
The role of Iranian architecture on the architecture of Egyptian mosques

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ABSTRACT

The construction of mosques holds exceptional importance within Islamic architecture, and these places can be considered as one of the most significant manifestations of Islamic art and architecture. Since there have been fewer studies specifically focusing on mosques in Egypt during a particular period within Islamic countries, our research aims to investigate how the architecture of mosques during the Mamluk period in Egypt was influenced by Iranian architecture. To achieve this, a number of mosques relevant to the studied period were examined using a descriptive-analytical approach. Based on the research findings, the utilization of Iranian architecture in Egyptian mosques demonstrates its cultural and artistic influence among Islamic countries. Considering that Mamluk architecture represents a historical period in the Islamic world and its outstanding contributions are evident in valuable structures such as mosque architecture, it is notable that as we witness changes in governing authorities throughout Egypt's historical eras, we also observe corresponding transformations in mosque architecture. Ultimately, it can be said that mosque architecture in Egypt has evolved in accordance with the worldviews of governing powers in each era, with the Mamluk architecture heavily influenced by the architecture of the Seljuk period in Iran.

1. Introduction

The civilization of ancient Egypt, one of the most influential and glorious civilizations of its time, has a large number of surviving artifacts that are considered among the most famous and amazing historical monuments in the world. Egypt, from the advent of Islam until the end of the Ottoman era, is still regarded as one of the masterpieces of world architecture (Tawfiq Ahmad Abduljawad, 1987). Temples have always held a special place among the inner organs of every city and village worldwide and are more conspicuous and prominent than other organs, hence usually the position of worship sites is located at the center of settlements (Pirnia, 2008). The construction of mosques holds tremendous importance in Islamic architecture; because mosques serve as places of worship, congregation, and resolution of many disputes as well as many ceremonies, they have always been of significant attention and respect. Skilled craftsmen and artists endeavored to play a role in strengthening and beautifying the spiritual space with all their skills and expertise, hence, the mosque is a collection of various arts that together create a unique space and place. The space and place should be suitable for establishing a relationship between God and His creation, a place where the human mind is not engaged in focusing on oneself instead of focusing on God amidst the splendor and majesty, adornment and decoration. Since mosques were considered as social centers and shelters for Muslims to live in Islamic lands (Hog 1994), the mosque was the most important social unit in an Islamic city. Many cultural and social activities take place in the mosque; it serves as a venue for important urban gatherings on specific days, public ceremonies, visits, religious rituals, and so on. The diverse social functions of the mosque combine individual worship with collective worship, addressing individual needs alongside communal needs in Islamic society (Mahdavinejad and Moshayekhi, 2010). Therefore, the mosque can be considered the most central, valuable, and pivotal element crystallizing the civilization of Islamic society. The spread of Islam in the Middle East, Central Asia, and East Asia was accompanied by the construction of mosques in these cities; the people of these cities embraced Islam one after another, converting to Muslims. The consequence of this trend was the emergence of Islamic elements in these cities, with mosques being the most important of them. Mosques served as significant indicators for understanding the religious and spiritual inclinations of the people of a city, to the extent that it can be said that an Islamic city cannot be conceived without the presence of a mosque. Burckhardt introduced the construction of mosques in ancient cities as an indication of the inclination of the city's people towards Islam. He states, "Some ancient cities have become Islamicized by establishing new religious centers of social activity in them, such as mosques and... or entities that independently qualify as cities and naturally new centers of growth and development emerge within them; they have become Islamicized" (Burckhardt, 1986). It can be said that the first manifestation of Islamic art was the mosque. Therefore, focusing on the architecture of mosques is essential to understand the art of the Islamic era. Since less attention has been paid to the architecture of Egypt in an Islamic ruling era, understanding mosques in Egypt according to Islamic ruling eras has been chosen as the subject of this research, which will be further discussed. Therefore, based on Islamic ruling eras, the architecture of mosques in Egypt can be divided into six main periods: the first being the early Islamic era in Egypt, the second being the Tulunid dynasty era, the third being the Fatimid era, the fourth being the Ayyubid era, the fifth being the era of maritime powers (Mamluks), and the sixth being the Ottoman era. Regarding previous research, it can be said that mosques in Egypt, as one of the elements of Islamic architecture, have been examined by some researchers in the field of Islamic architecture. Al-Rafaei Anwar (2005) conducted a research on the history of art in Islamic lands, and Hossein Soltanzadeh and colleagues (2015) examined the typology of traditional mosque structures in Egypt based on Islamic ruling eras. In another study, Zahra Habibi and colleagues (2022) discussed architecture as a political expression: the influence of contexts and political goals on the

