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The Relationship Between Spatial Organization and the Semantic Configuration of Inscriptions in Safavid Period Mosques

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A b s t r a c t

This study investigates the relationship between spatial organization and the semantic configuration of inscriptions in Safavid mosques through the cases of Sheikh Lotfollah Mosque, Imam Mosque, and Hakim Mosque in Isfahan. Adopting a qualitative research framework, it combines comparative case study analysis with plan-based spatial reading. The locations of inscriptions, their textual content, language preferences, and script characteristics are mapped onto architectural plans, while the ritual movement from entrance to mihrab is reconstructed to examine how inscriptions guide perception and structure meaning. The findings suggest that inscriptions are not merely decorative elements but active components of spatial hierarchy and religious experience. Their placement, content, and visual emphasis correspond to different stages of movement and perception within the mosque. The study argues that Safavid mosque architecture should be interpreted as an integrated semantic environment in which space, text, and ritual movement operate together. This study, prepared at the Graduate School of Istanbul Gelişim University, examines 'The Relationship Between Spatial Organization And The Semantic Structure Of Inscriptions In Mosques Of The Safavid Period: A Spatial Analysis of the Sheik Lütfullah, Imam, and Hakim Mosques'.

K e y w o r d s : Safavid architecture; Mosque inscriptions; Spatial hierarchy; Ritual movement; Isfahan.

1. Introduction

The Safavid State (1501–1736), founded by Shah Ismail in Ardabil, was a Turkmen dynasty that adopted Shiism as its official sect and ruled over the territories of present-day Iran, Azerbaijan, and the Caucasus. The Safavid State should be considered not only as a political structure, but also as a powerful project of ideological and sectarian transformation. According to Tufan Gündar (2006), the Safavids systematically employed religious discourses as well as mobile and symbolic instruments in order to institutionalize Shiite identity (Gündar, 2006). Within this context, architecture became not merely an act of physical construction, but also a medium through which ideological meaning was produced and transmitted. In particular, the inscriptions located within mosque spaces played a significant role in making this ideological framework visible through their poetic and religious content. Inscriptions, as architectural writing elements, also assumed an important role in this process. It can be observed that the content of the texts, the language, the calligraphic style, and the placement of the inscriptions were selected and arranged in accordance with the official Shiite discourse and religious policies of the Safavid State (Rizvi, 2011).

Natural light filtering into the interior through the dome drums and the windows of the prayer hall reflects on the tiled surfaces, making the inscriptions more prominent. In this process, writing becomes an element perceived on both visual and spiritual levels. Through the directed use of light, the text becomes an active component of spatial experience and mediates between the visitor's sensory perception and movement within the space (Figure 1). From this perspective, inscriptions are not passive elements within the architectural organization of the mosque. Rather, they are included in a temporal and experiential process of reading, gaining meaning through the visitor's movement within the interior space (Blair & Bloom, 1994).

Figure 1. The Relationship between Light and Interior Space in Safavid Mosques (by the Authors, 2024 Isfahan).

Persian inscriptions were able to offer a mode of expression that conveyed cultural identity, aesthetic taste, and social messages through implication and metaphor, rather than through the direct transmission of religious content. In particular, the placement of poetic texts in semi-public or transitional parts of the building enabled these inscriptions to produce a discourse that was compatible with the religious function of the space, yet broader and more inclusive in meaning (Figure 2) (Wilber, 1955; Papadopoulo, 1969; Allen, 1983). In this respect, Persian poetry demonstrates that inscriptions in Safavid mosque architecture could function not only as religious elements, but also as cultural, aesthetic, and ideological means of expression.

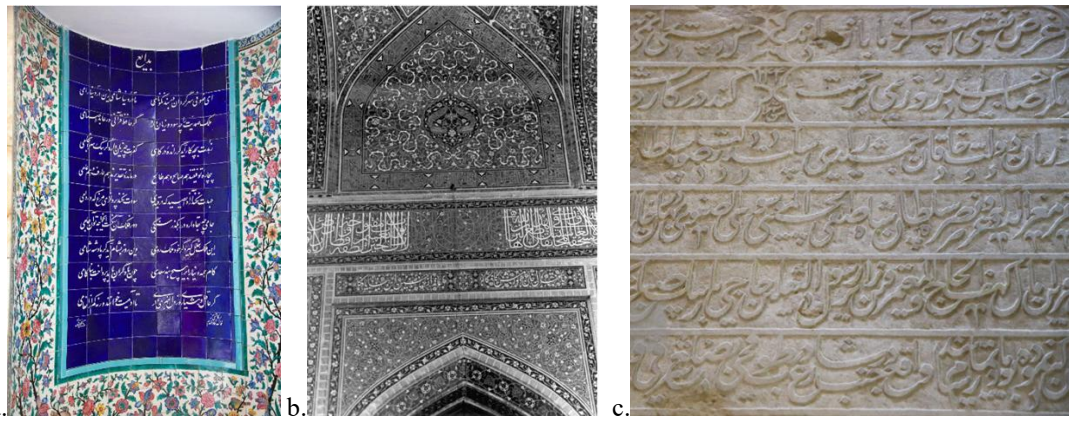


Figure 2. Inscriptions Containing Persian Poetry and Literary Texts a) Persian poetic inscription, (b) Inscription on a stucco and muqarnas surface band, (c) Persian inscription executed in stone relief technique (Papadopoulo, 1969).

1.1 Safavid Period Mosque Architecture: Location, Spatial Organization, and Distinctive Elements

During the Safavid period, the mosque, as the most important religious building, acquired a role beyond that of a place of worship. With the official adoption of Twelver Shiism, mosques became spaces for representing the religious identity of the state, reinforcing political legitimacy, and transmitting religious doctrine. While in earlier periods the mosque had been primarily focused on the function of worship, in the Safavid period it was directly associated with urban planning, squares, bazaars, and circulation axes. This relationship transformed the mosque into an active part of daily and urban life, allowing visitors to "read" the space and its inscriptions gradually through movement (Çoruhlu, 1998).

Safavid mosques were generally organized according to a four-iwan plan scheme. This scheme has roots extending back to pre-Islamic Iranian architecture and developed and matured during the Islamic periods. Within this configuration, iwans function not merely as physical architectural elements, but also as devices that direct movement, establish spatial hierarchy, and emphasize the qibla axis. The mosque entrance, courtyard, iwans, and finally the mihrab form a continuous spatial sequence that gradually leads the visitor from the exterior space toward the sacred center (Blair & Bloom, 1994).

In distinguished Safavid examples in Isfahan, such as the Shah Mosque, the Sheikh Lotfollah Mosque, and the Hakim Mosque, it is evident that this spatial organization was designed with deliberate precision. The "rotation" of the entrance axis toward the qibla direction, the use of transitional spaces, and the control of sightlines and movement suggest that Safavid architects possessed a strong design understanding of the spatial and experiential qualities of the mosque (O'Kane, 1987).

1.2 Inscriptions, Architectural Writing, and Religious Legitimacy in Safavid Mosques

During the Safavid period, mosque inscriptions played a central role in the reproduction of the state's religious and political legitimacy. The direct patronage of Safavid rulers in the construction, restoration, and decoration of mosques and sacred spaces demonstrates their awareness of the symbolic power of architectural writing. In this context, inscriptions in Safavid mosques should not be regarded as incidental or merely decorative elements. Rather, they can be interpreted as part of a spatial–movement scenario that extends from the entrance to the mihrab, guiding the visitor through a directed route of textual reading and spatial experience.

