

Comparative comparison of architectural decorations of Safavid period schools in Isfahan

Case examples (Jeddah Bozorg, Sulaymaniyah, Kaseh Garan, Nim Avard schools)

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Date of submission: 2025/10/19 Revision: 2025/01/30 Acceptance: 2025/02/04

Detailed abstract

Introduction

The Safavid era (1501-1736) in Iran marked a period of significant artistic and architectural flourishing, deeply intertwined with the prevailing intellectual, spiritual, and social order of the time. Architectural ornamentation in this era served not merely as aesthetic embellishment but as a fundamental component in shaping the spatial identity and symbolic meaning of educational and religious buildings, particularly schools in Isfahan. The transfer of the capital to Isfahan by Shah Abbas I in the early 17th century transformed the city into a vibrant hub for art and architecture, leading to the construction of numerous richly adorned structures, including mosques, bazaars, palaces, and schools. Safavid schools, in particular, stand out due to their dual function as both religious and educational centers, making their decorations highly significant. These structures showcase a wide array of decorative techniques, such as mosaic tilework (Muqarranas), stucco carving (Gachbori), and various forms of calligraphic arts (Khattati). These elements collectively reflect the architects' profound attention to the spatial structure and artistic details, embodying the era's intellectual and spiritual beliefs.

Despite the considerable artistic and historical importance of Safavid school decorations, comprehensive comparative studies focusing on their ornamentation in Isfahan have been limited. This research aims to fill this gap by conducting a comparative analysis of the architectural decorations in four prominent Safavid schools in Isfahan: Jaddeh Bozorg, Soleymaniyeh, Kasehgaran, and Nimavard. The primary objective is to investigate the relationships among execution techniques, motif content, and the spatial structure of these decorations. This study seeks to answer two core questions: Firstly, what is the relationship between the decorative techniques and the content of motifs used in Safavid schools? Secondly, how do these architectural decorations relate to the physical structure and the educational-religious functions of these schools? By addressing these questions, the research endeavors to provide a deeper understanding of how ornamentation contributed to the meaning, spatial identity, and compositional order within these significant architectural complexes.

The historical context provided by previous studies highlights the rich tradition of architectural decoration in Iranian Islamic architecture. Researchers like Bemanian, Momen, and Sultan Zadeh have

examined tilework in various Safavid buildings, noting the prevalence of abstract geometric and vegetal motifs in schools like Chaharbagh, often paired with Kufic and Thuluth scripts. Other studies, such as those by Khani, Salehi Kahki, and Taghavinejad, have compared decorative elements in Ghayathieh Khargard and Chaharbagh schools, pointing out influences in geometric patterns and Kufic script, though spatial structures and hierarchy of decorations showed greater divergence. Furthermore, research by Khodabakhshi, Bemanian, and Amiri has explored the evolutionary trends in Timurid and Safavid school decorations, while Mohammad Zadeh and Alizadeh Mirarkalaei analyzed the metal decorations of the Chaharbagh school entrance. Mirzā Mohammad Sadegh Abolghasemi examined calligraphic inscriptions and artistic features in the Khan school. These studies collectively underscore the depth and complexity of Safavid ornamentation but often lack a focused comparative analysis across multiple prominent schools in Isfahan. This study intends to build upon this existing scholarship by offering a systematic comparative framework for understanding the intricate relationship between decorative elements and the functional and symbolic roles of Safavid schools.

Materials and Methods

This research employs a descriptive-analytical case study methodology, drawing upon both library research and field surveys. The initial phase involved extensive library research to establish theoretical foundations related to architectural decorations in Safavid-era schools, including identifying and classifying various decorative techniques and motifs. This preparatory step was crucial for understanding the historical context and the prevalent artistic conventions of the period. Following the library research, field surveys were conducted at the four selected case study schools: Jaddeh Bozorg, Soleymaniyeh, Kasehgaran, and Nimavard. During these surveys, visual documentation, including photographs, and direct observations were meticulously carried out to gather detailed information on the existing decorations.

The analysis proceeded in two main stages. First, a comprehensive comparison of decorative elements was performed for each school, focusing on specific criteria. This involved a detailed examination of:

- Execution Techniques: Categorizing methods such as mosaic tilework (Muqarranas), polychrome tilework (Hafrangi), brick-cut tilework (Ma'qeli), stucco carving (Gachbori), wooden decorations (Manabat and Mo'arra on wood), and stone carvings (Hajjari).

- Motif Content: Identifying the types of motifs used, including vegetal arabesques (Islimi), floral motifs (Khatayi, Boteh), geometric patterns, and figurative elements (though less common in schools).

- Calligraphic Styles: Analyzing the types of scripts employed, such as Thuluth, Kufic (Bana'i Kufic), and Nasta'liq.