architecture of the Mamluk period in Egypt. In this research, we will examine Islamic architecture in Egypt influenced by Iranian architecture during the Mamluk era, with strong focus on the question of how much influence did Iranian architecture have on the architecture of mosques in Egypt during the Mamluk era.

2. Research Methodology:

This research delves into the examination of the historical aspects of architecture and the structural features of mosques in Egypt during the Mamluk ruling era using a descriptive-analytical methodology. The description of the structure, the evolutionary process of mosques, and the points of convergence and divergence of each mosque in relation to Iranian architecture have been studied. In other words, the current study seeks to explore the impact of Iranian architecture on mosques during the Mamluk era of Islamic rule, by utilizing historical and architectural sources.

3. Research Findings:

3.1. Iranian Architectural Elements in Mosque Designs

- **Chahartaqi (Four-Iwans Design)**

Chahartaqi is a space covered in the form of a dome supported by four sturdy pillars. Although various interpretations such as spiritual enlightenment and symbolic movements express aspects of this space, particularly in Islamic architecture (Ardalan & Bakhtiar, 2003). With advancements in engineering knowledge in the construction of Chahartaqi, this space found its place in larger structures and buildings such as large fire temples and Sasanian palaces. The Firuzabad fire temple, where three Chahartaqis are built side by side, and also the Sarvestan palace are examples of the presence of this space in pre-Islamic Iranian architecture. After the acceptance of Islam by Iranians in the early Islamic centuries, some Chahartaqis, by closing the opening to the south, provided a suitable space for worshipers (Helen Brand, 1998). Initially, in the Khorasani style and following the model of the Prophet's Mosque, the Shabestani design became common in mosque architecture. However, gradually, during the Seljuk period and in the Razi style, Chahartaqi was incorporated into mosque designs, and the dome, although with a delay, entered Iranian mosque architecture as an Iranian architectural element from then on. This was achieved by eliminating some of the columns of the Shabestans.

- **Gonbad (Dome)**

Gonbads are usually the most significant covering element of a structure (Memarian, 1988), and the dome is the most prominent architectural element in Iran. When it comes to the evolution of domed structures in Iran from the beginning of the Sasanian era to the present day, there is little doubt. It is remarkable that the shape and type of the initial four-sided rooms of domed structures indicate a fully evolved form (Hof, 2010). From the 5th century AH, dome chambers gradually entered mosque constructions. The presence of dome chambers in mosque structures was of such importance that even in the case of older mosques, they were implemented by removing several rows of Shabestan columns and adding domes to them. For instance, Khwaja Nazam al-Mulk, the famous vizier of the Seljuk era, removed several rows of Shabestan columns from the Jameh Mosque of Isfahan and replaced them with dome chambers (Pirnia, 2010). During the Seljuk period, after the construction of the Taj al-Mulk and Nazam al-Mulk domes in the Jameh Mosque of Isfahan, dome chambers found their place as a primary and model element in Iranian mosque designs. From then on, various types of domes in terms of dimensions and size, coverage, arch type, as well as interior and exterior decorations, showcased themselves in Iranian mosque architecture. The Sheikh Lotfollah Mosque in Isfahan can be considered the pinnacle of beauty and intricacy in constructing a four-iwan domed structure both in form and meaning. The evolution of this architectural space from the Niasar four-iwan to the Sheikh Lotfollah Mosque showcases

the flexibility, stability, and transformation of one of the most important and symbolic spaces in mosque architecture, highlighting the value of this space (Ardalan & Bakhtiar, 2003).