One of the distinctive features of the Safavid inscription tradition is the frequent inclusion of the names of calligraphers, artists, and craftsmen in the inscriptions. In addition, the considerable length of many inscription texts often allowed them to convey more than one theme simultaneously. Therefore, a single inscription may be evaluated under more than one thematic category.

In general, the contents of Safavid-period nasta'līq inscriptions can be classified into three main groups: religious, historical, and literary. In order to narrow the analytical focus, this study examines only religious-content nasta'līq inscriptions (Table 1). In this study, the classification of inscription contents is based on the primary communicative function of the text. Although it is acknowledged that an inscription may carry multiple themes at the same time, the classification is determined according to its dominant content.

Table 1: Classification of Architectural Inscriptions in the Safavid Period Based on Functional Content.

Text Type	Content
Religious Texts	Qur'anic Verses
	Hadiths
	Dhikr and Hagiographic Narratives
Historical Texts	Waqfiyya Texts
	Royal Decrees
	Historical Records
	Personal Names
	Epithets and Titles
	Commemorative Inscriptions
Literary Texts	Advice and Moral Counsel
	Sufi Poems

The literature review indicates that the aesthetic, ideological, and artistic dimensions of inscriptions in Safavid-period mosques have been extensively addressed. However, it has been observed that the relationship between the language and content of inscription texts and their spatial positions within the mosque plan has not been analysed in a holistic and plan-centred manner. In this context, the study aims to examine inscriptions as active architectural components that guide spatial hierarchy and user experience.

2. Materials and Methods

Within the scope of the research, three mosque examples were examined: the Imam (Shah) Mosque, the Sheikh Lotfollah Mosque, and the Hakim Mosque. These examples were addressed at two different levels according to the depth and function of the analysis. The Imam Mosque and the Sheikh Lotfollah Mosque were selected as the main case studies. The Hakim Mosque, on the other hand, was evaluated as a contextual and supporting example in order to demonstrate different spatial positions and modes of use of inscriptions. Accordingly, the following steps were followed:

- The spatial organization was analysed through their architectural plans, considering the sequence of entrance, courtyard, iwan, prayer hall, and mihrab.
- The locations, calligraphic styles, and languages of the inscriptions and their positions within the spatial hierarchy were evaluated.
- Visitor movement was reconstructed within the framework of a circulation flow extending from the mosque entrance to the mihrab.

In order to ensure the systematic analysis of epigraphic data, an analytical coding system was developed in this research. This system is based on three main parameters: spatial location — Zone "Z"; text type — "TT"; and readability, which includes height band, viewing distance, and legibility. Through these parameters, inscriptions were analysed simultaneously in terms of spatial distribution, textual content, and perceptual accessibility. In this way, the relationship between the epigraphic programme, architectural space, and visitor movement was transformed into a measurable and comparable model. The originality of this research lies in its simultaneous consideration of plan layout, inscription language, and visitor movement, and in its transformation of existing theoretical approaches into a plan-based analytical reading model.

3. Results

3.1 Sheikh Lotfollah Mosque (1603–1619)

Sheikh Lotfollah Mosque was constructed on the eastern side of Naqsh-e Jahan Square. Unlike many mosques of the period, it does not have a central courtyard or minarets; furthermore, it does not follow the classical four-iwan plan typology (Hillenbrand, 1994). The deliberate elimination of the courtyard reflects the semi-private and palace-related character of the building, transforming the interior into an inward-oriented and concentrated spatial composition (Babaie, 2008).

The plan begins with a square main space, which is transformed into a circular form through corner squinches, upon which a single dome is placed (Pope, 1965). The absence of a courtyard and the concentration of spatial organization within the domed main hall create a single-focused structure directed toward the qibla and mihrab axis.

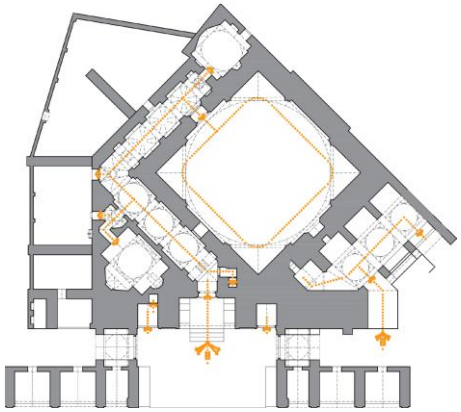


Figure 3. Visitor Circulation Scheme of the Sheikh Lotfollah Mosque (Bemanian, Jelvani and Arjmandi 2016: 63).

In the plan analysis, the most striking element is the indirect and bent circulation route between the entrance and the main prayer hall (Figure 3). The entrance on the square façade does not open directly into the domed space. After passing through the portal, the visitor is directed into a winding passage and, following a 90-degree turn, reaches the main prayer hall aligned with the qibla direction (Wilber, 1955). This change in direction is not merely a technical solution, but also a deliberate spatial arrangement that transforms the passage into the sacred space into a gradual experience.
The dome is single-shelled and has precise geometric proportions. Light filters through the lattice openings in the dome drum and gradually spreads across the interior surface (Figure 4). This controlled illumination emphasizes the centre of the dome and transforms the radial composition of the interior surface into a perceptual focal point (Pope, 1965).

Figure 4. Tile Decorations and Spatial Unity on the Interior Surface of the Dome of the Sheikh Lotfollah Mosque (by the Authors, 2024).

The absence of broad transitional spaces increases the perceptual intensity of the interior, while the spatial hierarchy is established through a concentrated yet meaningful transition from the semi-public entrance area to the private prayer space (Figure 5).

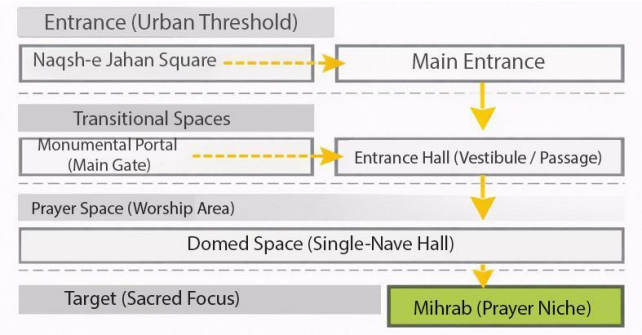


Figure 5. Visitor Circulation Diagram of the Sheikh Lotfollah Mosque.

3.2 Imam (Shah) Mosque (1611–1630 M)

Imam Mosque, located on the southern side of Naqsh-e Jahan Square in Isfahan. The plan of the Imam Mosque is based on the established four-iwan plan scheme. The general organization of the building is structured along a longitudinal axis of symmetry (Figure 6). The rectangular central courtyard forms the core of the spatial composition and functions as the organizing element of the entire plan scheme.

