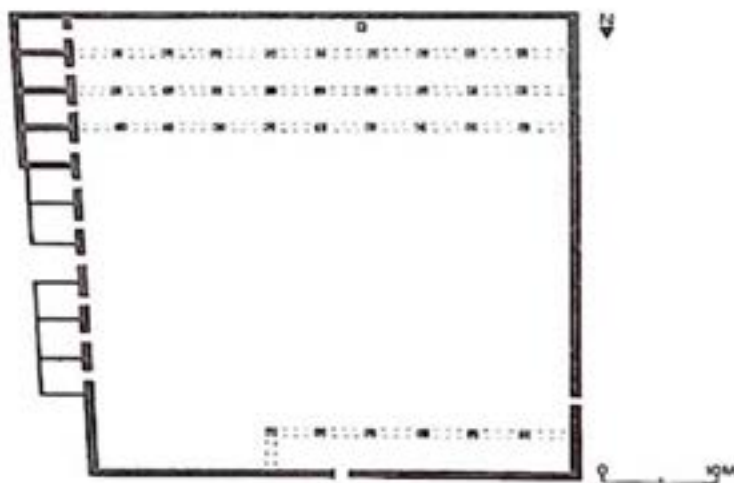
In general, two factors are involved in the formation of an architectural work, culture and Environment, which are used in the design and implementation of any building. The purpose of this research is to identify architectural index elements of local and Jame Mosques, which used a documentation method. By referring to library resources, reviewing books, articles and sites related to the topic, an analysis of the mosque and its background, the types of mosques based on its functions and location, architectural styles and index elements were analyzed. Finally, with library studies and documents of the Cultural heritage Organization, 16 historical mosques in Zanjan province were compared, and their index elements (courtyard, porch, shabistan, mihrab, dome and minaret) were examined. The "descriptive-analytical" method has been used to conclude the data from the research. The results of the research were analyzed by descriptive (tabulation) and comparative method based on the location and specific characteristics of each mosque.

## Background of the Mosque

The mosque is the main religious monument of Islam, which among its many functions, most importantly, is collective worship. The Prophet's Mosque is considered the first mosque to be the model of other mosques. Earlier, the Quba Mosque was built near the city of Medina, but there is no information about its original form. Some sources also mentioned the construction date of the Prophet's mosque as 622 AD and the Quba Mosque as 623 AD. According to the verses of the Qur'an, in the 12 years of the Prophet's stay in Mecca, prayers were held in The Masjid al-Haram and other mosques, but there is no information on how these mosques are.

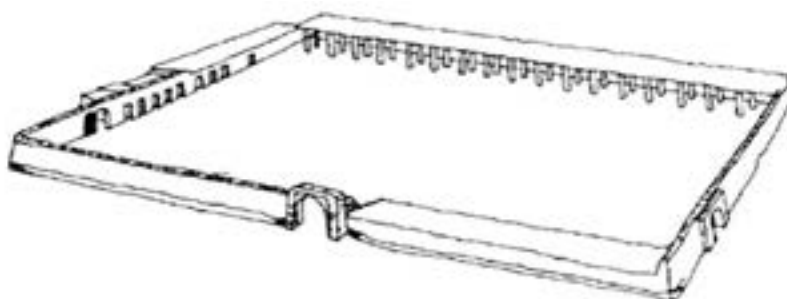
The Masjid al-Haram was also a place of worship before Islam, verse 35 of Surah Anfal said: “and their prayer to the Kaaba was nothing but whistling and clapping”. The Masjid al-Haram was actually the empty space around the Kaaba until the second caliphate. During the time of the second caliph, a wall was built around it for the first time and has been developed and restored many times since then (Nobahar,1994: 83). The simplest form of the mosque consists of a central courtyard, which is surrounded by porticoes and connected to a covered hall, which is modeled after the house of the Prophet of Islam (Figure 1 and Figure 2) (Hillenbrand, 2014: 32).

The House of Prophet Muhammad (PBUH) in Medina had a simple square courtyard with several rooms on the sides and a colonnade made of palm tree trunks and a roof covered with palm leaves and thatch. A not-so-magnificent building, consisting of a courtyard with clay walls about 50 meters and rooms in the east of the southern part of the east wall. Short panels of palm trees were erected in its South and north sides, with roofs covered with palm leaves to protect people from the heat of the sun. The southern wall was facing the Qibla (Ettinghausen & Grabar, 2019: 3,6, Ahmadi Afzadi et al, 2023).



**Figure1.**

**The reconstructed plan of the Prophet's house, 624 AD. (Ettinghausen & Grabar, 2019: 16)**



**Figure2.**

**Perspective of the prophet's house (Hillenbrand, 2014: 39)**

Muslims started building mosques in the first days, and as a result of the increase in the number of mosques, architectural forms also expanded but the ascetic simplicity recalls the worship programs defined by Prophet Muhammad (PBUH). The main features of the first mosque can be summarized in a few sentences; it was basically an enclosed, spacious and empty space. Its enclosing walls were simple, in the inner body of the wall facing the Qibla, the “canopy” or shaded place, with two rows of columns of palm tree trunks and a roof of the leaves of these trees covered with mud, which were not present in the original design but were built over a year to protect the heat of the sun. After the change of Qibla from Jerusalem to Mecca, the “canopy” was built in the direction of Mecca (Hillenbrand, 2014: 32). The mosque is built with the intention of remain, so it has the highest structures in Islamic architecture; while many non-religious buildings, despite their rich decorations, had a weak structure, this has made many mosques more stable than other buildings. In the realm of architecture, the most important achievement of the Early Islamic era in Saudi Arabia was the specific development and expansion of the Islamic Mosque, because the major Islamic communities need a comprehensive mosque to perform religious, political and social assumptions and duties (Ettinghausen & Grabar, 2019: 5). In the early Islamic centuries, the design, materials, construction methods of the first mosques were very simple and unprecedented, because Islamic architects tried to avoid luxuries and decorations and put their pattern in accordance with the descriptions of the Prophet's mosque. With the expansion of the scope of Islamic conquests to Levant, Iraq, Persia and even throughout Asia and North Africa, and from there to Spain and southern France, in all these stages, the Islamic Mosque was also in progressing side by side with Islamic conquests. Obviously, as a result of these developments, various mosques with beautiful and pleasant architecture emerged, so that it can be said that the mosque itself is the best mirror of architectural evolution and one of the biggest factors that in different periods of Islamic history was able to use the wisdom and intelligence of Muslims and do a great service in the advancement of architectural (Taheri & Fattahi, 2022 :2).

### Functions of the mosque

The mosque is an Islamic building whose most important

function is collective worship. The origin of the mosque goes back to the action of the Prophet and has since been expanded in order to preserve Islamic traditions. Because the Islamic city cannot be imagined without a mosque (Papadopoulou, 1989: 9). The difference between the mosque and other places of worship consists of two parts: function and composition and facade. The function of the mosque, unlike temples and other worship centers, was from the very beginning, in addition to the place of worship and religious duties, the center of political education and social activity, etc. In terms of composition and facade unlike the early mosques which were very simple and did not have special decorations, the style of each of the mosques depended on its location, in the event that the churches were built high with many decorations or the fire temples were located in the area around which it was open (Taheri, 2015: 9). As mentioned, the mosque was initially a center of worship, politics, judgment and education, but with the spread of Islam and the activities of Muslims, political, judicial, educational and etc. functions were separated from the mosque and each took its own place, but maintained its connection with the mosque (Hajizade, 2016: 7). In the beginning of Islam, mosques were very different from today's mosques in terms of body and function; Establishing prayer and worship, teaching and studying, announcing news and legitimacy of caliphs, delivering sermons, receiving ambassadors, dealing with lawsuits and judging, etc., were among the most important functions of the mosque in the early days of Islam, which undoubtedly corresponded to the needs of the society at that time. With the spread of Islam, the increase in population and the inability of mosques to meet the economic, political, cultural and educational needs of Muslims, the function of mosques was limited to religious-political functions, but due to its special importance for Muslims, it has still maintained its special place (Amini & Montazeri, 2008: 67, Abipoure, 2024).

### Types of mosques by location and function

Locating mosques as the most central building in Islamic cities is very important. Placing a mosque in an urban space makes people more connected to the mosque and creates a greater sense of belonging and presence (Mahdavi Nezhad and Mashayekhi, 2010).

It is quoted from the Prophet of Islam (PBUH) and Imam Ali (AS): "Prayer in Jerusalem is equal to 1000 prayers, in the Jame Mosque is equal to 100 prayers, in the local mosque is equal to 25 prayers, in the Bazaar Mosque is equal to 12 prayers, and the individual prayer in his home is equal to It is a prayer". According to this narration, three types of mosques can be listed in terms of functionality and location (Jafarian Somarin et al., 2013: 3):

1.The Jame Mosque: It is for Friday prayers and plays a more prominent political role in the Islamic government due to the sermon at the beginning and after Friday prayers than local mosques. The location of these mosques is much purer and more important and should be related to the market and residential areas.

2.The Local mosques: These mosques are the most accessible mosques in the Islamic society and can be placed in any area and urban structure.

3.The Bazaar Mosques: Such mosques are located next to men's places of business, in the market or other commercial places, and they go there during prayer.

There is another type of mosque in the city of Medina, which can be called pilgrimage mosques, due to the occurrence of an important historical event among Muslims in that place, it has become a mosque. For example, we can mention the Fath Mosque, where the prophet's tent was erected during the battle of Ahzab (Ataei Hamedani et al., 2011: 8). As the city grows and flourishes, the number and size of mosques increases, local mosques are created and the Jame Mosques become numerous. Among these, the physical position and role of local mosques is relative to each neighborhood is the same as the position and role of the Jame Mosques in the overall pattern of the city (Kiani, 2000: 8). Mosques have more diversity in terms of function, which can be seen in Table 1.