- **Iwan (Veranda)**

An iwan, as a semi-open space that brings along with it diverse and valuable experiences of spatial perception and understanding of nature, is worth examining in terms of form, dimensions, and position in architecture (Mahmoudi, 2005). The iwan can be considered a spatial filter and a shared space between two open and enclosed spaces, which is a characteristic of the architectural style of the iwan (Pirnia, 2003). The iwan could serve as a central entrance to the Shabestan or could essentially be used as the Shabestan itself (Helen Brand, 1998). The iwan of Ctesiphon, Qal'eh-ye Dokhtar, and Sarvestan Palace provide excellent examples of this composite form where the iwan is a distinctive element in the structure. The four-iwan layout, which became common in mosque designs after Islam, can be observed in the Palace of Ashur from the Parthian period. The iwans of the Palace of Ashur were constructed in two stages over the course of the 1st and 2nd centuries CE around the courtyard (College, 2009). The presence of the iwan, after Islam and during the Seljuk period, between the prayer hall of the mosque and the courtyard, was a second step after adding dome chambers to mosque layouts to provide directionality and strengthen the plan of mosques (Motadayen, 2007).

- **Decorations**

Decoration plays a significant role in Iranian-Islamic culture and is highly esteemed in various aspects and contexts of life, portraying variable meanings and ranks that are commonly recognized in Iranian culture, literature, and social discourse. Furthermore, in Islamic wisdom, decoration is considered to enhance the nobility and truth, with embellishments such as brickwork, plastering, tilework, stonework, carving, mirror work, and painting prevalent throughout all Islamic eras (Kiani, 1997).

3.2. The Mamluk Dynasty in Egypt

The Mamluks, or enslaved soldiers, were members of one of the Mamluk armies established during the Abbasid Caliphate era, who later gained political control over several Muslim states. After the Ayyubids, the Mamluk generals utilized their power to establish a new dynasty called the Mamluks, which ruled over Egypt and Syria from 1250 to 1517 AD. The Mamluk sultans, of Turkic descent, marked one of the most prosperous periods in the history of these two lands during their long reign (Edmund Bosworth, 1992). The Mamluk government, which held sway over the region for nearly three hundred years, was an organized and magnificent regime that, despite internal wars and political upheavals, managed to establish a brilliant civilization whose remnants still endure in Egypt and Syria, particularly due to the emphasis of the rulers on knowledge and art. From a military perspective, the Mamluk sultans, with exceptional competence and integrity, managed to confront and prevent the massacre of Muslims by resisting the two major allies, the Western European Crusaders and the Mongols, who threatened Syria and Anatolia, as well as Palestine and Egypt, following their conquest, through fifty years of fierce battles (Adham and colleagues, 1984).

- **Architecture During the Mamluk Rule**

The correlation between power and architecture indicates that the size of commemorative structures built by dynasties corresponds to their power. From the era of ignorance to the rise and spread of Islam, more notably in regions under Muslim dominance, significant historical architecture has been manifested. In Egypt, architecture defines the identity of each dynasty. Mosques and other architectural structures represent the most important remnants of the Mamluks in Egypt. The Mamluk sultans engaged in constructing magnificent mausoleums and mosques,

emphasizing their architectural style. The minaret was constructed in three tiers - two square tiers and one octagonal tier, with a cylindrical minaret placed at the entrance. The distances between these tiers are separated by elaborately adorned iwans that are placed on the front cornices. This minaret, located at the entrance to the doorway, featuring a Romanesque design and decorative elements beneath, signifies Fatimid architecture. The plaster decorations of this structure are exceptionally beautiful (Helmi, 2020).

• **Key Elements of Architecture in Mamluk Mosque**

The Mamluk dynasty was one of the greatest empires that utilized art, using architecture as a means to showcase their power over their territories.

