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## Finding the Patterns of Indian Mosques Architecture

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### Abstract

India is one of the countries that has had diverse civilizations from the distant past, so in architectural standpoint, this country is rich and varied. The arrival of Islam in India and the formation of Islamic governments led to the formation of a certain type of Islamic architecture in this subcontinent. The architecture of Indian mosques is evaluated as a prominent model of Islamic architecture of subcontinent. This study is based on the assumption that the pattern of Indian mosques architecture is a combination of early Iranian-Islamic architecture of mosques and Indian vernacular architecture. Finding the roots of Architectural features of Indian mosques is the subject of this article. In this paper, the influence of early Islamic mosques' architecture and rich and historical architecture of India on Indian mosques architecture before the arrival of Islam and the architecture of developed Islamic civilizations in the Indian neighborhoods such as Iran, is studied. Generally Indian mosques architectural features include prayer-hall in the Qibla direction, existence of courtyard, Four-Iwan pattern, crusts odd divisions, especially triple ones, presence of mosque in plaza and its position on a Soffeh (in height), access to the mosque entrances by wide stairs, triple divisions of Gonbad Khane in the Qibla direction and the use of transparent porticos around courtyard (Half of the outer crust that has external view). Finding the roots of features of above architecture in this paper will lead to a discovery of Indian mosques architectural patterns.

### Keywords

Pattern Finding, Architecture, Mosque, Temple, India, Iran.

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## Introduction

Indian mosques' architecture has features that propose basic questions such as How was the evolution of mosques architectural pattern in India? What features have the Indian mosques devolved patterns? Where did originate the features of Indian mosques architectural patterns? This article has been developed to answer these questions. The research method is descriptive and analytical. The comparative approach in this paper is used to propose the case studies and discuss their characteristics. In order to find the roots of Indian mosques architectural features the case studies were selected among three Indian vernacular architecture and early Islamic Iranian and Indian mosques, and their features are the basis of extracting and analyzing the features. Ajanta, Ellora, and Alfanta temples were selected from the pre-Islamic vernacular architecture in India, Al-Masjid an-Nabi (PBUH) from the basic architecture of the Islamic era, "Fahraj Mosque" as an early Iranian mosque and "Isfahan Jame mosque" as a complete sample of Iranian mosques. In order to study the evolution of mosques in India, Examples such as "Ajmer Sharif mosque" as the sample of early mosques, "Ahmedabad Jame mosque" as a pattern of emerging mosques in India, and "Delhi Jame mosque" as a perfect example of Indian mosques architecture, were selected and their features are given on the title of Indian mosques architectural features conclusion. At the end, a comparative study and analysis of the inferential features of Indian vernacular architecture, the early Islamic-Iranian mosques and Indian mosques examples are given.

## Finding the roots of architectural features of Indian mosques

In this section, in order to understand and find the roots of Indian mosque architecture, at first the India vernacular architecture and some examples of Indian temple architecture will be introduced and their characteristics will be summarized. Then the architectural features of early Islamic mosques and then the architectural features of mosques in Iran

will be introduced. Evolution of Indian mosques architectural features will be identified in three early, middle and developed periods during the time.

## Indian vernacular architecture

Ajanta Caves is from in second century BC and has 29 Buddhist temples (Fig. 1). Ellora Caves are from in sixth and tenth centuries and include twelve Buddhist caves, seventeen Hindu caves, and five Chinese caves. Placing on natural and artificial height is Ajanta and Ellora caves architectural features. Triple divisions, accessing by huge stairs, existence of specified entrances and stone statues and decorations are the other architectural features of caves (Fig. 2 & 3).

Alfanta Temple- Hindu Cave-Temples in Alfanta (from sixth century AD) have architectural features such as triple divisions, Locating on a (natural) height and Greatness orientation. Perhaps the finest achievement of Hindu art can be seen on the Alfanta Island that in sixth century AD, its craftsmen (the monk's artist) excavated inside a peak and created a huge columned hall to the extent of three hundred square meters (inside the cave). Arriving at the temple, visitors will stare into it through the rows of heavy columns and after acclimating with dark, they will see three giant heads that gradually appear on opposite wall. In these heads, Shiva has been manifested as Mahadeva, the God of gods and visualization of creativity, survival and destruction power. Immediately after seeing the heads that have almost 420 cm height from the temple surface, an image of power will be induced to the viewers who seem more dwarfs in comparison with them (Gardner, 1995: 689); (fig. 4).