**Table1.**  
**Types of mosques in terms of functionality (Grobe, 2001) (Taheri, 2014: 9)**

| Mosques in terms of functionality       |  |
|---|--|
| <b>The Jame (great) mosques</b>         | Such mosques were built by sultans and rulers, administered by the government or their founders, and they were also responsible for choosing or approving prayer leaders and teachers.   |
| <b>Medium mosques</b>                   | They were built by local elders or people's participation and did not have a specific restriction on the choice of prayer leaders, unless followers of a particular religion built a mosque for themselves that chose prayer leaders from the same religion. |
| <b>Small mosque</b>                     | They were built for daily worship. These mosques were built by house owners in neighborhoods or commercial centers or along the market.  |
| <b>Mosque-schools (Masjid- madrasa)</b> | They have had a religious and educational function; sometimes the functions are divided at different levels, and sometimes they are even placed side by side with a distance.  |
| <b>Musallas</b>                         | These mosques are used for Muslims' daily prayers. They generally include a small space with an altar and are not complex buildings.   |
| <b>Mausoleum mosques</b>                | In this type, the mosque building is combined with a tomb or funeral home.   |
| <b>Funeral mosques</b>                  | They were built in cemeteries for prayer before the burial of the dead.  |
| <b>Mosques with side functions</b>      | These types of mosques are formed with other complexes with different functions such as palaces, schools and factories, and are more like a prayer hall.   |

## Mosque Architectural Styles in the Islamic World

As the most important component of Islamic architecture in different regions of the world, mosques have many similarities in terms of architecture, however in each region they have also received the architectural and artistic characteristics of that region and have found differences from other mosques.

Thus, the architecture of the mosques of any country is indicative of the native architectural features of that land (Papadopoulou,1989: 10). The Medina Mosque, the first mosque in the Islamic world, which was built by the Prophet of Islam (PBUH) with features such as simplicity, limited decorations, local materials and its functionality, none of the elements of the dome, minaret, entrance portal, decorations and motifs were part of its basic pillar. But gradually, since these

elements did not conflict with the teachings of Islam, they emerged through the passage of pre-Islamic sacred architecture, as the main pillars of mosque architecture, and their unifying factor was the spirit of Islam and the word of the people of the Holy Quran (Ettinghausen & Grabar, 2019: 9). Art and architecture in the vast world of Islam have four basic schools (methods). Of course, other sub-methods can also be investigated in some Islamic countries such as Indonesia. These four main methods are:

1. Egyptian style: a style derived from the ancient architecture of Egypt and has been common in the Islamic countries of East Africa, including Egypt, Sudan, and surrounding countries up to the Hejaz region (Pirnia, 2019: 18). Examples include "Amr ibn Al A'as Mosque" and "Mosque of Ahmad Ibn Tulun Mosque" in Fustat, Egypt (Taheri & Fattahi, 2022 :8).

2. Shami style: It is originated from Byzantine art and architecture and has similarities with Egyptian style. It is common in the countries of Syria, Palestine, Lebanon, Jordan and part of Turkey, exemplified by the Damascus Mosque "the Umayyad Mosque". In Saudi Arabia, it was integrated with the Egyptian style and buildings such as "Masjid Al-Haram" and "Masjid Al-Nabi" (Prophet's Mosque) have been built (Pirnia, 2019: 18).

3. Maghribi style: It is a very impressive, advanced and ornamental style that has been used in Morocco, Algeria and southern Spain. "Córdoba Grand Mosque" in Spain is an example of these mosques. In this method, Iranian Muslims have made a significant contribution, and examples of the use of Iranian building elements can be found in this method. This style later developed into two branches, one in North Africa and the other in Andalusia (Spain), buildings such as "Alhambra Palace" in Granada, which is of this style. The Maghrib style has had a great impact on European art and architecture. The Andalusian branch became more mature than the Western branch, although the origin of both is the same (Pirnia, 2019: 18,20, Akbari, 2024).

4. Iranian style: its architectural achievements were richer and more glorious than all styles, and were common in the countries of Iran, Mesopotamia (Iraq), Afghanistan, Pakistan, Transoxiana (Uzbekistan), Tajikistan, India and Indonesia, as well as sheikhs around the Persian Gulf such as Oman (Pirnia, 2019: 18) and included the Khorasani, Razi, Azari and Isphani styles. The important feature of

the Iranian style in the architecture of mosques is that it has given more importance to the spiritual issue of the mosque than other styles, and in contrast to the Egyptian, Shami and Maghribi styles, which often try to exhibit their power and greatness, in the Iranian style it is most important to free the soul from the preoccupations outside the mosque and focus the believers on their soul and heart. There is no sign of the believers being humiliated when facing the building of the mosque, and the goal is to shine a light in the hearts of the believer (Taheri & Fattahi, 2022 :8).

### The evolution of mosque architecture in Iran

At the beginning of the emergence of the religion of Islam, art and architecture did not have a special place among Muslims, and perhaps there was no need for art and architecture in the construction of mosques, but in the following centuries, there was a need for physical bodies and elements and material forms that could be the result and embodiment of the values and beliefs of the nascent religion of Islam. In Iran, Islamic art used the elements that it inherited before the advent of Islam throughout its ancient and brilliant history, after breathing its spiritual and divine spirit and transforming its quality into Islamic elements, and gradually this original art was used not only in the construction of mosques in the Islamic world, but also in other countries. Throughout history, Iran has always been one of the main centers of art, and with its history of thousands of years in architecture, it shines like a bright star in the sky, which represents the ancient civilization and the rich culture of the ancestors of this land. Civilization and culture that took on the aspect of belief and faith with the introduction of Islam, and religious beliefs have had a great impact on its evolution. The Iranian nature was not compatible with the simplicity of the first mosques, and that is why the art-loving Iranians, in addition to exemplifying the early mosques, built the mosque in the best way and increased its decorations, to the point that among the prisoners of war, artists were transferred to the cities and forced them to rebuild the city. Iranian architects used what they knew along with belief and faith in the building of the mosque. Among them are the construction of high minarets, beautifully carved domes, and mysterious calligraphy mihrabs (Dadras et al., 2015: 1-2).

Table 2 summarizes the evolution of the architecture of Iranian mosques from the first centuries of Islam to the present day:

**Table2.**  
**The evolution of the architecture of Iranian mosques (Authors)**

| Period                              | Pattern of mosques   | Architectural features of mosques  | Sample   |
|-------------------------------------|--|--|--|
| Timmyanid                           | Ancient Egyptian patterns and Sassanian methods  | Simple and with a large and public yard and spaces with a large pool in the front and of Qibla   | The Friday Mosque of Yazd, the end and of the 2 <sup>nd</sup> century AD, is the oldest mosque built in Iran, which has the features of Sassanian Iranian architecture   |
| Abbasid                             | Timmyanid and Arab architecture in general design of great courtyard and different positions   | The roof of the mosques is completely flat and the minaret is round like a tower in the mosque   | Tarikhaneh mosque of Damghan, 8 <sup>th</sup> century AD, Soltan mosque in Yazd, Soltan and Dorzi  |
| Al Deyrh                            | Sassanian architecture (before start)  | Four niches, with massive columns and tall and the porch   | The Jame Mosque of Meyke in the early 10 <sup>th</sup> century AD, The Jame Mosque of Mian in the second half of the 9 <sup>th</sup> century AD, The dome of Khosro Nikesar's M.B. Yazd and the dome of Taj al Mian in the Jame Mosque of Isfahan, 10 <sup>th</sup> century AD.          |
| Seljuk                              | The general plan of the Sassanid are four niches   | The Sassanid architecture and plymate changed into a Moslem mosque, using a cruciform form, creating a huge dome on the square.  | The brick minaret of the Old Mosque of Kufan, Brick model of Golestan Mosque, Arian Dome (Arian Mosque), Zwan Mosque, etc.   |
| Khwarezmi                           | Mosque mostly two niches in Khwarezm   | The Sassanid architecture reached the limit of perfection and innovative art was created from the creation of pattern and creating of better form types of "geometric areas and Kufi line" | The Jame Mosque of Gonbad, The Jame Mosque of Faravand and the Jame Mosque of Mian, Zwan   |
| Ilkhanid                            | Traditional and Seljuk style   | To show their power, the Mongols turned to the construction of large buildings with very large domes and tall towers.  | The Jame Mosque of Yazd was one of the most prominent buildings of this period. The Jame Mosque of Zaranj, The Jame Mosque of Tiber, The Jame Mosque of Yazd and etc.  |
| Timurid                             | Elaborate and Seljuk architecture  | It was the time when a lot of progress, progress in all kinds of construction. Most of the buildings have four niches with long porches and domes decorated with intricate carvations      | Columbad Mosque  |
| Turkmen (Ay Qaymash & Qura Qaymash) | Following the Ilkhanite architecture   | -  | Muse Mirza Vaspur, Waz, Mosque in Tahir  |
| Safavid                             | Very comprehensive design of four niches with a very conservative space relative to the underlying surface   | Construction of huge niches with very large domes  | Sakhi Lotfollah Mosque, Jamat Mosque, The Jame Mosque of Grant Abbad or former Shah Mosque, Hakim Mosque and Yazd Mosque in Isfahan, Sheikh Mosque of Varchad and the Jame Mosque (Algh) of Isfahan  |
| Naderi (Afshariya)                  | Following Timurid architecture   | -  | The porch, dome and minaret of the holy court of Imam Reza (A.S.), Shah Raza Mosque in Khat  |
| Qajar                               | The general design of four niches with arches, dome, minaret, minaret, etc., are taken from the architecture of the previous and original periods of Iran. | Qajar architecture is considered to be the continuation of the second period of Islamic style (Islamic school)   | The very beautiful mosque of Haj, Hassan Asadollah in Shiraz and Seyyed Mosque in Isfahan  |
| Pahlavi                             | During the first Pahlavi period, mosque construction was not prominent   | -  | Darkashah and Hassan mosque in Yazd, Al Khat Mosque in Mashhad.  |
| Islamic Republic (Contemporary)     | Modern architecture  | Mosques cannot be so rigid and have any specific shape, however, they have a unique and divided into four categories based on their typology.  | 1. Modern mosque and Imam Hassan Mosque<br>2. White modernist mosque: Shahrak Qadr Mosque<br>3. Free mosque: Tehran University Mosque, Hassan Asadollah Mosque<br>4. Post-modernist mosque: Al-Jamali Mosque<br>5. Hybrid modernist mosque: The initial design of Amir Mosque in Tehran. |

## Architectural Pattern of Iranian Mosques

The architectural pattern of the first mosque was formed by the Prophet of Islam with features such as simplicity, limited decorations, local materials and its functionality. When this pattern entered Iran, it was combined according to the culture, geography and climate of each

region and is known as the most prominent element in Iranian cities after Islam; the mosque is a special building for the Islamic society, which can be the key to understanding Islamic architecture (Hillenbrand, 2014: 33).