Table 1- Important Elements of Mamluk Mosque Architecture (Source: Soltanzadeh and Ahmadi, 2015)

Architecture Features	
Shabestan	Placed around the iwans located in the courtyard.
Courtyard (Sahn)	Used as the main open space and central focus of the building. Four iwans surround the courtyard.
Entrances	At the beginning of this period, the entrances were transformed into octagonal structures indirectly. Worshippers, after passing through the entrance vestibule and then the octagonal entry, would face the qibla direction on the main axis of the mosque, enter the courtyard, and with this structure, a greater emphasis was placed on hierarchy. (Abdul Rahman al-Qadhi Shaukat Muhammad Lutfi, 1988).
Minaret	Minarets in this period became taller and slender, taking shape around the dome house
Dome Chamber (Gonbadkhaneh)	The dome chamber served as the main space of the mosque, positioned along the main axis. The mihrab was also located in the dome chamber.
Iwans	During this period, mosques with four iwans were formed. The iwans also served as venues for teaching students.

Influence of Iranian Architecture on Mamluk Mosque Design


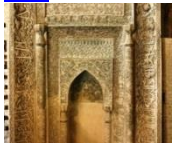


During the Mamluk rule in Egypt (1250-1517 AD), Iranian architecture had a significant influence on the mosque architecture in the region. In this period, the Mamluks, primarily consisting of Turks and Iranians, moved to Egypt as rulers and contributed to the development of Islamic architecture, particularly mosque architecture, by introducing their culture and art to the region (Soltanzadeh et al., 2015).





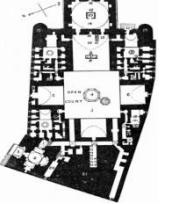
Mamluk mosque architecture in Egypt was influenced by Iranian architecture. Some of the features that reflect the impact of Iranian architecture on Mamluk mosques in Egypt include:

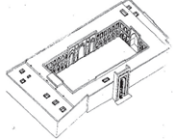


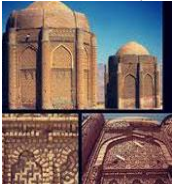

- Using brick masonry instead of clay tiles for the internal structures of the mosque
- Incorporating complex geometric patterns adorned with handicrafts to decorate walls and ceilings
- Utilizing tall columns and large arches with geometric carvings and embellished with beautiful patterns and script
- Including water fountains inside mosques as part of the architectural ornamentation





Examples of Mamluk mosques in Egypt that demonstrate the influence of Iranian architecture are Qalawun Mosque, Sultan Hasan Mosque, Al-Adawi Mosque, Al-Zahir Baybars Mosque, Al-Sahudi Mosque, and Al-Sahimi Mosque. These mosques, with their intricate geometric designs, beautiful decorations, and use of tall columns and large arches, serve as prominent examples of mosque architecture during the Mamluk period in Egypt.


Table 2- Investigation of mosque samples studied during the Mamluks era, (source: the author).

Mosque Name	Year of Construction	Architectural Characteristics	Inspiration from Iranian Architecture	Iranian Eras	Results
Mosque of Sultan al-Nasir Muhammad ibn Qalawun (Qalawun Mosque)	1310-1341 AD	<p>1- The mosque followed a hypostyle plan in which a plan surrounded by a courtyard enclosed by four arcades made of red bricks and supported by large granite columns, small white marble columns, and limestone blocks (Abouseif, 2007).</p> <p>2- This structure consists of six minarets, three mihrabs, and one prominent mihrab.</p> <p>3- It has high ceilings with intricate handmade decorations and geometric designs (Al-Harithy, 2000).</p>	<p>Iranian architecture in the Qalawun Mosque is considered a prominent and fascinating feature of this mosque. In the design and construction of this mosque, Iranian architecture has astonishingly combined with Mamluk Islamic architecture (Mathews, Karen R. 2004). The design of this mosque, influenced by Iranian culture in Egypt during the Mamluks era, has been influenced by Iranian architecture. Some of the Iranian architectural features in this mosque include:</p> <ul style="list-style-type: none"> • The walls of Qalawun Mosque adorned with colorful tiles with intricate geometric forms. • Beautiful handmade decorations and prominent artistic patterns are used in the design of this mosque, including a collection of tile patterns on the walls of the mihrab. • These patterns are made up of intricate geometric shapes and beautiful flower and vase motifs. 	<p>Seljuks era</p>	 <p>- Colorful tile work in the mihrab of Qalawun Mosque, Egypt, https://en.wikipedia.org/wiki/Al-Nasir_Muhammad_Mosque#/media</p>  <p>Colorful tile work in the Seljuk period, https://media.ahrnews.com/d/2019/05/19/3/3132746.jpg</p>  <p>Blue mosaic tile minaret of Qalawun Mosque covered with glossy blue mosaics on the upper structure (Williams, C. 2008).</p> 