Kandariya Mahadeva temple was built in Khajuraho in the eleventh century and it is a Hindu Temple (Albanese, 30). Locating on an artificial Soffeh is one of the architectural features of this building. Other features are accessibility by wide stairs, specified entrances, stone status and decorations (Fig. 5 - 7).

Konarak temple- Built in the thirteenth century; Konarak temple is a Hindu Temple. This temple was

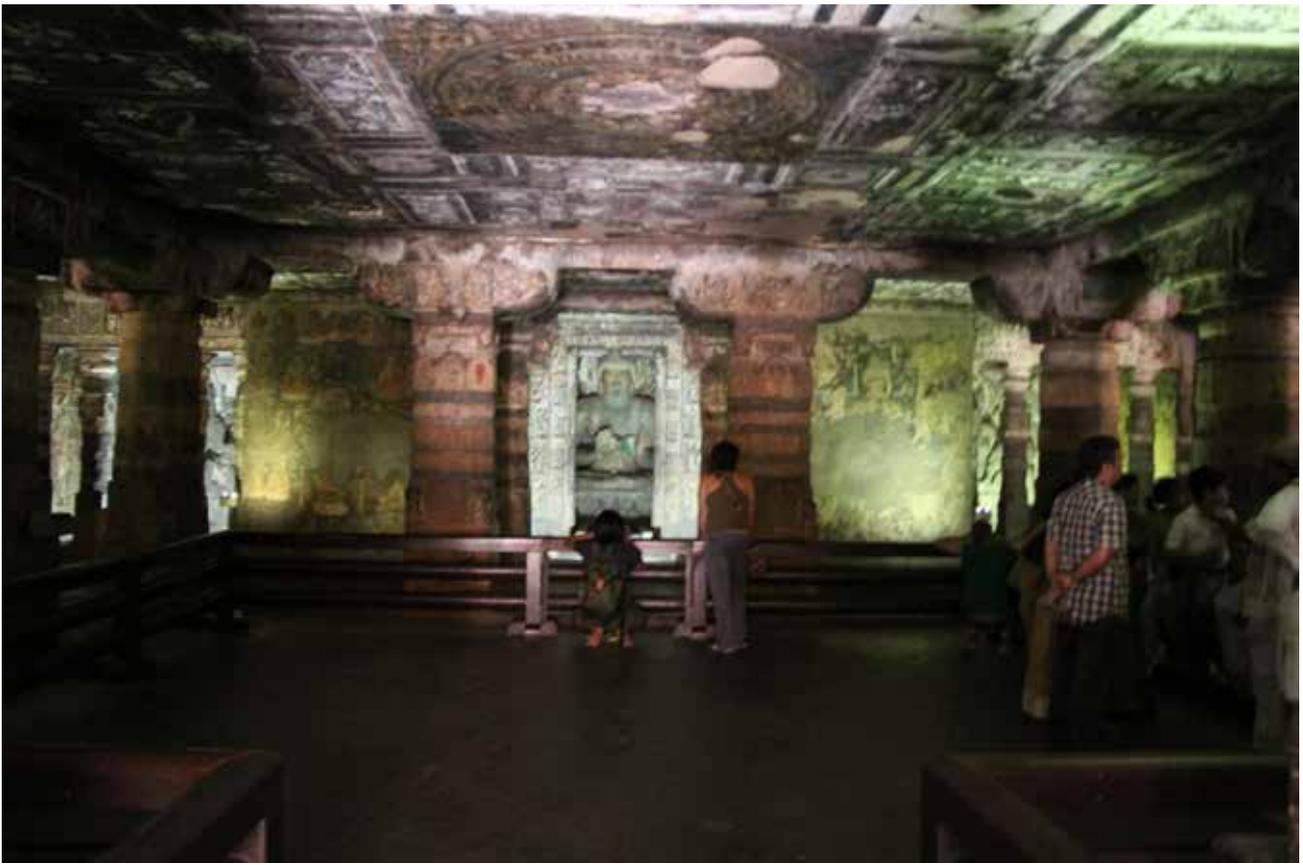


Fig. 1. Triple divisions in one of the Ajanta Caves, the second century BC. Photo: Dizany, 2012.