The multi-functionality of the mosque has caused it to be a social and cultural center alongside worship and religious activities, and it cannot be separated from the structure of the Islamic city (Behzadfar, 1997: 9). Regarding the mosque and its physical features, various categories have been stated that the four-porches mosques are the dominant design of the mosques of Iran and the eastern part of the Islamic world; “the four-porches mosque gradually became the dominant mosque in the east of the Islamic world” (Hillenbrand, 2014: 98). “Domed mosques with four porches are the most complete type of Iranian mosque” (Martyn and Hogue, 1996: 63) and for other pattern, researchers have mentioned a specific species by various names. Motedayen introduces the Shabistan mosques as Abbasid style mosques (Motedayen, 1999: 88), Oleg Grabar calls these mosques “Arabic Mosques” (Grabar et al., 2012); Or Auguste Choisy, calls it a basilica (Choisy, 2004: 176). Hillenbrand categorizes mosques in the form of Arabic, Abbasid, Maghrebi, Ottoman, Iranian and Egyptian mosques and also divides the shape pattern of mosques into five types of shabistani, single porch, two porches, four porches and four arched (Chahar-taqi) and Tanbil -shaped (Pirnia, 2019: 24). In the research conducted by Nezhad Ebrahimi and Murad Zadeh in 2018, they presented 9 pattern for the shape and elements of mosques, which include shabistani, single porch, two porch, four porch, four-arched, closed, central dome with two porticoes in the sides, cross, and rock, each of these mosques have their own characteristics, and by comparing the spatial and physical elements of these mosques, they classified the index elements of the mosques as the courtyard, the shabistan, the mihrab, the porch, the dome, and the minaret (Nezhad Ebrahimi and Murad Zadeh, 2019: 90).

### The Architectural Index Elements in the Mosque Building

Islamic architecture is considered one of the most successful architectural methods in the history of world architecture. Historically, architecture is the first art that adapted itself to Islamic identity and concepts and was welcomed by Muslims (Mahdavi Nezhad et al., 2015: 265). As the most important component of Islamic architecture in different regions of the world, mosques

have many similarities in terms of architecture; however, in each region, they have also received the architectural and artistic characteristics of that region and have found differences from other mosques. Thus, the architecture of the mosques of each country illustrates the characteristics of the native architectural features of that land (Papadopoulos, 1989: 10). In general, mosques have common elements that distinguish them from other buildings. The index elements of mosques are:

**The Courtyard (Sahn):** The courtyard of the mosque, which is also called the “Sahn” is built in a square or rectangular shape due to following the design and plan of the world's first mosque (Prophet's Mosque); It is often the first space where a believer is placed when he enters the mosque (Hosseini, 1999: 120). Water as a manifestation of Purity and cleanliness is located in a large pond in the middle of the courtyard (in the form of a circle, square, rectangle or octagon according to the spatial design of the building) (Tabibi, Sajadi and Abedi, 2019:6).

**The Shabistan (Prayer Hall):** The covered part of the mosque, which is prayed, the roof space with columns arranged in parallel rows, one side of which opens to the mosque courtyard, is called the shabistan (Hosseini, 1999: 123). It usually has two sections, women's and men's, which are separated in different ways in mosques, sometimes as a special women's shabistan on the top floor and sometimes with a curtain or separator on the level of the men's shabistan (Taheri & Fattahi, 2022: 4).

**The Mihrab (Prayer Niche):** It represents the Muslim Qibla and the milestone of the mosque, because it shows the direction of the Qibla in Mecca, its existence is essential (Tabibi, Sajadi and Abedi, 2019: 3). Part of the mosque that is built on the wall of Qibla musalla and the Imam of the congregation stands there to pray. Theoretically, the mihrab represents the heart of the mosque and the position of the Qibla wall. Mihrab was not one of the main pillars of early Islamic mosques and from the time when in Iran and in the regions that were of the same religion as the ancient Iranians, fire temples

and Mithraic temple were converted into mosques, the mihrab was also preserved as a sign of the Qibla direction and gradually became one of the main pillars of mosques with the difference that in the Mithraism temples and in Christian churches, the mihrabs were in the east-west direction, but in Islamic mosques, the mihrabs were built facing the Qibla (Cumont, 2004: 173).

**The Porch (Iwan):** Among the innovations of Iranians in the Parthian style architecture that has been transferred to Islamic architecture (TaHERi & Fattahi, 2022: 3). The porch is a space with a stretched arch, not too deep and relatively wide, one side of which is open and leads to the courtyard, and over time, it is known as the characteristic of the Iranian-style mosque, and mosques are usually distinguished by one to four porches. The porches are performed around the courtyard of the mosque and create a hierarchy to enter the shabiatan, which is the main place of worship (Hosseini, 1999: 121).

**The Dome (Qubba):** The symbol of the sky, due to its curvature, is considered a sign of the soul and the world of abstracts (Naqhzadeh, 1999: 131). A dome is a geometrical place that is created from a specific rotation around a vertical axis. In the Islamic architecture of Iran, the dome is always a symbol of the heavens and is placed on a cube that is a symbol of the earth, and this arrangement is displayed so beautifully that the muqarnas and squinches (Filpoosh 2) are seen as the link between the heavens and the earth. At the top of the dome of most traditional Iranian mosques is the majestic name of "Allah" can be seen, which is the comprehensive name of God, and includes all the names and attributes. The main dome or the monotheism is the symbol of God's unity, because there is only one main dome in each mosque. The geometric form of the base of the dome, which is cube-shaped, can be taken from the building of God's house, which in the next stage, the quadrilateral becomes octagonal, sixteen sides, and thirty-two sides (Anagheh et al., 2012, 168).

**The Minaret (Tower):** Minaret is high-altitude structure that dates back to the ziggurats of Iran and Mesopotamia. The minaret was used as a bell tower in the design of churches. During the early days of Islam, the minaret was not one of the main components of the mosque and since the Seljuk period which was equal to the Razi architectural style, it has become part of the main organs of the mosques (TaHERi & Fattahi, 2022: 5). The function of the minaret is to invite Muslims to pray, a high tower that is attached or built near the mosque. Their shape is sometimes taken from the square towers of Christian churches, which themselves are modeled after Roman and Greek buildings, or from the Sasanian towers of Iran (Zargar et al., 2007: 54).

Other architectural elements of the mosque include the entrance and portal, vestibule, pond, portico, minbar (pulpit), Maksudreh3, decorations (Tile work, inscriptions, etc.).

### **The Historical (Local and Jame) mosques in Zanjan**

With a history of several thousand years, Zanjan province has housed valuable historical monuments and buildings, each of which has exhibited architectural features in different periods and artistic values in the face of its building. Most of the mosques in Zanjan belong to the Qajar period, two mosques (The Jame Mosque of Qorveh and the Jame Mosque of Sojas) belonging to the Seljuq, which are the oldest mosques in Zanjan. Some of the mosques in Zanjan are shown in Table 3 with the mention of the location, historical period and architectural style (Abdollahpur Delamani & Rahmati Zadeh, 2018: 4) (Bimakr, 2017: 5) which are discussed in detail.

**Table3.**  
**construction time and architectural style of mosques studied (Authors)**

| Items | Mosque name                     | City/Village    | Historical Period (A.D.)                               | Architectural style                                     |
|-------|---------------------------------|-----------------|--|---|
| 1     | The Jame Mosque of Qorveh       | Abhar/ Qorveh   | Seljuk 1022  | Sassanid set four porch and four arches at the entrance |
| 2     | The Jame Mosque of Sarak        | Khoshdel/ Sarak | Seljuk, Late 11 <sup>th</sup> century                  | Domed shabistan four arches                             |
| 3     | Masjed-e Mollababai             | Zanjan          | Late Sassanid and early Qajar 16 <sup>th</sup> century | Shabistan   |
| 4     | Masjed-e Mollababai             | Zanjan          | Qajar Late construction unknown                        | Shabistan   |
| 5     | Masjed-e Mollababai             | Zanjan          | Qajar Late construction unknown                        | Shabistan (Shabistan) extension at the end              |
| 6     | The Jame Mosque of Zanjan Sarak | Zanjan          | Qajar 18 <sup>th</sup> c.                              | Four Porches  |
| 7     | Masjed-e Zanjan                 | Zanjan          | Late Sassanid Qajar 19 <sup>th</sup> c.                | Shabistan   |
| 8     | Masjed-e Zanjan                 | Zanjan          | Qajar 18 <sup>th</sup> c.                              | Shabistan   |
| 9     | Masjed-e Zanjan                 | Zanjan          | Qajar 18 <sup>th</sup> c.                              | Shabistan   |
| 10    | Masjed-e Zanjan                 | Zanjan          | Qajar 18 <sup>th</sup> c.                              | Shabistan   |
| 11    | Masjed-e Zanjan                 | Zanjan          | Qajar Late construction 1887                           | Shabistan   |
| 12    | Masjed-e Zanjan                 | Zanjan          | Qajar 18 <sup>th</sup> c.                              | Shabistan   |
| 13    | Masjed-e Zanjan                 | Zanjan          | Qajar 18 <sup>th</sup> c.                              | Shabistan   |
| 14    | Masjed-e Zanjan                 | Zanjan          | Qajar 18 <sup>th</sup> c.                              | Shabistan   |
| 15    | Masjed-e Zanjan                 | Zanjan          | Qajar 18 <sup>th</sup> c.                              | Shabistan   |
| 16    | Masjed-e Zanjan                 | Zanjan          | Qajar 18 <sup>th</sup> c.                              | Shabistan   |

**1. The Jame Mosque of Qorveh:** Is one of the historical monuments of Qorveh village at km 15 of the Abhar -Takestan Transit Road with a thousand-year history of the Seljuk era (11th century AD), which is similar to the mosques of that period, it was built in the style of a square-plan four- porch, a four-arched style before Islam, with a dome on top of it. The dome is based on four (Figure 3) (masjed-ir news agency). The main space of the mosque is the domed courtyard in the form of a square cube, which is formed by squinches and pendentive into octagons and finally hemispherical dome. The floor of the dome chamber up to the impost (Pakar) belongs to the old building, on the south side of which there are two shabistans in the west and east, which were added in the contemporary period (Korn, 2017: 85). The Jame Mosque of Qorveh building was built in the site of the old building by using the materials of the old building in 1022 AD. This

building consists of three main parts:

the dome chamber and the shabistans on the eastern and western sides, which was destroyed over time by natural and abnormal factors, was repaired and rebuilt again on 1179 AD. The decorations left in this building include an inscription with thuluth script at the foot of the filpooshes, including verses of Surah Hashr, decorated with plant figures (1179 ad) and an inscription in the naskh script on the top of the mihrab(1022 AD) with tangled gypsum bergamots and beautiful surfaces with brick designs and painting on gypsum with plant motifs (from the architectural designs of Al Buyid), which made this mosque one of the masterpieces of medieval Islamic art (Seljuk) (masjed-ir news agency). The Jame Mosque of Qorveh was registered on February 24, 1963 with the number 433 in the list of historical monuments of Iran (Meshkati, 1966: 133).