The four iwans located on the four main sides of the courtyard create a cruciform, or cross-axial, composition, thereby reinforcing the spatial order. Among these iwans, the southern iwan (qibla iwan), is the most emphasized element of the composition in terms of its dimensions, height, spatial depth, and ornamental intensity, and it defines the main axis of the building. This iwan opens directly onto a large domed space, known as the gunbadkhana, which can be considered the final and more private area of worship within the mosque.

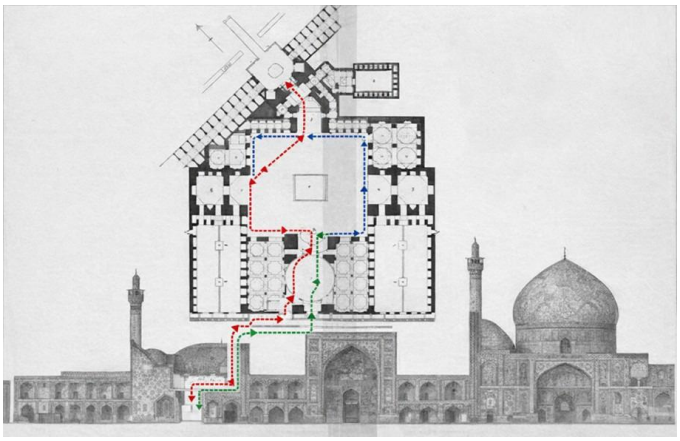


Figure 6. Visitor Circulation Scheme of the Imam Mosque (by the Author, 2026).

The plan of the Imam Mosque reflects an integrated combination of the central position of the courtyard, the strong emphasis on the qibla axis, and the symmetrical balance of the lateral spaces. As a semi-public space, this courtyard functions as an intermediate zone between the urban square and the interior circulation space. The large scale of the courtyard, its direct relationship with the open sky, and the rhythmic repetition of the arcades create a spatial experience characterized by openness and pause. From this point onward, movement is directed toward the qibla iwan. In the southern iwan, the gradual increase in spatial height and depth strengthens perceptual intensity and focuses the visitor's orientation toward the main domed space. In the final stage, entry into the semi-dark and concentrated domed space creates a distinct change in terms of light, acoustics, and scale, producing an atmosphere that enhances spiritual concentration.
In this context, the circulation diagram can be understood as a gradual movement scenario progressing from the public realm toward a more private and sacred space (Figure 7).

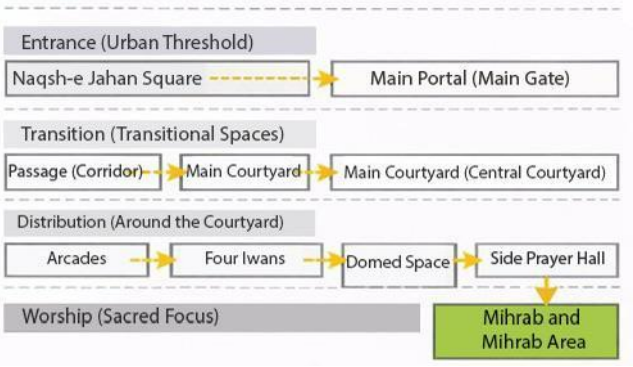


Figure 7. Visitor Circulation Diagram of the Imam Mosque.

3.3 Hakim Mosque (1656–1662)

Hakim Mosque, located within the historical fabric of Isfahan in the bazaar district with four-iwan scheme, is an important example representing continuity at the neighbourhood scale. It was shaped within everyday urban life and the local neighbourhood context.
Compared with the Imam Mosque, the scale of the courtyard and the height of the iwans present a smaller and more compact structure. The southern iwan, or qibla iwan, continues to be the most prominent element of the composition and opens onto the main domed space. This domed space defines the final and more private area of worship. Here, the spatial organization focuses less on political representation and monumentality, and more on the everyday and collective use of the congregation (Figure 8).

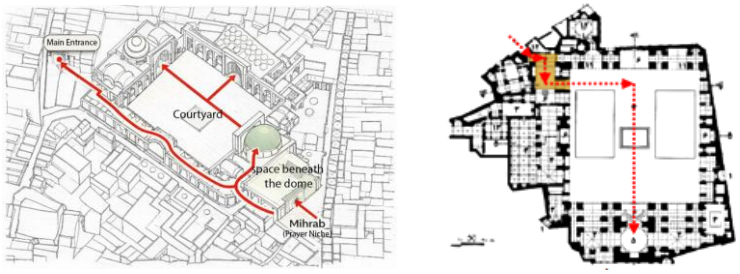


Figure 8. Visitor Circulation Diagram of the Hakim Mosque (by Authors 2026).

In the Hakim Mosque, the visitor's movement begins from the bazaar passage. The transition from the lively and noisy urban environment to the calmer entrance space creates the first perceptual break. After passing through the portal, the visitor reaches the central courtyard, which functions as an intermediate zone regulating the spatial transition (Figure 9). The qibla axis and the southern iwan are visible from the beginning, making the orientation more direct. Movement toward the qibla iwan takes place along a shorter and more direct route. Therefore, the circulation sequence displays a simpler character compared with the multi-stage and dramatic spatial scenario of the Imam Mosque.

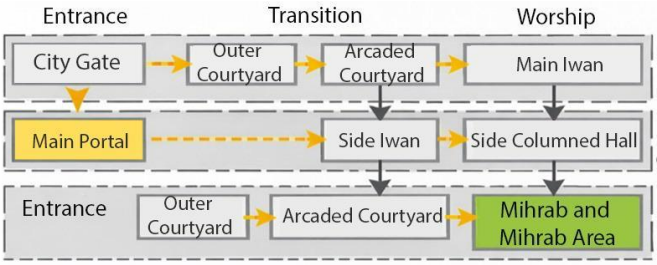
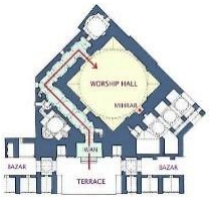
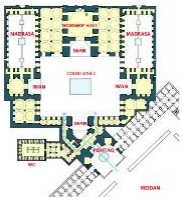
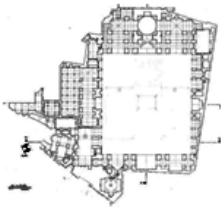


Figure 9. Visitor Circulation Diagram of the Hakim Mosque.

Table 2: Comparison of Spatial Organization, Hierarchy, and Visitor Movement.