					<p>Sarban Minaret, blue monochrome tile, Seljuk period, Juybarreh neighborhood, Isfahan, Iran, http://eghtesadgardan.ir/fa/news/Accessed September 26, 1996</p>
Sultan Hasan Mosque	1356 AD	<p>1- Four iwans, emphasis on the main axis of the iwan dome chamber. 2- House and mihrab at the end, a hierarchy of dalans ending in an octagon. 3- Entrance, tall and delicate minarets. 4- The central courtyard is a vast, wide square space surrounded by four memorable iwans (the rooms of the dome-dar open on one side) with the qibla iwan (iwan towards prayer) larger than the other three iwans. This space served as the congregation mosque, but was also used for teaching schools located underground. It is said that each of the four iwans was dedicated to teaching one of the four Sunni schools of Islamic jurisprudence: Hanafi, Hanbali, Maliki, and Shafi'i. 5- A historical Kufic-style inscription, set against a wheel-shaped Arabic plant pattern, is drawn along the length of the iwan and is unparalleled in Mamluk architecture. The text is a piece of Surah Al-Fath (The Victory) from the Quran. Under this inscription belt, the qibla wall is covered in</p>	<p>The size of the iwan emulates that of the Taq Kasra of Iran, which was regarded as a miraculous achievement, and Mamluk historians like al-Maqrizi claimed it to be larger than the famous vaulted iwan of the Sasanian Iranian palace of Taq Kasra, however, the iwan of Sultan Hasan Mosque is not as large as that vault, yet the comparison accentuates the legendary reputation of this structure (Clot, André, 1996). This iwan also has abundant decorations.</p> <ul style="list-style-type: none"> • Shallow niche muqarnas imitates Iranian muqarnas work in the mihrab. • This building directly utilized Seljuk Iranian architecture. The position of the four iwans plus the courtyard in a configuration where the shrine tomb is located beneath the iwan dome. In the four corners of this mosque, four Sunni schools were built resembling the Madrasah Mustansiriya in Baghdad. 	<p>Sasanians era, Seljuks era</p>	 <p>Iwan of Sultan Hasan Mosque (Mamluks)</p>  <p>Taq Kasra of Iran (Sasanians)</p>  <p>Entrance muqarnas</p>  <p>Entrance muqarnas (Iran)</p>  <p>Four-iwan and dome chamber of Sultan Hasan Mosque, https://en.wikipedia.org</p>

		<p>colorful marble, which is centered in the mihrab (a symbolic direction of prayer) framed with its golden inscription, and its central half-domed cap bears a prominent rising sun motif with the word "Allah." A stone and marble pulpit next to it may have been covered at one time with geometrically carved motifs similar to the pulpit of the Aqsunqur Mosque, but today this is not apparent (Clot, André, 1996).</p>	<ul style="list-style-type: none"> The entrance doors in the corners of the iwans, consistent with the Mamluk tradition, feature muqarnas work reminiscent of the Seljuk artwork seen in Seljuk structures. 	<p>g/wiki/Mosque-Madrasa of Sultan Hasan</p>  <p>Three-dimensional plan of Mustansiriya School in Baghdad in a four-iwan arrangement, (Helen Brown, 1994).</p>
Mosque of al-Zahir Baybars	1262 AD	<p>This mosque is square-shaped, meaning it is a flat building with a ceiling supported by columns. Today, the mosque lacks most defining features such as a dome, minarets, roof, and most of its decorations. However, with over 10,000 square meters and a height of 12 meters, a trace of its grandeur remains. Both the western and eastern corridors have three columns each. The south has six, and the north has two columns. At the head of each entrance is a minaret, meaning Mosque Baibars had one more minaret than Al-Hakim Mosque. It also bears a closer resemblance to Al-Hakim Mosque. (Abouseif, 2007). Great pointed arches create walls for the mosque courtyard and also provide support for the dome base.</p>	<p>The architecture of Mosque Al-Zahir Baibars is inspired by Iranian and Islamic architecture.</p> <ul style="list-style-type: none"> Dual arches and canopy structures are used in the architecture of this mosque. (Kharraqan Tower) The muqarnas, too, are influenced by Iranian architecture and are designed with special beauty (Seljuks). 	<p>Seljuks era</p>   <p>Mosque of al-Zahir Baybars (Mahmoud Kashif, 2017).</p>  <p>The Kharraqan towers, https://fa.tripyar.com/iran</p>  <p>Muqarnas of Baybars mosque (Mahmoud Kashif, 2017).</p>