-Loci of Ornament Concentration: Mapping the areas where decorations were most intensely applied, such as portals (sardars), iwans, and other prominent architectural features.

The second stage of analysis involved a comparative assessment across all four schools, identifying similarities and differences in their decorative practices. This comparative approach aimed to reveal systematic correlations between the chosen techniques and the artistic content. For instance, the study investigated whether specific tilework techniques consistently featured certain types of motifs or calligraphic styles. The findings from this comparative analysis were then interpreted in light of the theoretical frameworks established in the library research, enabling a deeper understanding of how these decorative choices reflected the broader intellectual and artistic systems of the Safavid period. The process was designed to systematically address the research questions by elucidating the relationships between decorative techniques, motif content, and the functional and spatial characteristics of the school buildings, ultimately leading to a comprehensive interpretation of their architectural and symbolic significance.

Findings

The detailed comparative analysis of architectural decorations in the four Safavid schools—Jaddeh Bozorg, Soleymaniyeh, Kasehgaran, and Nimavard—yielded several significant findings, revealing systematic correlations between decorative techniques, motif content, and their functional contexts.

1.Tilework Techniques and Motif Content:

Mosaic Tilework (Muqarranas) and Polychrome Tilework (Hafrangi): Jaddeh Bozorg and Soleymaniyeh schools predominantly utilized mosaic and polychrome tilework, characterized by their intricate and vibrant designs. The motif content in these schools was overwhelmingly dominated by vegetal arabesques (Islimi scrolls), elaborate floral motifs (Khatayi), and Boteh (paisley-like) patterns. These fluid, organic designs often conveyed spiritual and paradisiacal concepts, reflecting a preference for soft, dynamic ornamentation that enhanced the spiritual and visual richness of the spaces.

Brick-Cut Tilework (Ma'qeli): In contrast, Kasehgaran and Nimavard schools extensively employed brick-cut tilework (Ma'qeli), which inherently favors geometric patterns due to its construction method. Consequently, the decorations in these schools featured regular geometric patterns and structural Kufic inscriptions. This technique resulted in a more orderly, rational, and structured aesthetic, emphasizing mathematical precision and logical arrangement, which are often associated with intellectual pursuits and established rules.

2 .Calligraphic Styles and Decorative Techniques :

Thuluth Script: Thuluth script was frequently paired with mosaic and polychrome tilework, particularly in Jaddeh Bozorg and Soleymaniyeh schools. This script, known for its majestic and legible forms, adorned prominent areas such as main portals (sardars) and iwans, serving to convey religious texts and dedicatory inscriptions in a grand and accessible manner. The presence of master calligraphers like Mohammad Reza Emami further highlights the artistic sophistication of these inscriptions.

Kufic Script (Bana'i Kufic): Structural Kufic inscriptions, characterized by their angular and geometric forms, were predominantly found in conjunction with brick-cut tilework (Ma'qeli) in Kasehgaran and Nimavard schools. This pairing reinforced the geometric order of the spaces, often embedding sacred texts within the architectural fabric in a subtle yet powerful way.

3 .Stucco Carving (Gachbori):

Stucco carving was less prevalent in the sampled schools compared to tilework. Notably, in the Kasehgaran school, stucco carving was observed in the form of painted gachbori beneath the entrance iwan and in the muqarnas of the ceiling. This technique added a layer of artistic detail, particularly in areas where plaster could be sculpted and painted, showcasing intricate patterns that often complemented the tilework but were not as widespread.

4 .Wooden and Stone Decorations:

Wooden Decorations: Wooden elements, primarily in the form of elaborately carved doors, were significant. Jaddeh Bozorg and Nimavard schools featured double-leaf wooden doors, with Jaddeh Bozorg's door adorned with intricate marquetry. Kasehgaran's door, however, lacked such detailed ornamentation. These wooden elements contributed to the tactile and aesthetic experience of the entrances.

Stone Carvings (Hajjari): Stone carvings were consistently applied to the bases of columns and the lower parts of walls (azareh) across all four schools. These often included simple, vase-like patterns or plain surfaces, providing structural and aesthetic grounding to the buildings. While present in all schools, the specific designs varied, indicating a shared approach to stone ornamentation with individual stylistic interpretations.

5 .Loci of Ornament Concentration:

A consistent finding across all schools was the deliberate concentration of ornamentation on prominent architectural elements, such as main portals (sardars) and iwans. These areas, serving as transitional zones and focal points, were heavily adorned to create a powerful first impression and guide visitors, emphasizing the symbolic and functional significance of these entries. The inscriptions on the sardars frequently mentioned the founders, dates of construction, and religious verses, clearly articulating the purpose and patronage of the schools.