Fig. 2. Construction of temples on natural height and creating the staircases, Ellora Caves, between the sixth and tenth centuries AD. Photo: Dizany, 2012.



Fig. 3. Locating on Soffeh, specified entrances, stone statues and decorations in the Ellora temples, between the sixth and tenth centuries AD. Photo: Dizany, 2012.

constructed on an artificial Soffeh and access to it, is possible by using wide stairs and specified entrances in three sides (Fig. 8 - 10).

Primary samples of Indian temples were created like caves inside the mountains. Locating in height

and accessing by huge stairs and triple divisions of interior spaces, columns and heads are cave-temples features. During the time, late Indian temples, inspired by cave temples, were made on natural or artificial Soffehs and wide stairs were created to



Fig. 4. Triple divisions of Shiva as Mahadeva (creativity, survival, and destruction), a temple cave, Alfanta Island, sixth century AD. Source: Gardner, 1999: 692.



Fig. 5. Temple entrance and side facades, Kandariya Mahadeva, eleventh century. Source: www.education.asianart.org.



Fig. 6. The side facades of the Kandariya Mahadeva Temple, eleventh century. Source: www.tiuristlink.com.

access to them. Specified entrances are the other features of these temples. Using statue carved from rock in various human, animal, and imaginary forms are the prominent features of Indian temples.

### Early Islamic mosques

Al-Masjid an-Nabi (PBUH) in Madina is an early mosque (Figure 11). “The Prophet’s Mosque in Medina is the first built place in Islam after Quba mosque” (Pirnia, 2003:136). This space was in Mecca direction (is toward Mecca) and has a columned roofed space with columns (prayer-hall), yard, rooms for living and Soffeh. The mosque has had a central position. The mosque has a prayer-hall in the Qibla direction and courtyard in which entrances were located around it.

### Iranian mosques

Fahraj Mosque of Yazd is an early Iranian mosque. The mosque has a prayer-hall in Qibla direction and a courtyard. The architectural body of this mosque is originated in Iran pre-Islamic architecture (Fig. 12).” One of the most original Khorasani style buildings is Fahraj mosque. This mosque may be the oldest mosque in the world built in Iran that has constructing features of Parthian-Sassanid style” (Pirnia, 2003: 173). The mosque is decorated with pre-Islamic architecture. “Plaster Motifs and its tendrils are as same as Kasra Palace Motifs in Ctesiphon.” (Ibid.139). Isfahan Jame Mosque is a perfect example of Iranian mosques (Figure 13) that always has a central location in the city and is beside the market (Bazaar). Isfahan Jame Mosque as a perfect example of Iranian mosque has four-Iwan towards the courtyard. “The first plan of the mosque was in Boomoslemy style (columned prayer-hall) built in 156 AH and excavations made its position clear. In the fifth and sixth centuries, fundamental changes occurred in the mosque architecture and converted it into the four-Iwan mosque. Thus the integrated and simple space of prayer-hall and courtyard were torn apart with Iwans and two domes. So having four-Iwan became one of the basic features of building mosques in Iran.” (Ibid: 144).

“The structures of forms of Isfahan Jame Mosque space elements were compared with some pre-Islamic monuments. The existence of courtyard as a model of Iran’s Elamite ancient monuments has