Analysis Criteria	Sheikh Lotfollah Mosque	Imam / Shah Mosque	Hakim Mosque
General Plan Typology	Single-shell plan without a central courtyard 	Four-iwan plan with a central courtyard 	Medium-scale four-iwan plan 
Form of Spatial Organization	Focused on the central domed space, with limited transitional areas	Organized around a central courtyard and four iwans	Organized around a courtyard; more compact than the Imam Mosque
Relationship between Entrance and Urban Context	Entrance from Naqsh-e Jahan Square; internal orientation-shifting arrangement	Monumental entrance from Naqsh-e Jahan Square; axis directed toward the qibla	Entrance related to the bazaar fabric and neighbourhood passages
Visitor Movement	Bent and turning circulation route; orientation toward the domed space	Linear-axial circulation route: entrance → courtyard → qibla iwan → dome	Similar to the four-iwan scheme, but shorter and more direct
Formation of the Qibla Axis	The square–qibla axis conflict is resolved through an internal change of direction	The qibla axis is clearly defined by the qibla iwan and the dome	The qibla is emphasized within the four-iwan system
Spatial Hierarchy	Semi-public entrance → transitional bent passage → private domed space	Public square → semi-public courtyard → iwan → domed space	Public entrance → courtyard → qibla space
Role of the Central Courtyard	No central courtyard	Main organizing element of the spatial composition	Organizing element, but on a more limited scale
Spatial Culmination Point	Domed space	Qibla iwan and domed space	Qibla iwan and domed space
Nature of the Spatial Experience	Inward-oriented, concentrated, and gradual	Ceremonial, collective, and hierarchical	Neighbourhood-scaled, functional, and community-oriented
Area of Inscription Concentration	Portal, dome drum, and mihrab area	Portal, iwan surfaces, and dome	Iwan surfaces and courtyard arches

4. Discussion : The Relationship between Inscriptions and Spatial Organization

The spatial organization and movement scenario of the Mosques have been examined in terms of typology, sacred hierarchy, and the visitor's movement experience (Table 2). The plan analyses indicate that each of these buildings directs the body, the gaze, and consciousness in different ways through its own distinctive spatial pattern. This reveals that space is not merely a physical volume, but also a constructed system that produces meaning. However, the experience of these spaces is not only physical or volumetric, rather contains a multilayered system of meaning, and the most fundamental components is writing. In the tradition of Islamic art, the inscription is an integral component of spatial meaning production. The selection of the script type, its scale, and placement are directly related to the spatial hierarchy of the building. As Blair (1998) argues, the transformation of Islamic calligraphy has always taken place in close interaction with architecture, and the position of writing has been determined in accordance with the physical structure and spatial significance of the building.

4.1 Types of Inscriptions According to Spatial Location

The transformation of inscriptions in Islamic architecture is directly related to the transformation of calligraphic styles:

- Kufic: geometric and rigid; widely used in the early periods.
- Thuluth: monumental and dynamic; suitable for prominent spaces such as iwans and domes.
- Naskh: more legible and elegant; mostly used in interiors.
- Nastaʿlīq: an Iranian calligraphic style; endowment inscriptions and poems.

In general, inscription practices in Safavid mosques appear in different forms. These include entrance and threshold inscriptions, which refer to the patron's name, construction date, and expressions inviting worship; iwan inscriptions, which include selected Qur'anic verses and emphasize identity and sectarian affiliation; dome-space inscriptions, including inscription bands beneath the dome and inscriptions on the dome drum; mihrab inscriptions, which emphasize the qibla and worship; and transitional inscriptions located in the porticoes and prayer hall spaces.

Mosque inscriptions can be grouped under five main categories:

- Qur'anic verses,
- hadiths and dhikr formulas,
- divine names and the names of the Imams
- patron and endowment inscriptions, and
- Sufi or Persian poems.

4.2. Data Collection Method and Analytical Coding System: Spatial–Textual Data Structure

In this research, a multi-layered coding system was developed in order to systematically analyse the location and perceptual functions of inscriptions within their architectural context. This system enables the relationship between the spatial position, textual character, and perceptual accessibility of each inscription to be evaluated through measurable variables. The coding parameters used in the study are as follows:

Zone (Z): Refers to the spatial zone in which the inscription is located. Each building was divided into sub-zones according to its functional and spatial integrity.

- Z01 = Entrance zone
- Z02 = Courtyard perimeter
- Z03 = Iwan surface
- Z04 = Dome drum
- Z05 = Mihrab area

Text Type (TT): Refers to the classification of the text according to its content.

- TT01 = Qur'anic verses
- TT02 = Hadith texts
- TT03 = Prayer and dhikr texts
- TT04 = Waqfiyya texts / endowment inscriptions
- TT05 = Patron and royal inscriptions
- TT06 = Persian poetry and literary texts

Height Band (H): Refers to the level of visual accessibility according to the inscription's height from the ground.

- H1 = Low level: at or below human eye level
- H2 = Medium level
- H3 = High level: dome drum and upper surfaces

Viewing Distance (D): Indicates the average distance from which the inscription is perceived.

- D1 = Close distance: approximately 0–3 m
- D2 = Medium distance: 3–10 m
- D3 = Long distance: 10 m and above

Readability Score (RS): Refers to an approximate perceptual accessibility coefficient derived from the combination of the Height Band and Viewing Distance variables. This score was used to evaluate the extent to which the text can be visually distinguished and read by the visitor during physical movement through the mosque.

Through the coding system presented in Table 3, the inscriptions were analysed not only in terms of their textual content, but also holistically in relation to spatial distribution, visual accessibility, and visitor experience.

Table 3: Structural Components of the Analytical Coding Framework.

Code Parameter	Definition	Analytical Purpose
Zone (Z)	It indicates the spatial zone in which the inscription is located. The structure is divided into sub-zones according to functional and spatial integrity.	To determine the distribution of the text within the spatial organization and its relationship with sacred hierarchy.
TextType (TT)	It refers to the classification of the text according to its content type, such as Qur'anic verse, hadith, endowment inscription, poem, etc.	To analyse the semantic relationship between content type and spatial location.
HeightBand (H)	It expresses the visual position of the inscription according to its height from the ground.	To evaluate the perceptual accessibility and representational level of the text.
ViewingDistance (D)	It indicates the average distance from which the inscription is perceived.	To determine the reading conditions of the text during the visitor experience.
ReadabilityScore (RS)	It is an approximate readability coefficient derived from the combination of the HeightBand and ViewingDistance variables.	To quantitatively express the level of visibility and readability of the text during physical movement.

This coding system enables inscriptions to be analysed in a holistic and comparable manner, not only in terms of their iconographic and textual content, but also in relation to spatial distribution, perceptual accessibility, and visitor movement.

4.3. The Inscriptions of the Sheikh Lotfollah Mosque

Sheikh Lotfollah Mosque is based on a courtyardless and single-domed spatial arrangement (Figure 10). This difference reflects not only a typological choice, but also an experiential and ideological one. The public axis of the square does not directly coincide with the qibla axis; instead, the visitor reaches the domed space by changing direction through a winding transitional passage.

Babaie's (2008: 86) observation that the buildings surrounding the Safavid square produced ideological representation can be reinterpreted here through a different logic of internalization. In the Sheikh Lotfollah Mosque, public representation is not transferred directly into the interior space; rather, it is subjected to a controlled process of transformation.

This semi-dark and winding passage gradually changes the orientation of the body, carrying the visitor from the horizontal and public order of the square into the central and inward-oriented space beneath the dome.

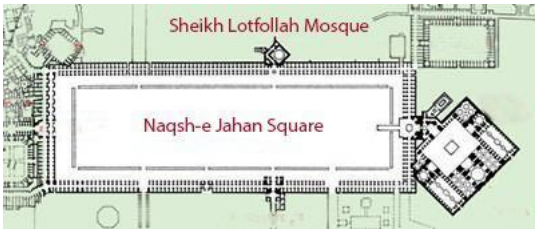


Figure 10. Location of Naqsh-e Jahan Square and the Sheikh Lotfollah Mosque (Adapted from Qasim et al. n.d.).