**Figure3.**  
**The Jame Mosque of Qorveh (Cultural Heritage of Zanjan)**

**2.The Jame Mosque of Sojas:** Is a thousand-year-old mosque of the Seljuk period located 12 kilometers northwest of the city of Khodabandeh county, which was built in a four-arched style with a domed shabistan (Figure 4). The main building of the mosque is a dome chamber (shabistan) with approximately dimensions 5.9 by 5.9 meters with a high dome. The exterior is brickwork, are placed on top of each other with mortar and Saroj (General Administration of Cultural Heritage, Tourism and Handicrafts of Zanjan Province). The dome of this mosque is a type of single-shell domes, which is built with bricks and its decorations are unique to the Iranian star motif (five-pointed star) and its height is 16

meters from the floor (Aleagha, 2000: 7). According to the evidences in the architecture and decorations of the building, it can be said that this mosque belongs to the early 11th century AD. It means it's Seljuk and it's about a thousand years old; but the current mihrab of the Jame Mosque of Sojas, due to the method of stucco and the use of paint, as well as the traces of the old mihrab under it, seems to be from the Ilkhanate period. The Jame Mosque of Sojas was registered on February 1, 1975, with the number 1019 in the list of national monuments of Iran (General Directorate of Cultural Heritage, Tourism and Handicrafts of Zanjan Province).



**Figure4.**  
**The Jame Mosque of Qorveh (Cultural Heritage of Zanjan)**

**3.The Mirzaei mosques:** When the Arabs conquered the city of Zanjan, the name of the city was changed to "Zandigan" and some of its fire temples were converted into the Jame Mosque. In the 11th century, the Seljuk Turks (Jahangir Mirza Qara Qoyunlu) settled in the city and built a new mosque in the Zanjan Bazaar, which remained standing until the death of Nader Shah and the Uzbek invasion and the destruction of the city and the massacre the people of Zanjan, that this mosque is the same as the first Mirzaei Mosque. This mosque was destroyed again during the time of Naser Al-Din Shah in the Zanjan (Babis uprising) revolt and was rebuilt again. These demolitions could have turned the mentioned Jame Mosque, which probably had a larger area, into several parts, so the philosophy of placing two mosques next to each other and in front of the Sofrehkhaneh (Refectory) was based on this; the date 1865 AD is written on the entrance portal of the mosque, which indicates sometime after the Zanjan rebellion, according to this issue and quoted by the elderly trustees of Zanjan

Bazaar, the Upper Mirzaei Mosque (Mirzaei Ghaemi) was built earlier than the Lower Mirzaei Mosque (Najafi Mirzaei Mosque) (Khalili, 2020, 61-62). Mirzaei mosques are located in the registered Zanjan Bazaar complex, which was registered on September 5, 1977 with number 1440 in the list of national monuments of Iran (General Administration of Cultural Heritage, Tourism and Handicrafts of Zanjan Province).

**3-1 The Mirzaei Ghaemi Mosque (Mirza Mehdi):** The Upper Mirzaei Mosque (Figure 5) known as the Four-Mihrabs Mosque, is one of the oldest religious buildings in the city of Zanjan in the lower section of the Bazaar (Bazaar-e-Paieen) complex (Knife makers neighborhood), the main building of which is of the Chehel Sotoun (the Forty Columns) type. In the summer of 1467 AD, Timur Gurkani's troops attacked Iran and its cities, including Zanjan, and after the destruction of the city during this period, the first mosque which

was built after that was the Mirzaei mosque. According to historical texts, the construction or reconstruction of the mosque was mentioned in 1716 AD by Haj Haider Hossein Zanjani, whose authenticity is questionable, but according to historical documents, the mosque was rebuilt in the middle of the Qajar period at the will of the people and under the guidance and supervision of the late Haj Mirza Abu Al-Qasim Mujtahid, known as Mirza, was rebuilt in 1865 AD, and since that date it became known as the Mirzaie mosque (Parchegani, 2004: 219) (Bimakr, 2017: 12). Previously, there were four mihrab in the structure of the mosque, dedicated to various sects of the Sunnis, and after the spread of the Shi'a religion in the city of Zanjan, a mihrab was added to these four, which is located in the section of the women's shabistan. Other names of the mosque include the Tailors Mosque, the Tabrizis Mosque and the Ayatollah Qaeimi Mosque (General Administration of Cultural Heritage, Tourism and Handicrafts of Zanjan Province). This mosque consists of two parts, old and new, the first part, known as the Old Shabistan, is located on the south side of the courtyard, and the date of 1883 AD is written on tiles above its main door on the Southern porch (Yar Mohammadi Bigdeli, 2011: 144). The second part is a new mosque that is an incomplete imitation of the four-porch mosques, in which there are the necessary elements in the four-porch mosques, including the central courtyard, the four-porch, the shabistan, the cells of the students

(Hujras) and the ablution area (Mosque News Agency). The mosque's shabistan is divided into two parts: men's and women's. In the men's shabistan the mihrab is located almost in the middle spring of the south side and in other springs this practice has been repeated as well, as a result of these repetitions in the men's shabistan, four mihrab have emerged, which are the lower part of the mihrab is made of tiles and the upper part is made of plaster, and only one mihrab has remained in its old form, and the top of it is made of muqarans, and the two sides are decorations of plaster in square shape, and 1911 AD is written prominently, which is the year of its restoration (Kamali Sarvestani & Soleimani, 2015: 77). According to some experts, the presence of four mihrab in the main shabistan confirms the presence of four religions in the Society of that time, which shows that this building belongs to the era before the Safavid period, and each spring of the shabistan is attributed to a religion (Shafi'i, Hanbali, Maliki and Hanafi) in the 15th century AD, which of course cannot be true at all considering the date of the construction of the mosque, and in other words, the purpose of creating these mihrabs was only to fully observe symmetry (Abdollahpur Delamani & Rahmati Zadeh, 2018: 9). The women's shabistan is located on the western side of this shabistan (Sobouti, 1992: 136) which the fifth mihrab of this mosque is located there (Kamali Sarvestani & Soleimani, 2015: 77).



**Figure5.**  
**The Mirzaei Ghaemi Mosque (Miraszanjan.ir)**



**Figure6.**  
**The Najafi Mirzaei Mosque (Miraszanjan.ir)**

**3-2 The Najafi Mirzaei Mosque:** The lower Mirzaei Mosque (Figure 6), located in the lower section of the Bazaar (Bazaar-e-Paieen) complex, was built Abu Al-Qasim Mujtahid and later repaired and restored by one of his descendants, Mirza Hossein and was named the Najafi Mirzaei Mosque in the name of the Imam of its congregation, in the past, it was also known as the mosque of Coppersmiths, Blacksmiths and Knife makers. The mosque lacks a dome and a minaret due to its location inside the Bazaar and its proximity of the Jame Mosque of Zanzan for respect it. The Najafi Mirzaei Mosque is of the type of Chehel Sotoun (the Forty Columns)/ Shabistani Mosques and has a rectangular courtyard in the middle, a large shabistan in the western district, another shabistan in the southern district and hujras (student's cells) around the courtyard (Khalili, 2020: 55).

**4.The Valiasr Mosque (Mullah Mosque - Choquer Māscid):** Is one of the mosques in the historical and old texture of Zanzan Bazaar, located in the upper section of the Bazaar (Bazaar-e-Bala) complex in the row of Box-makers (Yokhari Bazaar), which is more than two centuries old (Figure 7) (Khalili, 2020: 49). The mosque was built in 1759 AD by Haji Pir Vali, it is

also known as the Mullah Mosque or Saheb Al Zaman Mosque, because during the era of Naseri (Naser Al-Din Shah Qajar), this mosque-school is under the control of "Mullah Muhammad Ali Hojat Zanzani" known as Babi, who was the base of the Babians during the events of Naser Al-Din Shah's era. He repaired this mosque, so it became known as the Babi Mosque or Mullah Muhammad Ali Mosque among the public (Noorallahi, 2015: 289). The only surviving inscription that has introduced the name and founder of the building as a written document in the form of a poem, is a white marble inscription that is located in the oldest and first pillared courtyard of the mosque in the mihrab area, this courtyard is the initial building of the mosque, which dates back to the days of Zandiya and is lower than the surface of the environment and the surrounding space (in the form of underground) and the main body is currently located above this courtyard and has only one entrance (Bimakr, 2017: 12) (Khalili, 2020: 50). The Valiasr Mosque was registered on November 22, 2009 with number 28016 in the list of national monuments of Iran. This mosque was the center of the struggle of the people of Zanzan province in 1978 and before that, which was registered in the list of spiritual monuments of the country in the Fajr decade of 2012 as the "place of the event of the Islamic Revolution".