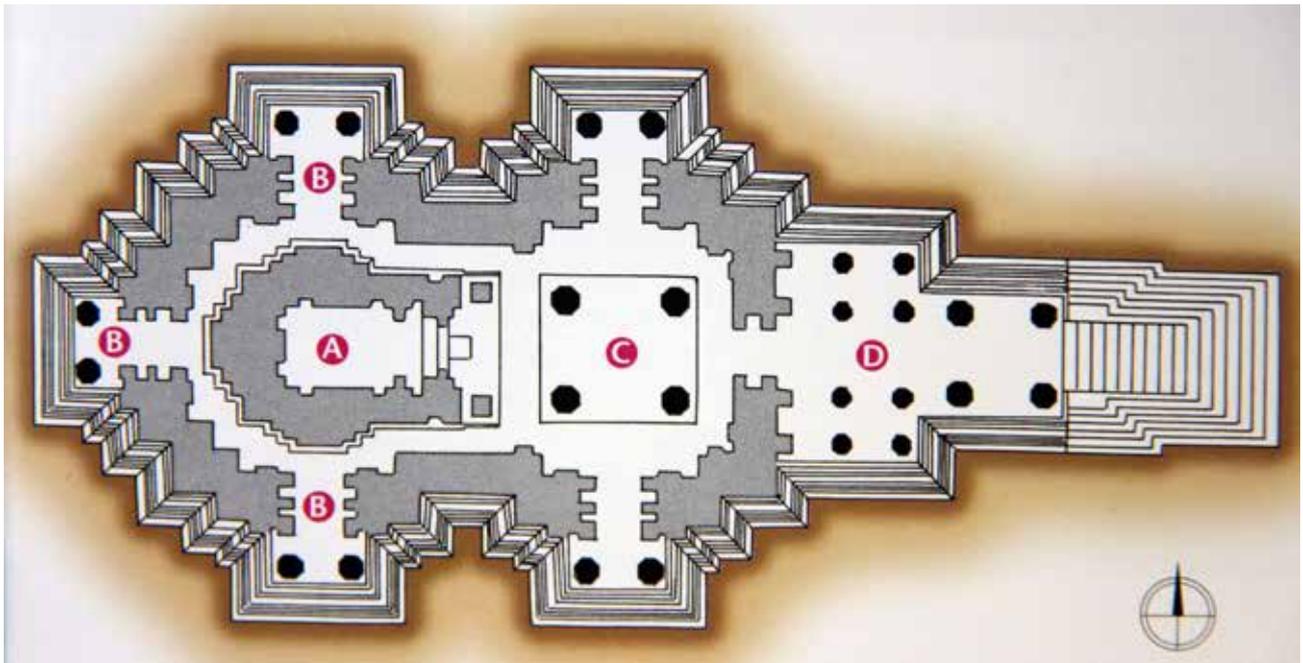


Fig. 7. Kandariya Mahadeva Temple's plan, eleventh century.  
Source: Albanese, 2000: 31.



Fig. 8 & 9. Entrance and general facades of Konarak Temple, thirteenth century. Source: Albanese, 2000: 65.

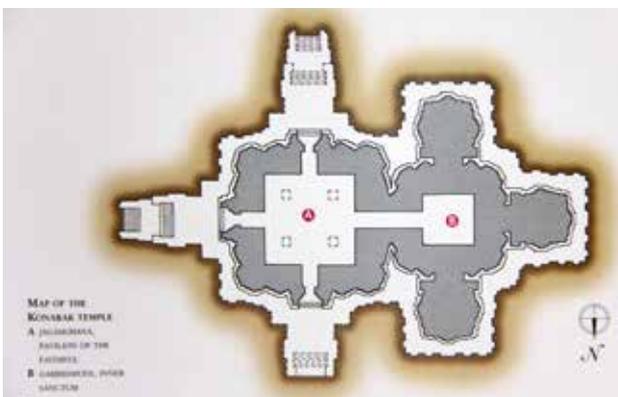


Fig. 10. Konarak Temple plan, thirteenth century.  
Source: Albanese, 2000: 64.

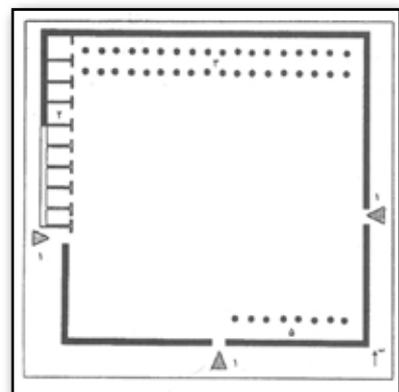


Fig. 11. Medina mosque plan, 622 AD. Source: Pirnia, 2003: 136.

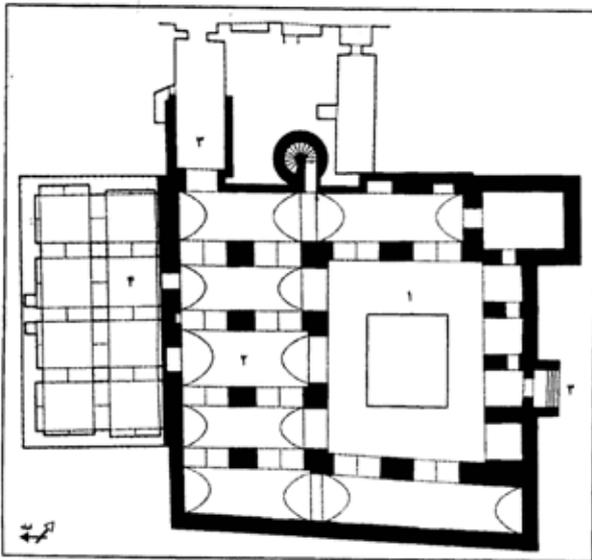


Fig. 12. Fahraj Mosque plan, 672 AD. Source: Pirnia, 2003: 138.