The movement sequence can be read as follows:

Naqsh-e Jahan Square

- Portal (Z02)
- Winding Transitional Passage (Z03)
- Domed Space (Z08)
- Mihrab (Z09)

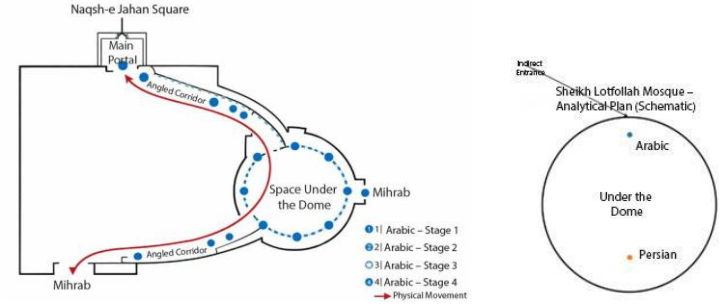


Figure 11. Analytical Scheme of Spatial Movement and Inscription Placement in the Sheikh Lotfollah Mosque.

The gradual progression is not merely physical circulation; it is also the staged construction of meaning. At the portal, the visitor encounters the declaration of political and religious identity; in the transitional passage, the change of direction separates the visitor from the urban context; beneath the dome, the visitor confronts a central and cosmic focus; and at the mihrab, orientation is fixed as the act of worship begins (Figure 11). In the Sheikh Lotfollah Mosque, the placement of inscriptions precisely at these points of spatial and perceptual transition (Figure 12) indicates that writing participates in a simultaneous process of meaning production together with architecture.

In this context, writing is not a decorative element added onto the surface, but a structural component that organizes movement and makes the space readable. This spatial arrangement demonstrates that inscriptions were not placed randomly; rather, they were positioned according to spatial hierarchy and degrees of sacredness.

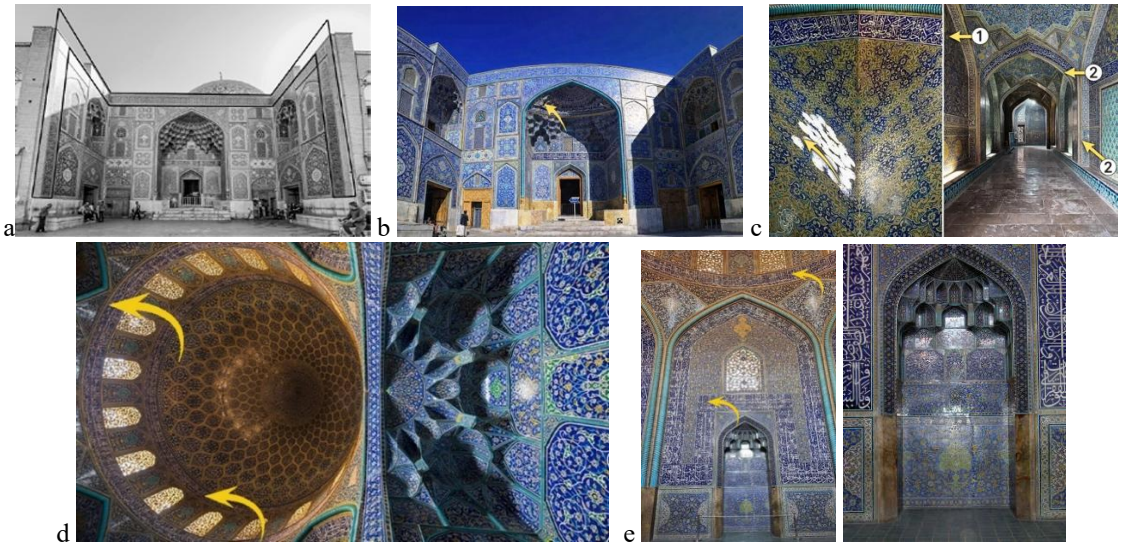


Figure 12. Inscriptions in the Sheikh Lotfollah Mosque: (a) Z01, forecourt (Akrami & Faleh, 2022), (b) Z02, portal (Kordhaghi, Zolfaghari, & Kandemir, 2022), (c) Z03, winding transitional passage (Haj Vaziri, Goodarzparvari, & Bani Ardalan, 2021), (d) Z08, domed space / under the dome (by the authors), (e) Mihrab (by authors).

In the inscriptions of the Sheikh Lotfollah Mosque, the texts located in the mihrab area consist predominantly of Qur'anic verses, and no reference is made in this section to the name of a shah or to any explicit political statement (Yusufiyan & Khakpur, 2016; Laffafchi & Razzaqi, 2024). This situation is directly related to the mihrab's function as the sacred focal point where prayer is performed. The spatial movement scenario of the mosque indicates that the visitor's experience deepens gradually:
Z02 — Portal: Declaration of the political–religious identity of the building
Z03 — Transitional Passage: Change of direction and cognitive preparation
Z08 — Under the Dome: Cosmic and metaphysical concentration
Z09 — Mihrab: Fixing of the body toward the qibla direction and the beginning of worship
At the mihrab stage, horizontal movement comes to an end, and the body is positioned in the direction of the qibla. The Height Band and Viewing Distance parameters suggest that the text was designed to be perceived directly at eye level and from a close distance (Table 4). This indicates that the highest level of functional concentration within the epigraphic programme occurs at this point.

Table 4: Sheikh Lotfollah Mosque (MSK01) – Inscription.

Zone	Location	TextType	Language	Calligraphic Style	Height Band	Viewing Distance	Readability	Context	Semantic Function
Z02	Entrance Portal Band	TT01 (Qur'anic Verse)	Arabic	Thuluth	H3	D2	3	Verses on tawhid and worship	Religious threshold – entrance into sacredness
Z03	Turning Entrance Passage	TT01 (Qur'anic Verse)	Arabic	Banna'i	H2	D2–D3	2	Dhikr and short expressions of tawhid	Worldly detachment – inward orientation
Z04	Transition Arches to the Interior	TT01 (Qur'anic Verse)	Arabic	Thuluth	H2	D2	3	Verses on prayer and servitude	Purification – cognitive preparation
Z08	Wall Band beneath the Dome	TT01 (Qur'anic Verse)	Arabic	Thuluth	H2–H3	D2	4	Themes of tawhid and divine unity	Metaphysical concentration
Z08	Central Surface of the Interior Dome	TT01 (Qur'anic Verse)	Arabic	Thuluth	H3	D3	2	Representation of cosmic unity and divine order	Cosmic symbolism – visual centre
Z09	Area beneath the Mihrab Muqarnas	TT01 (Qur'anic Verse)	Arabic	Thuluth	H1	D1	5	Verses on worship and the qibla	Final orientation – focus of worship

Z09	Side Panels around the Mihrab	TT04 (Reference to the Imam)	Arabic	Thuluth	H1–H2	D1	4	Emphasis on Imam Ali and Ahl al-Bayt	Sectarian identity – layer of walāya / spiritual authority
Z09	Lower Bands of the Mihrab	TT05 (Kataba Signature)	Persian	Nastaʿlīq	H1	D1	3	Records of the calligrapher and craftsmen	Artistic authority and historical record

The gaze is directed from the centre of the dome toward the mihrab surface. At this point, the function of writing changes: the text is no longer declarative or explanatory; rather, it assumes the role of a guide that directly recalls the act of worship. The mihrab inscriptions of the Sheikh Lotfollah Mosque cannot be evaluated independently from the building's spatial movement scenario. These texts appear at the final stage of the visitor experience. At this point, writing reaches its simplest yet most intense functional level.