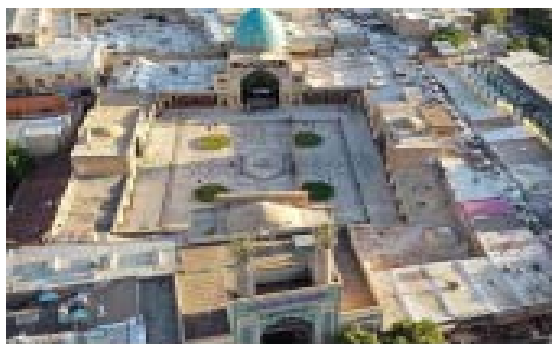


**Figure7.**  
**The Valiasr Mosque (Cultural Heritage of Zanzan)**

### 5. The Jame Mosque of Zanjan (Seyyed Mosque):

Also known as Sayed Mosque, is one of the valuable and historical monuments of the city of Zanjan, which is located in the heart of the Bazaar complex (Figure 8). In historical sources mentioned the construction of this building from 1824 to 1826 AD (Noorallahi, 2015: 271) and was built by Abdullah Mirza, the 11th son of Fath Ali Shah of Qajar, during the end of his reign in Zanjan (Yar Mohammadi Bigdeli, 2011: 150). At that time, it was called "Masjid-Madrasa Shahi (Sultani)", but later it became known as "Seyyed Mosque School", because the mosque administration fell into the hands of one of the famous scholars of Zanjan named "Seyyed Mohammad Taremi Sardani", (Zeinali, 2009: 43). Since this mosque is the largest and most important mosque in Zanjan and the Friday prayers were held in it, it is called the Jame Mosque, in addition, in the dedication letter of this building which was prepared in 1828 AD, is mentioned with the name of Joma'a (Friday) Mosque. In some historical documents and books, it is also mentioned under the name of its founder and builder, Abdullah Mirza Dara, as "Abdullah Mosque" (Khalili, 2020: 9-10). There is no increase in the number of complexes and annexes in the next periods in the building. The mosque building is in the style of four porches and as usual the entrance porch is opposite the domed alcove (Shah Neshin) (Sobouti, 1992: 125-127). Its excellent and large dome is type of double shell domes which is decorated with turquoise tiles and the blessed Surah "Al-Dahr" is engraved on the dome with thuluth script and at the top of the dome, there is a bronze symbol in the shape of a sphere (Zeinali, 2009: 42). The

central courtyard, like other four-porch mosques, is rectangular in shape, with a pond in the middle in the past, and its surroundings include the cells of students of religious sciences and shabistans. The quadruple porch that are placed by symmetry on its four sides, each was assigned to one of the four religions for negotiation and teaching and learning related religious sciences (Bimakr, 2017: 8). The domed shabistan is located in the middle and behind the porch of the Jame Mosque. In the south porch, there is an inscription in thuluth script, the text of which is a sermon that begins with the name of Fath Ali Shah and ends with the name of Abdullah Mirza. This complex has a pond and ablution areas, but because it was built in the Qajar era of low-durable brick and mud materials, in recent years, most of the tiles have been poured, which have been restored (Zeinali, 2009: 42). The current building of the mosque is one of the works of the first half of the 20th century. During the Pahlavi period, the entrance was changed by construction a street on the northern side of the mosque, and the vestibule space behind the northern porch was destroyed. At the same time as these changes, two minarets were built on the sides of the entrance portal, which stood until 1959 AD, in this year the minarets were destroyed and the entrance portal was added to it again with the library. The courtyard of the mosque had vast gardens full of flowers and plants, which around 1961 AD, were dismantled by the mosque's trustees to prevent moisture from penetrating the building, and in 1989 AD, the gardens were restored in a more limited way (Bimakr, 2017: 8-9). The Jame Mosque was registered on April 30, 1963 with the number 1056 in the list of national monuments of Iran.



**Figure8.**  
**The Jame Mosque of Zanjan (Cultural Heritage of Zanjan)**

**6.The Hosseinieh Azam Mosque:** The Hosseinieh Azam Mosque in Zanjan and its bathhouse are located in the southernmost part of the old texture of the city and in the neighborhood known as Seidler, which in the past overlooked the southern gate of the city (The Gate of Qaltoq), according to the inscription on the entrance portal of bathhouse of this complex, the date of renovation of its building goes back to the period of Naser Al-Din Shah (Hosseinieh Azam Zanjan). Although some sources consider the existence of this holy place during the period of Zand and even Afsharid rule, but the available documents and evidence (the stone inscription left over from the old building of Hosseinieh and the Alam (Shia's holy flag) uncovered from its floor (Figure 9) indicate that it was built during the Qajar period. (Nezhad Ebrahimi & Heydari, 2020: 36). In the existing historical and geographical texts, except for one source, the book "Tarikh Dar al-Irfan Khamse" authored by "Rostam Al-Hokama" in 1832 AD, no source

mentions "Hosseinieh Zanjan". This mosque is located in the southernmost part of the old texture of the city in three floors (underground, ground floor and first), has numerous spaces cultural, religious, therapeutic and service, which is one of the most important of cultural and religious influencer centers in the city. The 500 years old mosque was last renovated in the 1960s, and the current shabistan of Hosseinieh was the courtyard of the mosque and the Tekyeh<sup>4</sup> of Hosseinieh in the past (Hosseinieh Azam Zanjan). The mosque with a rectangular plan has architectural elements of the courtyard without a pond, minaret, mihrab, dome, porch and also lacks hujra and cistern (Abdollahpur Delamani & Rahmati Zadeh, 2018: 7). The Hosseinieh Azam Mosque of Zanjan (Figure 10) was registered as a spiritual heritage in the list of spiritual heritage of the country on January 4, 2009 with Number 10 and has a valuable place as a symbol of Iranian-Islamic identity (Rabieefar et al., 2012: 2).



Figure9.

Stone inscriptions and metal Alam uncovered from the old building of Hosseinieh (Nezhad Ebrahimi & Heydari, 2020: 36)



Figure10.

The Hosseinieh Azam Mosque (Miraszanjan.ir)

**7.The Chehel Sotoun Mosque-School:** Or the Chehel Sotoun Mosque-Madrasah (Figure 11) is located in the upper section of the of Bazaar (Bazaar-e-Bala), on the southeast side of the Seyyed Mosque-Madrasah (The Jame Mosque of Zanjan), in the direction of the Hojjat-Al-Islam (Shoemakers) Bazaar, and it is considered the second prestigious seminary after the Jame Mosque of Zanjan. The mosque has a courtyard and vast shabistans with arches and rib vaults which beautifully and symmetrically based on 32 thick columns. The use of the number 40 for the columns of the mosque is on the one hand, as the plurality of columns, and the other hand religiously, the number 40 is sacred and respected, which has made this building known as the Forty Columns (Chehel Sotoun) Mosque School among the people. This building, which was one of the most important seminaries in the Qajar period, was built by one of the scholars of that time named the late "Mullah Ali Qaazpoz Abadi", and since there is no specific name of founder in the Chehel Sotoun Mosque, it can be said that this mosque was built with the efforts of the worshipers (Bimakr, 2017: 10). According to an inscription on the forehead of the entrance to the women's shabistan, it was

written prominently, the mosque was built in 1867AD. The structure of the building is such that if there was no date indicating the time of its construction, its appointment would have been proven to the late Qajar period, especially the reign of Mozaffari and Ahmed Shah (Nouri, 2018: 20). The mosque is architecturally built in the Seljuk style, four porches and is a type of the Forty Columns Mosque. In the interior, it has a plaster coating and its mihrab, which is decorated with Rasmi-bandi 5 and Maqali6 tiles in colors of yellow, blue, turquoise, black and navy blue in geometric designs with predominance of yellow color. In a blue colored inscription, the text "by the order of Mr. Amir Afshar and with the attention of Mr. Haji Rajab Ali 1913" is mentioned, which indicates the time of restoration of this building. The Chehel Sotoun Mosque, which is also known as the "Kafashan Mosque" (Mosque News Agency) is located in the registered Zanjan Bazaar complex, which was registered in the list of Iran's National Monuments on September 5, 1977, with the number 1440 (General Administration of Cultural Heritage, Tourism and Handicrafts of Zanjan Province).



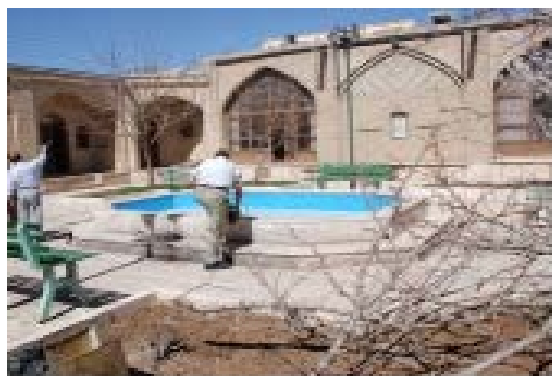
**Figure11.**  
**The Chehel Sotoun Mosque-School (Cultural Heritage of Zanjan)**

**8.The Seyyed Fathollah Mosque:** Is near the upper section of the of Bazaar of Zanjan (Bazaar-e-Bala), is located in the alley formerly called Zoriasatain (Figure 12). It's a type of central courtyard Shabistani Mosque, the Pishtaq7 of the mosque with a beautiful Rasmi-bandi on a surface of Qajar-style tile work and with Maqali designs in the form of a covered space and semi-open porch, built in front of the entrance gate and leads to the vestibule section of the building, which is decorated in the same way. The octagonal courtyard of the mosque is with a basin in the middle and the surrounding green space. The porticoes and cells around the courtyard

express the symmetry in architecture with the brick arches khonche poush<sup>8</sup> (an architectural term meaning arched ceilings with decorative hanging moldings) and Panjohaft Arches<sup>9</sup>. Men's and women's shabistans are located on the northern side. The mihrab inside the shabistan has beautiful tile decorations with geometric designs in the colors of the Qajar period, around the mihrab is an inscription with the theme of verse 34 of Surah Noor on a turquoise blue background, which begins with "Bismillah" and ends with "The memorial of Haj Muhammad Kamal Akhavan", and on its forehead it shows the date of 1873 AD, which was built during the reign of Naser Al-Din Shah and by

“Seyyed Fathollah” the famous cleric of that period. There is also an old simple minbar (pulpit) (General Administration of Cultural Heritage, Tourism and Handicrafts of Zanjan Province). The Seyyed Fathollah Mosque is a flat-roofed mosques without a dome and

minaret and with a rectangular plan which has two entrances, a courtyard with pond, vestibule, shabistans, mihrab, Ivanche (small porch) and student's cells. This mosque has been registered in the list of national monuments of Iran (Bimakr, 2017: 13).