continued in later periods. Columned prayer-hall were inspired from columned halls of Iranian-style architecture. Iwan spaces were formed independently from the Parthian era architecture in Iran and Iwan toward courtyard existed in this era. The structure of Mosque's Gonbad Khane form comes from fire temples but its direction was changed toward Qibla. Manar exists in Iran architecture as an ancient element. Construction and material technology at the beginning of the Islamic era were similar to vernacular architecture that has had huge improvements then. Therefore, the structure of the form in Isfahan Jame mosque has emerged from pre-Islamic vernacular models of Iranian architecture" (Dizany, 2013: 16).

### The evolution of mosques in India

Ajmer Sharif Mosque is an early Indian mosque (Fig. 14 and 15). "According to the inscription on the mosque's Mehrab, it was built in Jmadi Al-sanei 595 / March-April 1199 in Qutb al-Din Aybak era. This mosque which was built on the looming of one the hills in Ajmer path consists a large square with seventy-nine meters length on each side. In fact, this building is constructed of the materials remained from the previous temples" (Blair, 2011: 389). This mosque is located on a natural Soffeh and concludes

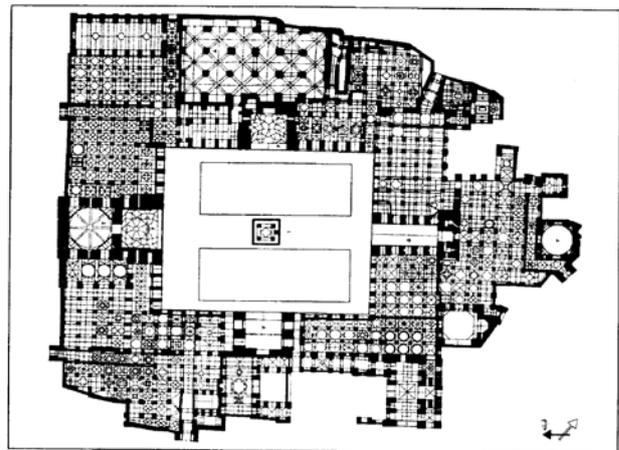


Fig. 13. Isfahan Jame Mosque, 1045 AD. Source: Pirnia, 2003: 179.

Mehrab and prayer-hall in a Qibla direction. Physical features of this mosque architecture such as columns and coverage come from pre-Islamic patterns (Fig.16). The stone decorations are also related to pre-Islamic period; therefore, there is a doubt of using temple materials in the building of the mosque. Ahmedabad Jame mosque is one of the middle Indian Mosques (Fig. 17 and 18). "Mozaffar Shah's grandson, Ahmed I (Reigned in 1411-1142) strengthened his possessions and moved his capital to the old town of Asaval and named it Ahmedabad. During his reign, a period of unprecedented architectural activity began and only in the capital at least fifty mosques were built. The most beautiful one was the Jame mosque (826/1423). The mosque is composed of a large apron (75×66 meters) and the rows of vaults in three directions. In the fourth or the Qibla direction a beautiful old carved facade existed. Prayer-hall (64 × 29 m) contains more than three hundred narrow columns that fifteen huge domes could be seen above them and at the top of domes a series of small domes were built" (Blair, 2011: 401). The mosque has a central location in the city and alongside the market (Bazaar). The building is located on Soffeh and has staircases in both directions. The mosque has three separated entrances in the main directions and tits prayer-hall in western part has an inconsistent entrance with its interior space. The building entrances were specified in three outer directions and it has a shallow portico around



Fig. 14. Prayer-hall in Qibla direction, Ajmer Sharif Mosque. photo: Dizany, 2012.