From the perspective of the coding system, the coincidence of the lowest height band (H1) and the shortest viewing distance (D1) with the highest readability score (5) suggests that the epigraphic programme follows a deliberate spatial hierarchy. Therefore, in the Sheikh Lotfollah Mosque, inscriptions are not independent decorative elements; they are active components that shape spatial experience. The textual sequence extending from the threshold to the mihrab is fully aligned with the movement route and the degrees of sacredness.

4.4. The Inscriptions of the Imam Mosque

The mosque is located on the southern axis of Meydan-e Naqsh-e Jahan and establishes a gradual and controlled transition between the public urban space and the sacred space of worship (Figure 13). A key characteristic of Safavid-period epigraphy is the deliberate use of Arabic Qur'anic texts together with Persian historical and ideological contents within a conscious hierarchy (Gürkan Anar, 2024). This dual linguistic structure carries a particularly strong ideological emphasis in state-sponsored buildings. Epigraphy, therefore, is not merely ornamentation; it is the visualization of state ideology through architectural surfaces.

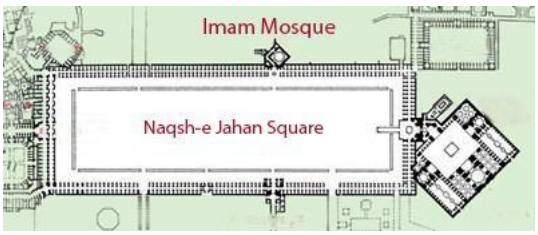


Figure 13. Location of Naqsh-e Jahan Square and the Imam Mosque (Adapted from Qasim et al. n.d.).

According to the movement scenario, the linear and axial progression produces a collective and representative worship experience, differing from the inward-oriented and controlled movement pattern of the Sheikh Lotfollah Mosque. When the visitor steps inside from the square, they first encounter the declaration of political identity. As the visitor approaches the sacred core, the language and content of the inscriptions change (Figure 14). This transformation runs parallel to the spatial hierarchy.

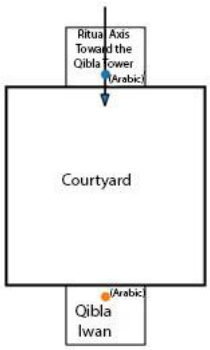


Figure 14. Analytical Scheme of Spatial Movement and Inscription Placement in the Imam Mosque (by authors, 2026).

In the Imam Mosque, only Arabic Qur'anic verses are found beneath the dome and in the mihrab area. The available data indicate that Persian texts do not become prominent within the sacred core. Political and historical texts are concentrated mainly at the entrance and on the exterior façades. This situation points to a deliberate correspondence between spatial hierarchy and linguistic hierarchy.

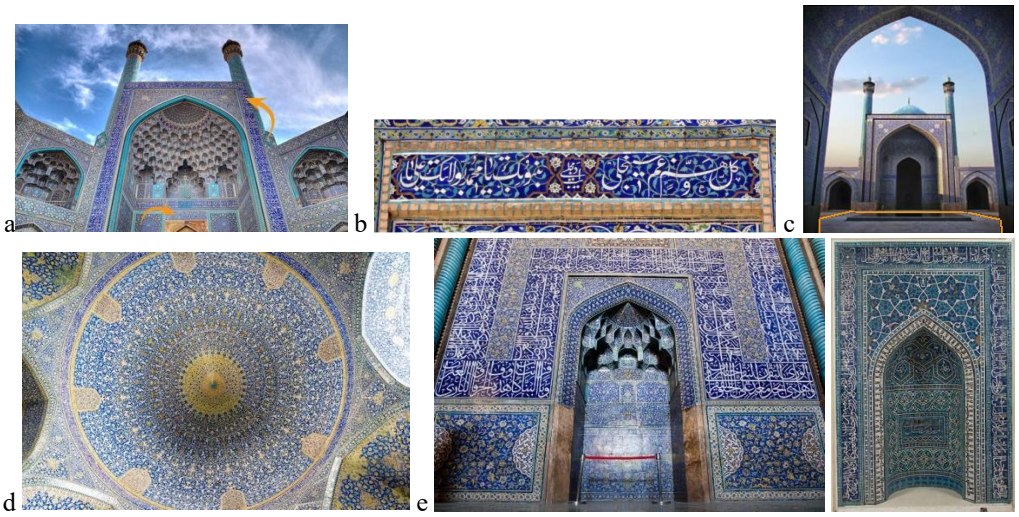


Figure 15. Inscriptions of the Imam Mosque of Isfahan: (a) Z02, portal (by the authors), (b) Z03, transitional passage (Khosravi Bijam, 2021), (c) Z04, upper inscription bands of the courtyard arcades (Beytoote, 2026), (d) Z08, domed space / under the dome (by the authors), (e) Z09, mihrab (by the authors).

The inscriptions located above the main entrance portal of the Imam Mosque can be considered the first epigraphic layer encountered by the visitor at the public threshold of the building (Figure 15).

The two-layered arrangement suggests that themes of supplicatory protection and prophetic exaltation are addressed simultaneously within the entrance space. This sequence indicates that the epigraphic programme follows a deliberate hierarchy of meaning, progressing from the public realm toward the sacred core. At the entrance stage, the text assumes the function of publicly declaring religious identity rather than directly referring to the practice of worship. The Height Band and Viewing Distance parameters reveal that the inscription was designed to be perceived from a distance and to create a collective visual impact.

The visitor experience begins at Z01 and continues toward Z09 in the following order:

- Z01 — Main Entrance Portal: Declaration of Shiite identity and sacred protection
- Z02 — Portal: Emphasis on political legitimacy and patronage
- Z03 — Passage: Spatial orientation and transition from the worldly realm to the sacred space
- Z08 — Under the Dome: Cosmic unity and metaphysical intensity
- Z09 — Mihrab: Fixing of the qibla direction and the beginning of worship

At this stage, the body has not yet been directionally fixed; movement is still continuous. Therefore, the function of the text is not primarily directional, but rather identity-declaring and cognitively preparatory. Within the movement logic of the mosque, the courtyard functions as the gathering space of the community, while the qibla iwan serves as the focal point of sacred orientation.

Table 4: Imam Mosque (MSK02) – Inscription.