**Figure12.**

**The Seyyed Fathollah Mosque (Cultural Heritage of Zanjan)**

**9.The Zeynabiye Azam Mosque:** Is located in Zeynabiye neighborhood of Zanjan and on Saadi Street, Zeynabiye West Street (Figure 13). Not many written documents are available from the history of this mosque. But numerous chest - to-chest quotes have been told about it. One of these cases is that in the past, there was a garden inside the old fortress of Zanjan. Every day, the owner of the garden hears the whining of “Ya Zeynab” from the corner of the garden where Mohammadi roses had grown in it, sometimes even as if a lamp was lit under the flowers. Thus, the owner of the garden decides to turn that part into a Tekyeh and name it “Zeynabiye”. So, the place where the garden was located has been known as “Zeynabiye Neighborhood” ever since. According to Haj Sajjad Ahmadpur, the head of the board of Trustees of The Zeynabiye Azam Mosque, this happened between 1611 and 1613 AD. He says: “As long as the owner of the garden was alive, every year during the days of Muharram and Safar, the mourning ceremony of the leader of the martyrs and the lord of the world's free people was held in that place”. During his lifetime, he bequeathed that after his death, a mourning ceremony should be held every year and its cost should be covered from the garden's income. The holy place was used by believers until 1674 AD as a Tekyeh inside the garden, then it was rebuilt three times, the first time in 1681 AD, Zeynabiye was rebuilt with wooden beams, the second time in 1875 AD, a lady named “Zeynab Khanum” accepted the cost

of converting it into a small, shabistani mosque, and for the third time in 1975 AD, it was rebuilt by the efforts of the people of Zanjan and the lovers of Ahl al-Bayt. Dr. Hoshang Sabouti, a researcher and University professor, says about the architecture of the mosque: “the current mosque has a 142-year history and was built in 1882 AD. The mosque is one of the shabistani mosques in Zanjan with central arches and is an Islamic architectural style and is built with a traditional shell of modern structure”. The Zeynabiye Azam Mosque of Zanjan was registered on July 11, 2011 with number 29961 in the list of national monuments of Iran (General Administration of Cultural Heritage, Tourism and Handicrafts of Zanjan Province). The mourning group of Zeynabiye Azam of Zanjan was registered in the list of spiritual heritage of Iran on January 4, 2009 with the registered number 10 as the tenth item of the spiritual heritage of the country and registered as the first species of the unique aspect of mourning rituals in the list of spiritual heritage of Iran, it was registered in the list of spiritual heritage with the number 722 in the category of intangible heritage during the sixth general meeting of the Supreme Policy Council of the registration of the country on September 10, 2012 (International Quran News Agency).



**Figure13.**  
**The Zeynabiye Azam Mosque (Cultural Heritage of Zanjan)**

**10.The Ishaq Mirza Mosque:** Is located in the old neighborhood of Sarcheshme (located on Taleghani Street or former Zolfaghari Street), on the northern side of the neighborhood (Figure 14). This mosque, with its courtyard and surrounding cells, is one of the Shabistani (Forty-Columns) style mosques. What is remarkable in the architectural and decorative style of Ishaq Mirza Mosque is the multiplicity and diversity of the vaults and arches of its communication spaces. The mosque's shabistan is located on the northern side, with its arches and rib vaults covered with plaster and lancet arches resting on tall and relatively thick brick columns. In this religious building, does not have an inscription was found that shows the date of its construction and the name of its founder, therefore, based on historical inference and negative records, it can be said that Ishaq Mirza was the name of its founder and maybe it is one of his creations or orders. However, in the book "Nasikh Al-Tawarikh" written by Muhammad Taqi Lisan al-Mulk Sipahr, it is stated that this mosque was built by Ishaq Mirza, son of Abdullah Mirza Dara and grandson of Fath Ali Shah Qajar during the period of Naser Al-Din Shah (General Department of Cultural Heritage, Tourism and Handicrafts of Zanjan Province). Since the mosque is built in a significant shape and size, its founder must have been one of the rich and famous people of the city of Zanjan, and due to its style and construction method and its similarity compared to other buildings of the

late Qajar and early Pahlavi, it can be said that the date of its construction corresponds to the mentioned periods. The entrance of the Ishaq Mirza Mosque is decorated with beautiful blue tiles and emphasis on verse 34 of the Surah Noor in thuluth script in white color. The style of tile decoration and the type of bricks used in the construction of the mosque indicate a late date for it. An inscription with the mention of the "Ishaq Mirza Mosque Restoration" dated 1997 on the entrance portal is a sure reason for the novelty of these decorations. There were men's and women's shabistans which are separated by a curtain and surface differences with two steps. Ishaq Mirza Mosque, which was built in the style of Qajar architecture with clay and brick materials, it has a square-shaped central courtyard and a pond in between, porchs and cells around the courtyard, shabistan on the north side with relatively thick brick columns, mihrab and a cistern. The mosque lacks a dome and a minaret, and its only high entrance has a distant view of the religious monument (Abdollahpur Delamani & Rahmati Zadeh, 2018: 7,10). It was registered as one of the national monuments of Iran on August 9, 2000 with the number 2765.



**Figure14.**  
**The Ishaq Mirza Mosque (Cultural Heritage of Zanjan)**

**11.The Abbas Gholi Khan Mosque:** Is located in the old neighborhood of Abbas Gholi Khan in the historical texture of the city of Zanjan, located at the Rasht gate (figure 15) (Zanjan 024 news agency), this mosque is one of the Shabistani style mosques. It has two courtyards without a pond and a beautiful shabistan, whose arches and beautiful and crescent-shaped rib vaults are based on thick circular columns. The decorations of this religious building are briefly decorated with brickwork on the body of the arches and such an mihrab, which is limited by beautiful tiling with Maqali and geometric designs,

which doubles the appearance and beauty of the shabistan (Parchegani, 2004: 221) and on the body of the northern district side of the central shabistan, the date is 1889 AD is engraved, which corresponds to the time of the construction of the mosque during the reign of Mahmoud Khan Ehtesham Al-Saltana (Hazrat Vali Asr Research Institute). The mosque lacks the entrance portal to the courtyard, the porch, the cells, the minaret and the dome, it was registered as one of the national monuments of Iran on August 5, 1999 with the number 2374 (Abdollahpur Delamani & Rahmati Zadeh, 2018: 6,7,10).



**Figure15.**  
**The Abbas Gholi Khan Mosque (Cultural Heritage of Zanjan)**

**12.The Demiriyeh (Demirlu) Mosque:** Is located in the extremity of the southwestern district of Zanjan in the old neighborhood known as “Top Aghaji”, which was considered the end point of the city in the not-too-distant periods, which today, with the expansion of the city, the mosque is almost in

the center of Zanjan and is considered among the central mosques of Zanjan due to its proximity to the Zanjan Bazaar (Figure 16). It is located between the two neighborhoods of “Asgharieh” and “Top Aghaji”.

It is said that this mosque was registered as a heritage during the era of Naser Al-Din Shah (Voice of Zanjan News Agency). The initial quadrangular area with a Tekyeh construction of this mosque was in the form of a function, in other words, a rectangular space, without any index architectural decoration and with context of the Tekyehs style, whose roof was rested on wooden beams. It is known as the “Abbasiye Tekyeh”, today with a height of approximately 70 centimeters in the eastern part of the mosque's shabistan. The date of construction of this part of the mosque (women's courtyard) on part of its external body overlooks the courtyard and main shabistan is attached on a brick body with green tiles dating to 1861 AD. The Demiriyeh mosque is lower than the level of the public thoroughfare and lacks the dome and other architectural components common in the construction of mosques and religious buildings, like

most mosques in Zanjan, to meet the needs of the public and the tastes and facilities of local architects and after the expansion of Tekyes space, it was created over time, therefore, the local architect has only focused on the construction of pillared shabistans (men's and women's) and mihrab. The main shabistan has seven brick columns, its arches and crescent vaults are beautifully decorated in the style of brickwork and the Patkin technique (Corbelling), and therefore unique among the historical mosques of the city of Zanjan. According to the date engraved on the forehead of the mihrab, which is depicted in the main courtyard, the time of its construction probably dates back to 1890 AD, thus with 134 years of age, it is among the mosques of the Qajar period (General Department of Cultural Heritage, Tourism and Handicrafts of Zanjan Province).



**Figure16.**  
**The Demiriyeh Mosque (Cultural Heritage of Zanjan)**

**13.The Agha Kazem Mosque:** Is one of the Shabistan mosques of the Mozaffar Ad-Din Shah Qajar period, one of the most valuable historical mosques in Zanjan, in the old texture of the city (Figure 17) (Ghasemi Andaroud, 2014: 137).

The founder of the mosque was the late “Agha Kazem”, that according to the board of trustees, was also the

first prayer leader of the mosque, and his burial place is in Imamzadeh Seyyed Ibrahim.

Inside the courtyard of the mosque, there is a pond, to the right of which is the Shabistan. At the time of construction, the building had only one wooden double door through which entry and exit to the mosque took place.

The door is now available, on its left leg, dated 1896 AD, which shows the 128-year history of the mosque. The other two entrance doors of the mosque are from the south side of Saadi Street, which was built by Haj Mohammad Alipour Azad, who was an architect, and written around a small door with seven-color enamel tiles dated 1910 AD and his name. The mosque has only a religious aspect and is located next to the Bazaar and slightly below the Rasul-Allah Mosque in Zanjan, being small, being local and being located next to a large mosque like the Rasul-Allah Mosque itself is a reason for the decline in the functioning of this mosque compared to larger mosques. This mosque is of the Shabistani type and lacks any other index elements such as the minaret, the dome and etc. (General Administration of Cultural Heritage, Tourism and Handicrafts of Zanjan Province). The mosque is built with a rectangular plan and made of Brick materials and a plaster facade consisting of four columns and 10 cradle arches, in the form of symmetrical, and includes the mihrab, columns, arches and archway and three skylights in the ceiling. The map is simple and unbroken on the outside and inside. The shabistan is directly connected to the Courtyard by three large doors from the north, without

defining a specific entrance, with only a one-step level difference, and two other doors that seem to have been added later (during restoration) can be seen. On the southern side of the shabistan are two mihrabs, the old (main) mihrab is decorated with tiles, its outer border is made with a row of stones, and in the upper part of the mihrab there is a stone inscription inside a rhombus shaped frame of marble measuring 40 by 36 centimeters with Nastaliq script and the subject of the text is endowment, and its inscriptions are in seven lines and one inscription on the right margin, which shows the date of 1900 AD. Another mihrab is built on the western end of the southern side of the shabistan is made with plaster and brick border. The mihrab was later added to the shabistan complex and two niches were created on the sides of the mihrab. Due to its proximity to the Rasul-Allah Mosque, this mosque lacks of elements the dome, the porch, the minaret and cistern (Abdollahpur Delamani & Rahmati Zadeh, 2018: 6,7,10). (Ghasemi Andaroud, 2014: 135-137). This building was registered in the list of monuments of Iran in 2010 with number 30304 (General Administration of Cultural Heritage, Tourism and Handicrafts of Zanjan Province).