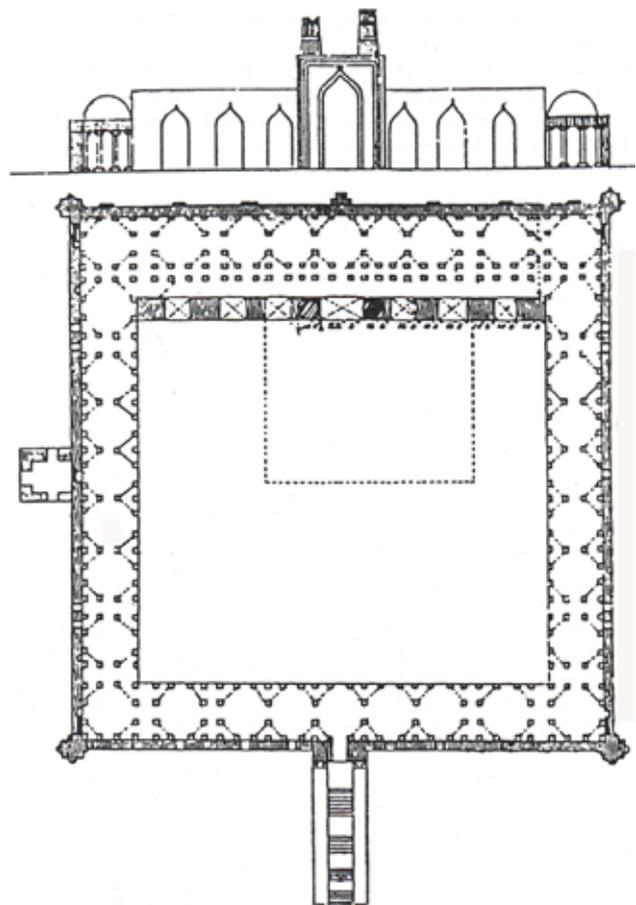


Fig. 15. Western facade and general plan of Ajmer Sharif mosque. Source: Blair, 2011: 412.

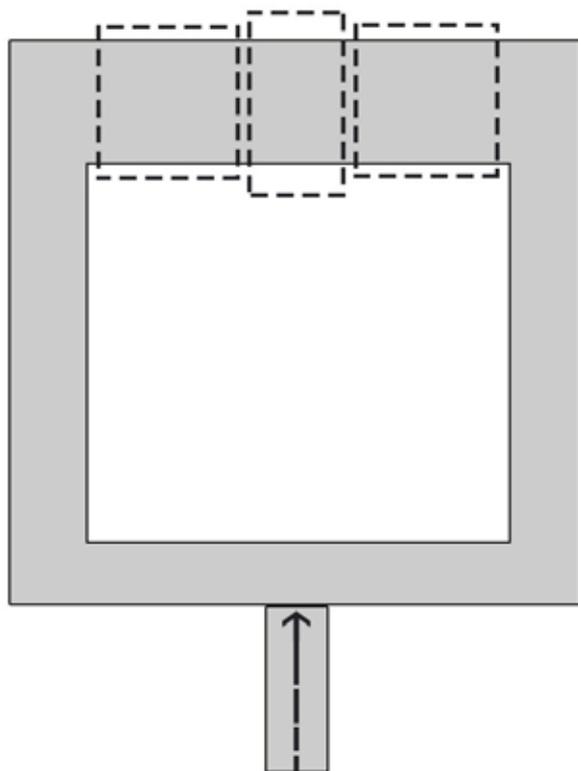


Fig. 16. Triple divisions diagram of prayer-hall in Qibla direction and locating on the natural platform in Ajmer Jame mosque. Source: Dizany, 2012.

the courtyard without a specified facades (Fig. 19).

The perfect example of Indian mosque is Delhi Jama mosque (Shah Jahan mosque). The mosque was built in 1644-58 AD on the order of Shah Jahan (Michell, 2001: 270). Indian mosques architectural features are in their perfect extent in here (Figures

20 and 21). The mosque was created on a high Soffeh overlooking the market and the surrounding neighborhoods. Bidirectional specified entrances were in three main directions and great stairs used for access to them(Figure 22).

During the Timurid Empire, Indian architects and builders and sculpt were influenced by Iranian architectural and buildings styles and performed them. As it was said, existence of dome over Maghsore (Cella), four-Iwan pattern, numerous inscriptions and a long inscription on prayer-hall facade, existence of pairs of symmetric Minaret, pool in the middle of the apron and emulating Iranian architecture motifs such as Karbandi, all show the influence of Iranian mosques on Jahan Nama Jame Mosque (Shah Jahan) (Nazari and Nikzad, 2014: 48). The triple divisions also exist on prayer-hall wall and



Fig. 17. Prayer-yard in Qibla direction in Ahmedabad Mosque.  
Photo: Dizany, 2012.