In summary, the findings indicate a clear intentionality in the application of decorative techniques and motifs. The choice between dynamic, vegetal designs (with mosaic/polychrome tilework and Thuluth script) and geometric, structured patterns (with brick-cut tilework and Kufic script) was not arbitrary. Instead, it systematically aligned with the desired aesthetic and symbolic expressions for different architectural components and functions within these educational-religious complexes. This systematic correlation underscores that the ornamentation was an integral part of the overall architectural design, reinforcing the meaning, spatial identity, and compositional order of Safavid school complexes.

Discussion and Conclusion

This research set out to conduct a comparative analysis of architectural decorations in Safavid-era schools in Isfahan, specifically examining Jaddeh Bozorg, Soleymaniyeh, Kasehgaran, and Nimavard. The primary aim was to understand the relationships among execution techniques, motif content, and spatial structure, and how these decorations related to the buildings' physical and educational-religious functions. The findings clearly demonstrate that the architectural ornamentation in these schools was far more than mere aesthetic embellishment; it played a fundamental role in shaping their spatial identity and symbolic meaning, embodying a profound intellectual and artistic integration.

Addressing the first research question regarding the relationship between decorative techniques and motif content, the study revealed a distinct and systematic correlation. In schools predominantly featuring mosaic and polychrome tilework, such as Jaddeh Bozorg and Soleymaniyeh, the motif content was overwhelmingly dominated by vegetal arabesques (Islimi scrolls), intricate floral designs (Khatayi), and Boteh motifs, often accompanied by elegant Thuluth script. These elements collectively created a soft, dynamic, and spiritually rich aesthetic, frequently evoking concepts of paradise and divine beauty. Conversely, in schools where brick-cut tilework (Ma'qeli) was the prevailing technique, specifically Kasehgaran and Nimavard, the ornamentation leaned heavily towards regular geometric patterns and structural Kufic inscriptions. This geometric approach emphasized order, mathematical precision, and rational design, aligning with a more structured and intellectual expression. This bifurcation in decorative style, consistently observed across the case studies, strongly indicates an intentional choice that reflected different aesthetic preferences, functional needs, or perhaps a chronological evolution within the Safavid period, suggesting a deliberate and meaningful artistic language.

Regarding the second research question concerning the relationship between architectural decorations and the physical/functional structure of the schools, the analysis revealed a direct and integral connection. The concentration of elaborate decorations on prominent elements like portals (sardars) and iwans was a consistent pattern across all four schools. These strategic placements served not only to enhance visual appeal but also to emphasize key transitional spaces and reinforce the sacred and educational functions of the buildings. The inscriptions found on these main entrances often detailed the patronage, construction dates, and religious texts, explicitly communicating the purpose and significance of the school. This deliberate application of ornamentation facilitated legibility of space, guided movement, and enriched the overall experience, strengthening the religious and educational identity of these complexes. The decorations, therefore, were not superficial additions but integral components that defined the character and conveyed the conceptual essence of the Safavid schools.

In conclusion, the study firmly establishes that the architectural decorations of Safavid schools in Isfahan represent an intentional synthesis of art, architecture, and religious thought. This synthesis was a conscious design decision, not an accidental outcome. The observed harmony between technique, content, and spatial context underscores a sophisticated understanding of how ornamentation could

amplify meaning, reinforce spatial identity, and contribute to the compositional order of these significant structures. The findings also suggest that the choices in decorative styles—whether fluid and organic or geometric and structured—were deeply rooted in the philosophical and theological underpinnings of the Safavid era, serving to transmit spiritual and cultural messages. Ultimately, Safavid school decorations are not merely artistic displays but powerful tools that shaped the functional and conceptual understanding of educational architecture in Safavid Iran. This research contributes to a deeper appreciation of these schools as exemplary instances of integrated architectural design, where every decorative element played a role in conveying the profound intellectual and spiritual aspirations of their time. Further research could explore the patronage influences and potential regional variations that might have contributed to these distinct decorative patterns.

Declarations

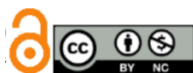
Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflicts of Interest: The authors declare no conflicts of interest regarding the publication of this paper.

Authors' Contributions: Raziye Ghanbari Safdar (1st author) was responsible for conceptualization, methodology, data collection (field surveys and library research), data analysis, and initial drafting of the manuscript. Roxana Abdollahi (2nd author) contributed to the supervision, critical review, and refinement of the manuscript, providing expert insights into architectural history and ornamentation. Both authors have read and agreed to the published version of the manuscript.

Acknowledgments: The authors would like to express their gratitude to the faculty and staff of the Department of Architecture and Urban Planning at the National University of Skills (NUS), Tehran, Iran, and the Department of Architecture at Qo.C., Islamic Azad University, Qom, Iran, for their support during this research.

Keywords: Architectural decorations, Safavid schools, tiling, decorative motifs, Isfahan



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