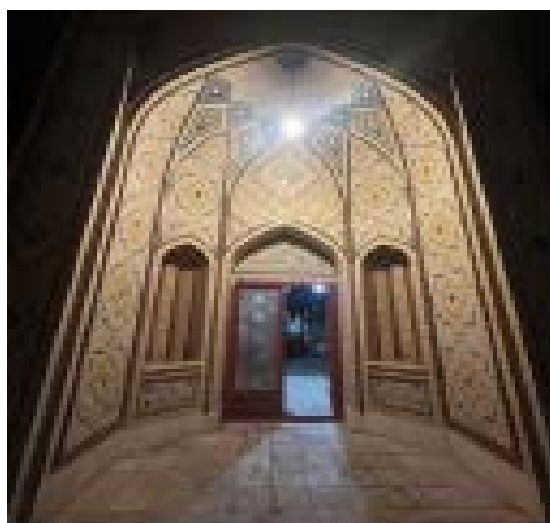
**Figure17.**  
**The Agha Kazem Mosque (Cultural Heritage of Zanjan)**

The Yeri Bala Mosque: Is located in the old texture of Zanjan in the famous neighborhood of the same name, between the street of the coppersmiths Street and Imam Street, inside the alley (Figure 18). In Zanjan, there are two mosques of this name, which are located near each other (Yeri Bala Mosque and Yeri Paieen Mosque), both built in the style of pillared

Shabistan, this style of architecture is common in the Qajar and Pahlavi periods in the city of Zanjan and is very important in the study of the city's architecture and its evolution (Kamali Sarvestani & Soleimani, 2015: 80). The Yeri Bala Mosque has a very elegant and beautiful architecture in the interior.

It was built in 1901, five years before the start of the conditional revolution. Of 1906, by the late Sheikh Hossein Joghini Sojasi, known as "Shahid". This mosque was restored and repaired in 1904, two years before Tudeh party Rebellion in Zanjan, by Mr. Sheikh Yaqub Ali Moghadam. "Yeri" in Turkish means land, land dedicated to the construction of a mosque; the word "Bala" is a conjunction of the meaning and the term lower and upper. What makes this mosque unique among the mosques of Zanjan city is the correct direction of Qibla, which was built by the late Sheikh Ibrahim Hakami. Based on the studies conducted by German engineers in 1933, the Qibla direction of this mosque has been fulfilled in the most correct and precise possible situation. The implementation of very beautiful brickwork decorations with various designs of Khofteraste, Hasiri and Patkin along with an mihrab decorated

with decorative designs in parts of the interior and exterior in the Qajar style makes this building definitely belong to the late Qajar era. Yeri Bala Mosque is built according to the usual pattern in the construction of mosques in this area in the style of Forty Columns. In the middle of the rectangular courtyard is a cistern, which is how its architectural structures are implemented in accordance with the architectural style of the mosque itself, so it is likely that the water cistern mosque was built at the same time. The Yeri Bala Mosque in Zanjan has two courtyards and shabistans, which the central shabistan has a brick facade. The wooden minbar (pulpit) and the doors between the two shabistans have beautiful Gereh-chini patterns that have doubled the historical and artistic richness of the Yeri Bala Mosque in Zanjan (General Administration of Cultural Heritage, Tourism and Handicrafts of Zanjan Province).



**Figure18.**  
**The entrance of Yeri Bala Mosque (Cultural Heritage of Zanjan)**

**15.The Khanum Mosque School:** Is one of the buildings of the Qajar period in the old neighborhood of Fakhim Al-Doulah in the historical texture of Zanjan city (Figure 19). The Jame Mosque of Zanjan is not far from this building, and the Rasul-Allah Mosque, which is one of the most prestigious mosques in Zanjan, is located a short distance from the Khanum Mosque in its West; one of the reasons for the lack of prosperity of this mosque is its location among these two prestigious mosques in

the city that attract the congregation (Arya Heritage news agency). It was built by "master Ismail Banna" on the order of one of the most powerful rich women named "Jamila Khanum Zulfaqari Nizam Al-Adalah. The features of this mosque are having the longest endowment letter in the country, the architectural and artistic masterpiece of the Qajar period, and being decorated with the name of Mosque – seminary school (masjed-ir news agency).

The founder built the building in the form of a mosque school together with a school near her mansion. The Khanum Mosque School is the best represented by the architecture of the Qajar period due to the architectural style used in it, which is exclusively the architectural characteristics of the Qajar period and the way of decoration. The mosque lacks a dome and has two very beautiful short minarets (Torabi et al, 2016: 2-3). The date of the construction of the Khanum School Mosque dates back to 1905 citing the inscription of the entrance portal door of this religious building, which was built at the request of Jamila Khanum, which took her name as "Khanum" from its founder (General Administration of Cultural Heritage, Tourism and Handicrafts of Zanjan Province). Since the Khanum School Mosque was built in the late Qajar period, like most of the sights of Zanjan, it was built in a special way without a dome. The spaces of the mosque consist of a portal entrance with prolific decorations, two short minarets, courtyard, summer and winter shabistans, numerous cells overlooking the courtyard and its decorations are tiling and plastering (Zanjan 024 news agency). The entrance to the mosque is a porch-shaped open area with two short and thick minarets above it, decorated with exquisite brick and tile decorations in blue, yellow, navy blue and turquoise with various designs, and comparable to the minarets of the old Sepahsalar School in Tehran. The entrance is connected to the courtyard of the school mosque through a hall and

vestibule. The vestibule of this building is octagonal, which is stretched in the direction of the north-south axis, as an interface, it connects the outside space to the lower-level courtyard by two steps (Arya Heritage News Agency). The courtyard of the Khanum Mosque is square with chamfered corners and a portico with sharp arcs around it, has a beautiful pond in the middle, along with four tree-planted gardens around it. The introverted architecture of the courtyard is the central core of the building and the arrangement of the spaces, around which there are 12 cells that were built on the northern, eastern and western sides of the complex (masjed-ir news agency). There are two summer and winter shabistans, which the space of the winter shabistan is less, their entrances are placed in the chamfered part in the corners of the court. Inside the shabistan, there is a mihrab with a semi-circular arch, which is built with the prolific decoration of maqali tiles in the form of recesses in the wall (Parchegani, 2004: 219). To emphasize the mihrab, the other parts of the shabistan are simple brickwork (Torabi et al., 2016: 5). The decorations on the porches and the minarets are done in the style of the Qajar period and mostly using yellow, black, turquoise and white colors. Recently this important historical monument has been repaired and restored (masjed-ir news agency). This historical monument was registered as one of the national monuments of Iran on April 30, 1975 with number 1055.



**Figure19.**  
**TThe Khanum Mosque School (Miraszanjan.ir)**

## Examination of spatial characteristics and architectural index elements of the mosques studied

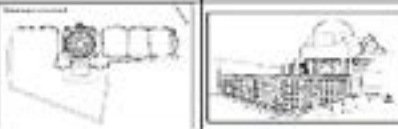


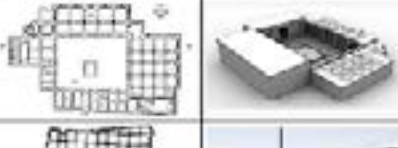


The architectural index elements that can be seen in most mosques are the courtyard, the shabistan, the mihrab, the porch, the dome, and the minaret; however, some mosques lack some elements, such as the Jame Mosque of Sojas and the Jame Mosque of Qorveh, lack a courtyard and a minaret, but all mosques have mihrab, even some mosques have several mihrabs, which can be referred to as the Mirza Mehdi (Ghaemi) Mosque, which has five mihrabs, of course, most mosques have a mihrab in the south of the mosque. The model of the early mosque, the Prophet's mosque, is in the style of a Shabistani or a







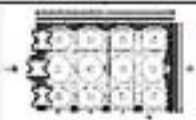

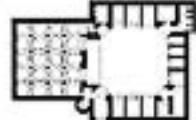

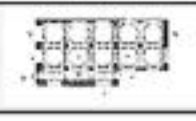









Forty-Columns with simplicity in the building and avoidance of extensive decorations with a rectangular plan and a central courtyard and a shabistan in the direction of the Qibla, which Zanjan mosques, as seen in study cases, are also built in the form of a Shabistani or Forty Columns and often lack dome and minaret, perhaps one of the reasons for which mosques are located in the heart of the Covered Bazaar of the city. Because the city of Zanjan is on the trade route with Azerbaijan and one of the cities of the Silk Road, that is why most of the mosques in this city are located in the heart of the Bazaar and have cells in its courtyard (Abdollahpur Delamani & Rahmati Zadeh, 2018: 3). In Table 4, the index elements of the studied mosques are specified by mentioning their location, plan and perspective.

Table4.

### Index elements of the studied mosques

("\*" indicates the presence and "-" indicates the absence of the desired element) (authors)

| Mosque name                          | Location  | Architectural style                             | Index elements |           |        |       |      | Plan    | Perspective/figure   |
|--------------------------------------|---|---|----------------|-----------|--------|-------|------|---------|--|
|                                      |   |   | Courtyard      | Shabistan | Mihrab | Porch | Dome | Minaret |  |
| The Jame Mosque of Qorveh            | Side of Alborz (ancient road)                           | Sassanid style (four porches and four mihrabs)  | -              | -         | *      | *     | *    | -       |  |
| The Jame Mosque of Sojas             | Milad area, northwest of Kheibar city                   | Domed shabistan, four-arched                    | -              | -         | *      | -     | *    | -       |  |
| Mirza Mehdi (Ghaemi) Mosque          | Bazaar-Panaji (The neighborhood of kashan)              | Shabistani                                      | *              | *         | *      | *     | -    | -       |  |
| Isfahani Mosque                      | Bazaar-Panaji   | Shabistani                                      | *              | *         | *      | *     | -    | -       |  |
| Abbasi (Mehdi) Mosque                | Bazaar e Bala (in the top of Bazaar)                    | Shabistani (Chah-chambari) in native or Abbasid | *              | *         | *      | *     | -    | -       |  |
| The Jame Mosque of Zanjan (Sassanid) | Bazaar Corner (In the past overlooking the city square) | Four Porches                                    | *              | *         | *      | *     | -    | -       |  |