Fig. 20. Prayer-hall of Delhi Jame mosque in Qibla direction (Shah Jahan). Photo: Goran Erfani, 2012.

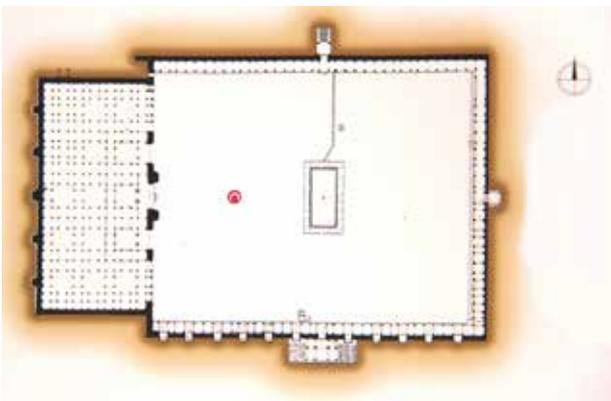


Fig. 18. Plan of Ahmedabad Jame Mosque.  
Source: Albanese, 2000: 147.

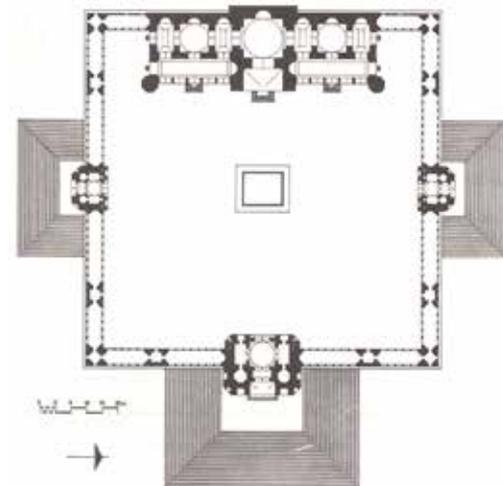


Fig. 21. Delhi Jame mosque plan (Delhi, Shah Jahan Abad, Jame Mosque, the ground floor plan). Source: Koch, 1994: 119.

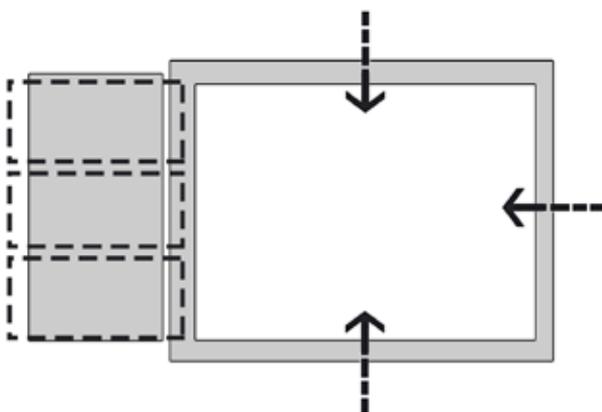


Fig. 19. Triple divisions diagram of prayer-hall in Qibla direction and triple accesses in Ahmedabad Jame Mosque. Photo: Dizany, 2012.

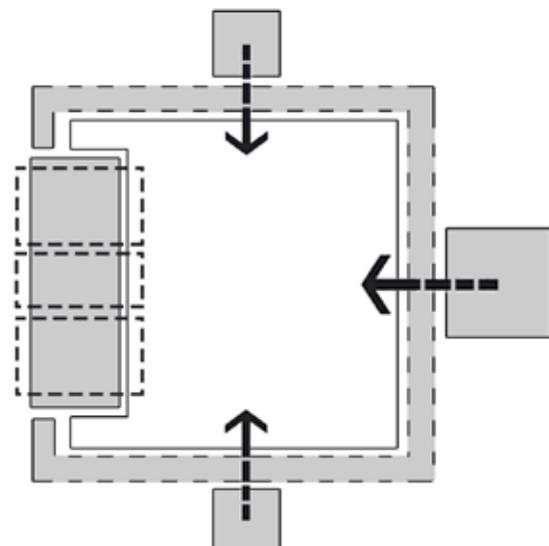


Fig. 22. Triple divisions diagram of Gonbad Khane and prayer-hall in Qibla direction, bidirectional specified triple entrances, and transparent portico in Delhi Jame mosque.  
Source: Dizany, 2012.

its domes. In this building, the four-Iwan pattern was used to locate the specified entrances such as Iwan, and shallow porticos around courtyard connected them together. Locating on Soffeh and overlooking the surrounding scenery makes the external walls of porticos around courtyard be removed and create a broad vision from porticos around the courtyard.