Zone	Location	TextType	Language	Calligraphic Style	Height Band	Viewing Distance	Readability	Context	Semantic Function
Z02	Northern Main Portal Arch Band	TT01 (Qur'anic Verse)	Arabic	Jalī Thuluth	H3	D3	3	Tawba 18 – mosque construction and faith	Public declaration – religious legitimacy
Z02	Side Panels of the Portal	TT06 (History / Patronage)	Persian	Nastaʿlīq	H2	D2	3–4	Records of the patron and construction date	Political representation – official identity
Z03	Walls of the Entrance Passage	TT01 (Qur'anic Verse)	Arabic	Banna'i	H2	D2–D3	2–3	Themes of guidance and worship	Orientation – preparation for the sacred
Z04	Upper Inscription Bands of the Courtyard Arcades	TT01 (Qur'anic Verse)	Arabic	Banna'i	H2	D2–D3	3	Verses on piety and worship	Cosmic order – collective consciousness
Z05	Iwan Tympana	TT02 (Hadith)	Arabic	Thuluth	H2	D2	3	Hadiths on knowledge and guidance	Theological framing

Z06	Inner Surface of the Qibla Iwan	TT01 (Qur'anic Verse)	Arabic	Jalī Thuluth	H2–H3	D2	4	Themes of light and qibla orientation	Focusing – spiritual centre
Z08	Inscription Band on the Dome Drum	TT01 (Qur'anic Verse)	Arabic	Banna'i	H3	D3	2	Themes of tawhid and the afterlife	Cosmic sovereignty – metaphysical emphasis
Z09	Area beneath the Mihrab Muqarnas	TT01 (Qur'anic Verse)	Arabic	Thuluth	H1	D1	5	Verses on worship and tawhid	Final focus of worship
Z09	Area around the Mihrab	TT01 (Qur'anic Verse)	Arabic	Thuluth	H1	D1	5	Āyat al-Kursī and themes of prayer	Highest perceptual intensity

It can be observed that the inscriptions of the Imam Mosque constitute a multilayered spatial-semantic system structured around monumentality, publicity, and sacredness. Within this system, the following tendencies can be identified:

- Epigraphic intensity gradually increases from the public threshold toward the sacred centre.
- There is a strong parallel between monumental scale and the visual dominance of writing.
- Qur'anic texts assume a guiding role by being positioned along the visitor movement axes.
- Persian historical inscriptions may be understood as secondary layers that reinforce political representation and patronage.
- The highest level of semantic and visual intensity is concentrated in the mihrab and the domed space.

As a result, in the Imam Mosque, architecture is not merely a physical space for worship; rather, it is a system of meaning in which public authority and sacred order are represented together. The inscription programme functions as an ideological and theological instrument that guides spatial experience.

4.5. Spatial Organization and Inscriptions of the Hakim Mosque in Isfahan

Hakim Mosque is one of the most distinguished examples of four-iwan mosques from the late Safavid period. It has a four-iwan plan typology with an indirect entrance arrangement, characteristic of the late Safavid period (Figure 16). The spatial sequence of the building produces a gradual depth, beginning with a bent entrance passage, continuing toward the central courtyard, then the qibla iwan, and finally reaching the domed space and the focal point of the mihrab. While public and political axiality dominates in the Imam Mosque, the Hakim Mosque is characterized by an inward-oriented and gradual spatial concentration.

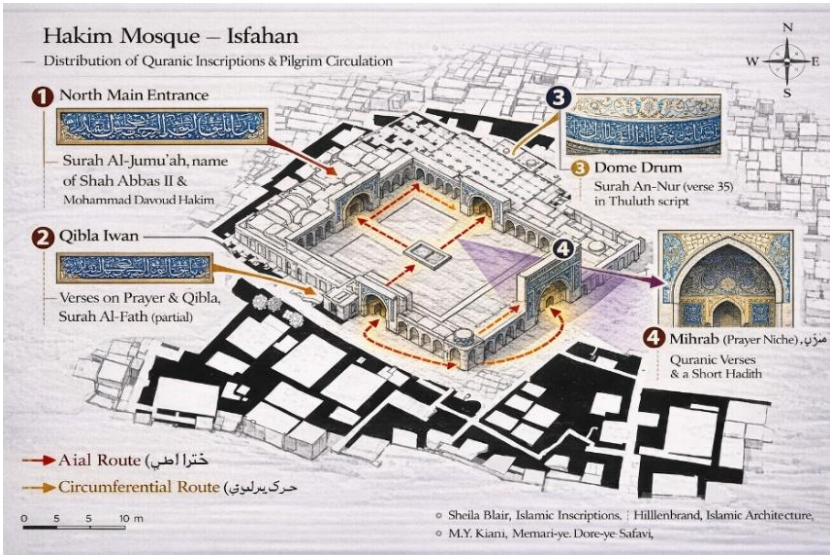


Figure 16. Analytical Scheme of Spatial Movement and Inscription Placement in the Hakim Mosque (by authors).

It can be stated that the inscriptions on the portals and spandrels generally consist of expressions of tawhid, the shahada, and short dhikr formulas (TT01–TT03) (Figure 17). Persian poems (TT06) are also reported to be present on the border bands of the eastern portal (Zemerşîdî, 2012). At this stage, writing functions as a threshold that declares the sacredness of the space. Although the visitor has not yet reached the courtyard, they are separated from the urban space through Qur'anic content and Persian poetry. This phase corresponds to the level of sensory and visual perception. The noteworthy point here is that Persian poetry is positioned only at the threshold. This indicates that, in the Hakim Mosque, the cultural layer is not carried into the sacred centre.

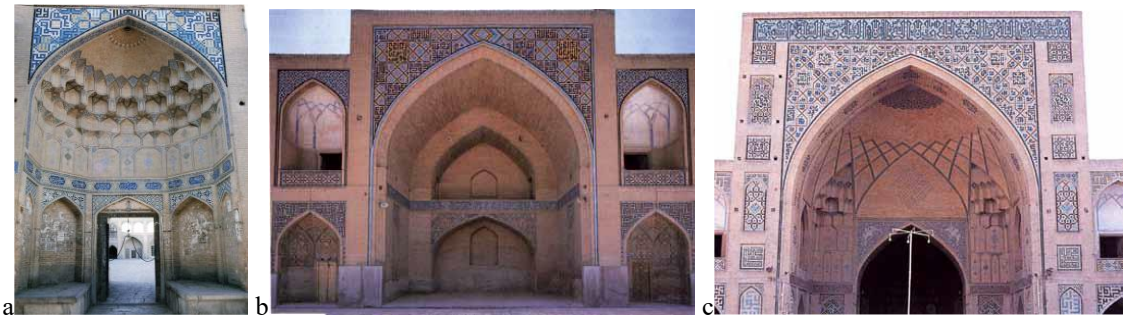


Figure 17. Hakim Mosque: (a) Z02, portal (Shayestefar, 2009), (b) Z04, central courtyard (Zemerşîdî, 2012), (c) Z06, qibla iwan (Zemerşîdî, 2012).

On the iwan surfaces surrounding the courtyard, the inscriptions in this section include verses calling for piety, prayer, and moral restraint. At this stage, reading does not take place from a fixed point, but within the continuity of circulation. The text is perceived peripherally; therefore, perception acquires not a static, but a temporal and movement-based character. As the visitor moves through the courtyard, meaning gradually intensifies.

In the southern iwan, the complexity of the inscriptions increases, and verses related to guidance and divine light come to the fore in terms of content. At this point, reading becomes axial; the gaze is fixed toward the qibla, and the complexity of the written form increases. A direct correlation can be observed between semantic intensity and the complexity of the script form. This stage represents the transition from visual perception to spiritual perception. In the domed space and the mihrab, the inscriptions reach the highest level of semantic intensity. Based on this, it may be argued that Persian appears at the thresholds as a form of cultural preparation, while Arabic is positioned along the qibla axis as a form of theological concentration.