					 <p>Muqarnas of Isfahan Jame Mosque</p>
Al-Sahimi Mosque	1250 AD	<p>One of the famous and prominent mosques in Cairo, Egypt. This mosque is located in the Sayyida Zaynab area in the southeast of the Saladin Citadel. It was built during the Mamluk period and was also repaired and expanded during the Ottoman period (Sabri Jarra et al., 2007). In 1966 CE, the Al-Sahimi Mosque was registered as one of the historical landmarks in Egypt. This mosque possesses some unique architectural features that distinguish it from other Mamluk mosques in Egypt.</p> <p>Among the architectural features of this mosque, we can mention the dual arches, wooden ceilings with beautiful paintings, special tile works, and very beautiful and unique interior and exterior views.</p>	Among the Iranian architectural features of this mosque, one can point out the beautiful muqarnas and special tile works in the interior and exterior views.	Seljuks era	 <p>Mosque entrance tile work, https://lh3.googleusercontent.com/p/AF1QipMGf1c520V15BORrd-wYDdyjxHqcX4cgt1UNeA=s1360-w1360-h1020</p>  <p>Jameh Mosque of Kashan (Seljuks), https://b.elicdn.com/cdn-cgi/image/fit=contain,width=1200,quality=100/Blog/wp-content/uploads/2018/08/01-36.jpg</p>  <p>Shallow muqarnas and single minaret of the mosque, https://lh3.googleusercontent.com/p/A</p>

					F1QipMEIjnA09MfUR7mtGwUWhL5o3SXtXl_amEoWi67=s1360-w1360-h1020  Iranian muqarnas, https://vista.ir/w/a/21/Ihtj3
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4. Conclusion

Mamluk architecture supported the political approach of its time. Mosque architecture in Egypt underwent significant changes under the various ruling governments. During the Mamluk period, mosques were constructed in a quadrangular style with an emphasis on the central axis, dome over the mihrab, and were adorned with hierarchical elements leading to octagonal entries, colorful tile works, double arches, beautiful and diverse painted wooden ceilings, as well as taller and more elaborate minarets and intricate wall decorations and mosque doors.

Based on the conducted research on the influence of Iranian architecture on Mamluk mosque architecture, it can be concluded that the utilization of Iranian architecture in Egyptian mosques demonstrates the cultural and artistic influences shared among various Islamic countries. It signifies that Islamic art and architecture, considering the cultural and artistic diversity across different Islamic countries, have taken shape in a unique and unparalleled manner.

During the Mamluk period, Iranian architecture had a profound impact in Egypt and was extensively utilized in various structures, including mosques, caravanserais, and palaces. Through the analysis of Mamluk mosques, it is evident that the architecture was heavily influenced by the Seljuks, Sassanids, Timurids, and Ilkhanids. Mosque designs in Iran during the Seljuk period transitioned from hypostyle mosques to four-iwan mosques, a style that was also adopted in Egyptian mosques during the Mamluk era.

In conclusion, Mamluk architecture during a critical historical period in the Islamic world, showcasing the splendor of the Mamluk dynasty, especially in grand structures and global innovations, can be observed in mosque architecture. The research findings indicate that mosque architecture in Egypt evolved in each era in accordance with the worldview of the ruling authorities, mirroring the changes seen in the governance throughout Egypt's historical epochs.

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