|                  |  |  |   |   |   |   |   |  |   |
|------------------|--|--|---|---|---|---|---|--|---|
| Ilkhanid<br>Agha | This area is the most<br>part of the old<br>part of the city                         | Shahishti  | - | - | - | - | - |    |    |
| Qajar<br>Agha    | Reza-Allah's<br>Shahzadeh's<br>Harem   | Shahishti  | - | - | - | - | - |    |    |
| Safavid<br>Agha  | Imam's house<br>in the area of Bazar-<br>markazi                                     | Shahishti  | - | - | - | - | - |    |    |
| Zandiyeh<br>Agha | Reza-Allah's<br>house in the old<br>part of the city                                 | Shahishti  | - | - | - | - | - |    |    |
| Qajar<br>Agha    | Shahishti<br>neighborhood  | Shahishti  | - | - | - | - | - |    |    |
| Qajar<br>Agha    | Al-Baqi's house<br>neighborhood, the<br>oldest part of<br>the city                   | Shahishti  | - | - | - | - | - |   |   |
| Qajar<br>Agha    | "Taj-e-Allah"<br>neighborhood<br>near the city<br>center                             | Its original<br>structure was<br>a Taj-e-Allah<br>house, but<br>it was changed<br>to Shahishti | - | - | - | - | - |  |  |
| Qajar<br>Agha    | This old house is<br>the site at the<br>beginning of<br>the Shahishti<br>city center | Shahishti  | - | - | - | - | - |  |  |
| Qajar<br>Agha    | The old house of<br>the neighborhood   | Shahishti  | - | - | - | - | - |  |  |
| Qajar<br>Agha    | Fakhri Al-Dowleh<br>neighborhood in<br>the historical<br>texture of the city         | Shahishti-<br>Qajar<br>architecture  | - | - | - | - | - |  |  |

## Conclusion

As the most important component of Islamic architecture in different regions of the world, mosques have many similarities in terms of architecture; however, in each region, they have also received the architectural and artistic characteristics of that region and have found differences from other mosques. Thus, the architecture

of the mosques of each country speaks to the native architectural features of that land (Papadopoulou, 1989: 10). Climate is one of the most influential factors in the final form of the mosque building and is a tool for the architect to create a spiritual space to bring the Muslim closer to his creator

(Davar Mahmoud Aliloo et al., 2023: 9). Zanzan province is a mountainous region (Zanzan City Master Plan, 2019). Due to the cold climate of Zanzan, the native architectural feature of this region is the construction of central courtyard buildings, where the floor of the courtyard and rooms are lower than the level of the alley, the ceiling is usually flat or sloping, the rooms do not open directly to the open space and their height is low, the buildings have small sunny porches with thick walls of materials such as stone and brick and clay and small windows. The crossings are covered with arches and rib vaults corridors. The traditional mosques of these regions, despite observing the general principles of mosque building in Iran, have used methods to adapt to the specific climatic conditions of that region, which include the absence of a courtyard or a small courtyard in the solar front, level the lower than the passages level, the small surface of the openings, the nesting spaces without passing through the open space and direct contact with the outside of the building, domed or flat roofs and summer and winter shabistans. The materials used are stone, brick and clay to increase the mass of the wall and roof and reduce the heat exchange (Davar Mahmoud Aliloo et al., 2023: 8-10). By examining the mosques studied, most mosques belong to the Qajar period and it can be admitted that some of them may have early buildings belonging to the pre-Qajar periods, but the period of their construction or reconstruction is during the Qajar period. By examining the studied mosques, most of them belong to the Qajar period and it can be admitted that some of them may have early buildings belonging to the pre-Qajar periods, but the period of their construction or reconstruction is during the Qajar period. The plans are square or rectangular in shape and have a central and introverted courtyard and are mostly in the heart of the Bazaar and lack domes and minarets. The main construction model of the Qajar mosques in Zanzan is the type of Shabistani, which are built in combination with the domed style, have courtyard and multi-porches, which are the factors influencing the construction of such mosques, the climate and weather characteristics of this region and the correspondence of traditional architectural criteria with it. The mosques of the Qajar period in terms of

their overall design, i.e. having four porches, shabistan, dome, minaret, mihrab, pulpit, etc., are derived from the architecture of the previous and original periods of Iran; However, a series of features can be seen in the architectural style of the mosques of the Qajar period, which makes it distinctive, such as the existence of three large and important entrances in the middle of the three Western, Eastern and northern fronts of the building, which did not exist in the mosques of the previous periods in Iran, but can be seen in the mosques of the Gurkani period in India; there is a main front, the Qibla direction, a dome chamber and three shallower fronts, which can be seen more or less in Indian mosques, such as the Jame Mosque of Delhi; And it shows the relationship of Qajar with India, which caused the influence of the architecture of Iranian mosques from Indian mosques (Kiani, 2004: 101). The remaining works from the Qajar period indicate that the art and technology of architecture and urbanism of this period were formed in three traditional, eclectic and foreign ways according to the prevailing conditions of the time (Bemanian, Shahidi and Esmaeili Marandi 2008). Until the middle of the Qajar period, architecture in Iran had its traditional and indigenous roots and was formed in connection with the principles of traditional architecture, climatic features and geographical conditions (Pakdaman, 1994: 54). The Qajar period mosques are in the Khorasani style with characteristics; rectangular plan, shabistani or forty-column space, the primary materials are raw clay and bricks, without coating and decorations, the use of a single minaret with a circular cross-section in the north of the building and the use of oval arches and Nari (Semi-elliptical curved) arches. In this style, the plan and map of the mosques are Arabic and the building is Iranian (Pirnia, 2019: 142-145). Considering the cold and mountainous climate of Zanzan city, the mosques of this area follow the pattern of the central courtyard, with open ponds and tree-filled gardens in the middle of the courtyard, which is popular in its mosques. Air circulation has not been used to remove moisture. Unlike other cold cities the central domed mosques in the city have not been built, but by using arches with a low rise such as Kalil or Panjohaft, in addition to making the building more popular by

reducing the space, they have made it possible to heat it quickly. Mosques mostly have architectural index elements of the courtyard, the shabistan, the mihrab, the porch, the dome and the minaret, but as can be seen in Table 4, not all of these architectural index elements are necessarily present in all mosques. Some mosques lack some elements, such as the Jame Mosque of Sojas and Qorveh do not have a courtyard or some elements are repeated, such as the Mirzaei Ghaemi Mosque, which has five mihrabs, while most mosques have one mihrab on the south side of the mosque. In the mosques studied, only the Hosseinieh Azam Mosque has all the architectural index elements, which was originally a Tekyeh and after the exile of Reza Khan, With the efforts of local residents and veterans, it was completely repaired and rebuilt and continued its activities as a mosque. The Jame Mosque of Zanjan (Seyyed) also had all the architectural index elements until 1959, but with the change of the portal entrance, its minarets were destroyed and the portal entrance along with the library was replaced. Most of the mosques studied lack domes and minarets, due to the fact that most of these mosques are located in the texture of the roofed rows of the Bazaar, such as the Mirzaei Mosques (Mirzaei Ghaemi and Najafi Mirzaei), Valiasr, Chehel Sotoun and Seyyed Fathollah mosques, which are located in the texture of the Old Bazaar of Zanjan. Some mosques such

as Ishaq Mirza, Abbas Ghali Khan, Demiriyeh, Agha Kazem, Yeri Bala and Khanum Mosques have been used as local mosques. Zeynabiye Azam and Demiriyeh Mosques were first used in the form of Tekyeh, later Zeynabiye Azam Mosque was rebuilt in the form of a Shabistani Mosque, and Demiriyeh Mosque has only changed its use, so its architectural index elements meet the needs of the people of the neighborhood. The Khanum Mosque and the Agha Kazem Mosque are also local mosques, near which are prominent mosques such as the Jame Mosque of Zanjan and the Rasul-Allah Mosque, perhaps the reason for the absence of minarets and domes in these mosques is respect for these mosques. Lowering the level of mosques relative to the main crossings and Bazaar routes as mentioned, it is in terms of the climatic characteristics of the area to make access to water easier and by placing the building inside the ground, the heat exchange is reduced, the ground acts as thermal insulation and the building is more easily heated. The mosques studied were mostly located in the texture of Bazaar and neighborhoods, designed in the common architectural style of the Qajar period, the Shabistani or Forty-Columns style (except for the Jame Mosque of Zanjan, which has a four-porches style), square or rectangular plans are in the form of a central and introverted courtyard, and most of them lack domes and minarets.

### Data Availability

The data underlying the results presented in this paper are not publicly available at this time but may be obtained from the corresponding author upon reasonable request.

### Funding

This study did not receive any financial support.

### Conclusion

<sup>1</sup> Tanbi, meaning tent, is a large room in architecture that is located in the middle of the building and is surrounded by other spaces (Pirnia & Memarian 2019), If the hall did not open to the courtyard and was placed among other rooms, it was called Tanbi (Nilfroshan,

### Conflict of Interest

The results obtained in this research do not conflict with any individual or organization.

### Authors' Participation

All authors contributed equally to the analytical and numerical calculations and have read and approved the final manuscript.

M., 2007, "Iranian architecture (from the beginning of the Qajar period)", Isfahan: Ershad advertising and publicity center, First edition.

<sup>2</sup> Filpoosh is a conical vault to facilitate the

transformation of the square plan to a circle shape to place a dome (Godard et al. 1992: 11).

<sup>3</sup> In terms of shape, it is a central and square space inside the mosque, which is located near the mihrab (Amid Persian Dictionary). A place in the mosque that was specially built for the caliph or Imam to stand there while praying and to be away from the reach of ill-wishers (Hillenbrand, 1997: 446-456).

<sup>4</sup> A Tekyeh is a place where Shi'ite Muslims gather to mourn Muharram (Kuchak Zadeh & Azarm, 2022:13).

<sup>5</sup> Rasmi-bandi: Technical terms used by masons and architects as an act of making interlocking patterns

in construction (Fallahfar1999)

<sup>6</sup> Maaqali tile: Maaqli tile is a type of tiling that is done by making and preparing tiles with very small dimensions and placing these small tiles side by side.

<sup>7</sup> Pishtaq: Literally, it means an arch in front, but in the term, it means a magnificent entrance to emphasize an important building's presence and importance (Andrews & Zomarshidi, 2000: 947).

<sup>8</sup> Decorative arches.

<sup>9</sup> One of the Iranian arches, which is considered the basis of many arches, is the Panjohaft arches (Parsa & Fakhar Tehrani, 1392: 5).

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