Table 4: Hakim Mosque (MSK03) – Inscription.

Zone	Location	TextType	Language	Calligraphic Style	Height Band	Viewing Distance	Readability	Context	Semantic Function
Z02	Area beneath the Muqarnas of the Northern Portal	TT01 (Qur'anic Verse) + TT03 (Dhikr)	Arabic	Banna'i / Maʿqilī (Kufic)	H3	D2	3	Expressions of tawhid and the shahada	Doctrinal threshold – declaration of sacredness
Z02	Border Band of the Eastern Portal	TT06 (Poetry / Literary)	Persian	Nastaʿlīq	H2	D2	3–4	Persian poem praising the patron	Cultural–identity-based preparation
Z02	Spandrels of the Portal	TT01 (Qur'anic Verse)	Arabic	Banna'i	H3	D3	2	Divine names and short tawhid formulas	Spatial sacralization
Z04	Iwan Surfaces around the Courtyard	TT01 (Qur'anic Verse)	Arabic	Simple–Interlaced Banna'i	H2	D2–D3	3	Verses on piety, prayer, and moral restraint	Transition – cognitive intensification
Z04	Lāchkī of the Eastern Iwan	TT01 (Sacred Name Composition)	Arabic	Banna'i	H2	D2	3	"Muhammad," "Ali," and the Divine Names	Sectarian emphasis – visual repetition
Z06	Southern Iwan / Qibla Iwan	TT01 (Qur'anic Verse) + TT02 (Hadith)	Arabic	Mushkil / Mutadākhil Banna'i	H2–H3	D2	3	Verses on guidance and light; the hadith "I am the city of knowledge" "انا مدينة العلم"	Attachment – layer of walāya / spiritual authority
Z08	Domed Space / Dome Drum	TT01 (Qur'anic Verse)	Arabic	Banna'i	H3	D3	2	Verses on tawhid and the afterlife	Cosmic unity – symbolic sovereignty
Z09	Area beneath the Mihrab Muqarnas	TT01 (Qur'anic Verse)	Arabic	Mushkil Banna'i	H1	D1	5	Surah al-Ikhlas	Final tawhid – focus of worship
Z09	Area around the Mihrab	TT01 (Qur'anic Verse)	Arabic	Banna'i	H1	D1	5	Āyat al-Kursī and themes of worship	Highest readability – perceptual unity

It can be observed that the inscriptions of the Hakim Mosque are organized within a spatial-semantic hierarchy. Within this system, the following tendencies can be identified:

- Semantic intensity increases as the visitor approaches the qibla direction.
- There is a clear correlation between the formal complexity of writing and spatial deepening.
- The distribution of Qur'anic texts largely corresponds to the visitor movement route.
- Persian poems and panegyrics are positioned in threshold areas, reinforcing the cultural and identity-based dimension of the building. This indicates that, in the Hakim Mosque, Persian is located not along the qibla axis, but in threshold spaces; thus, the linguistic hierarchy overlaps with the spatial hierarchy.
- The peak of semantic concentration can be said to occur in the domed space.

4.5. Comparative Evaluation

The spatial analyses conducted on the Safavid-period mosques of Sheikh Lotfollah, Imam, and Hakim indicate that visitor movement is not merely a process of physical circulation, but rather produces a multidimensional experience involving visual, cognitive, and spiritual layers.

In the Sheikh Lotfollah Mosque, movement is conceived as an inward-oriented and individual experience. Through spatial breaks and the configuration of light, the visitor is detached from the physical world and directed toward an inner awareness. In the Imam Mosque, by contrast, movement has a collective and ceremonial character. Through monumental scale, axial order, and the organization of the central courtyard, the visitor is guided from the public realm toward the sacred centre. In the Hakim Mosque, movement offers a more modest and processual experience. Through spatial continuity and a configuration closer to human scale, the visitor is included in a gradual process of comprehension.These differences reveal that the experience of sacred space in Safavid architecture is not based on a single fixed scheme (Table 5). Rather, it produces diversified movement typologies through different spatial strategies.

Table 5: A Comparative Model of Spatial Movement and Perception in Safavid Mosques.

Mosque Name	Sheikh Lotfollah Mosque	Imam Mosque	Hakim Mosque
Spatial Element	entrance treshold	monumental portal	modest entrance
	transition corridor	entrance turn	intermediate courtyard
	domed interior space	central courtyard	transitional spaces
	mihrab zone	qibla iwan	side courtyards
		under-domed space	under-dome space
Movement Type	visual	visual	visual
	physical	physical	physical
	visual + spiritual	physical + spiritual	physical + mental
		visual	visual
	spiritual m	physical + spiritual	spiritual
Perception Type	directional perception	monumental perception	human scale perception
	inward orientation	directional fracture	process perception
	holistic spatial perception	perception of cosmic order	mental praparation
	sacred focal perception	focused attention	fragmented spatial
		perception of sublimity	inner calm
Spatial Mechanism	axis break	large scale and vertical emphasis	proportional simplicity
	spiral progression of light reduction	sudden axis change	spatial continuity
	intensification of light and symmetry	four-iwan symmetry	semi-open layering
	spatial internsification	perspective guidance	gradual openness
		vertical rise and acoustics	balanced proportions

Experience	separation from the worldly realm	religious splendor	humility
	inner journey	transition from public to sacred	gradual awareness
	mystical contemplation	collective sacredness	inner preparation
	spiritual peace	spiritual orientation	rhythmic experience
		social transcendence	

The findings indicate that architectural space was designed as an active system that guides the visitor experience. This typology systematically reveals the experience of sacred space through comparative analysis. Therefore, architectural space is not a passive background, but a dynamic system of meaning that organizes the sacred experience.

5. Conclusions

The comparative analyses conducted through the examples of the Sheikh Lotfollah the Imam and the Hakim Mosques suggest that the experience of sacred space is not limited solely to architectural form. Rather, it is produced through the coordinated interaction of movement patterns, perceptual orientation, and inscription programmes. The findings indicate that architectural space is not a passive background that merely accommodates visitor experience, but an active system of meaning operating across physical, visual, cognitive, and spiritual layers.

As a result of the analyses, three main movement typologies were identified:

- Inward-mystical movement: Sheikh Lotfollah Mosque
- Ceremonial-collective movement: Imam Mosque
- Processual-contemplative movement: Hakim Mosque

This typological distinction indicates that the experience of sacred space cannot be reduced to a single scheme; rather, it is produced through diverse perceptual scenarios shaped by different spatial strategies. As a result of this research, the following main conclusions have been reached:

- Spatial experience is formed through the simultaneous operation of architectural configuration and movement order.
- Visitor movement can be evaluated not merely as physical circulation, but as a multi-layered perceptual process involving cognitive and spiritual orientations.
- Epigraphic elements function beyond decoration; they serve as instruments of spatial orientation and the formation of sacred focus.
- The harmony between spatial organization and the inscription programme is one of the factors that determines the intensity of sacred experience.
- The perception of sacred space is constructed through a movement-based experiential scenario.

The study also demonstrates that the experience of sacred space can be understood as a modelable phenomenon. This model is not limited to the examples examined in this study; it can also be adapted to other religious buildings with similar historical and typological characteristics.

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