### **Analysis of patterns of mosques architecture in India**

In this section, the features of mosques pattern in India were compared with the architectural features of Indian temples, the architecture of Islamic early mosques and architecture of Iranian mosques (Table 1). By evaluating the mentioned samples the architectural features of Indian temples adapted from Indian mosques includes triple divisions, locating on a Soffeh, using the stairs to show greatness and using similar materials in decorations, In a way that the Indian mosques have triple divisions on Gonbad Khane in Qibla direction and odd divisions in crusts, especially the triple divisions, is seen in Ajmer Jame mosque and Ahmedabad Jame mosque. The Indian mosques are also locating on Soffeh (in height); therefore it creates specific glory and greatness and transmits it to the audience. Accessing to the Indian mosques entrances is by using wide staircases in which this feature along with locating on Soffeh

and specified entrances, create a sense of Greatness in Indian mosques. Mosques stone decorations include Quranic verses, stories, poems, dedications and so on. Stone perforations are used as a skylight, geometric and herbaceous motifs and paintings such as flowers and paisley and arabesques. Their similar features to the architecture of Early Islamic mosques patterns are prayer-hall in Qibla direction, entrance to the courtyard and the mosque central position. Most of the Indian mosques are locating in plazas and beside the markets (Bazaar). Prayer-halls are in the west of mosque in Qibla direction. Features that adapted from Iranian mosques architectural pattern include the four-Iwan pattern that can be seen as bidirectional specified entrances around the courtyard of Indian mosques. Other adapted features are the courtyard, the central location of the mosque and accessibility to market (Bazaar). Most of the Indian mosques often have the courtyard which shallow porticos surrounded it. In some mosques like Delhi Jame mosque the outer wall of the porticos has been removed and due to the placement of Indian mosques in height, a wide view is provided to enjoy the scenery around there. Indian mosques have specified entrances like as Iwan around the courtyard in which this bidirectional entrances are toward courtyard and outside the mosque (Table 1).

### **Conclusion**

This study showed that architectural features in basic mosques in India are a combination of Indian temples architecture features and patterns of early Islamic mosques such as locating based on Qibla direction, removing sculptures and motifs of human and animals. In another word, in the early eras, Indian mosques patterns were based on using the combination of the architecture of Indian temples pattern and early Islamic mosques. Indian mosques architecture had benefited from architectural features of its Islamic civilization neighborhoods, especially Iranian mosques, such as courtyard pattern and four-Iwan plan of mosques, in its evolution. Therefore, Indian mosques achieve a new and mixed model in the architecture of Islamic world with its unique model by merging ancient features of its vernacular architecture and early Iranian-Islamic mosques. These features include shallow and transparent porticos around the courtyard to enjoy surrounding scenery, bidirectional Iwans with the four-Iwan plan around the courtyard and Islamic motifs such as geometric motifs, flowers, paisley and arabesque with stone materials which become a specific model for Indian mosques architecture.

Table1. Features adapted from Indian vernacular architecture, early Islamic-Iranian mosques in architecture of Indian mosques and creating features in Islamic era. Source: author.

	features of Indian mosque pattern	Analysis of architectural models			
		Early Islamic mosques	Iranian architecture	Indian architecture Before Islam	The result of Indian Islamic architecture
1	Mosque location in center and beside Bazaar	*	*		
2	Prayer-halls in west side of the mosque	*			
3	Triple divisions of Gonbad Khane			*	*
4	Odd (triple) divisions in crusts			*	*
5	Locating on Soffeh			*	
6	courtyard	*	*		
7	Transparent and shallow porticos				*
8	Bidirectional Iwans (the main pattern is Iwan in Iranian architecture)	*			*
9	pattern of Four-Iwan plan		*		
10	Mosque entrances with wide staircases			*	
11	Stone decorations			*	*

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