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Arabic calligraphy as mosque decoration: architectural significance in Indonesia

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Abstract

This research investigates the significant role Arabic calligraphy performs in Indonesian mosque building. Arabic calligraphy is valued for both aesthetic and spiritual purposes; it is a required element of Islamic architectural expression. Analyzing the several calligraphic scripts, mostly Thuluth, Kufi, and Naskh, why these letters are chosen, and how they are incorporated into architectural features such as domes, mihrabs, minbars, arches, and walls, the study analyzes at Emphasizing case studies of historically and culturally important mosques all throughout Indonesia, including in Java, Aceh, and South Kalimantan, the study employs a qualitative methodology. The results show that Arabic calligraphy not only improves the visual attractiveness of mosque exteriors and interiors but also provides a means of spiritual connection and cultural continuity, therefore preserving the religious identity of Muslim communities.

Keywords Arabic calligraphy, Mosque building, Indonesia, Thuluth, Kufi

Introduction

Arabic calligraphy is especially becoming recognized in architectural studies not only as a decorative element but also as a basic component of spatial planning and identity development especially in Islamic architecture. Scholars argue that by transcribing holy texts into tangible form, thereby transforming structures into graphic depictions of faith and including calligraphy into the architectural narrative. This method fits the concept of *parlante* architecture—that is, building with interlaced form and intent. Within mosques, calligraphy sets spatial hierarchies, controls mobility, and accentuates the spiritual surroundings. Arabic calligraphy should thus be positioned inside the architectural argument as a visual and semantic system that not only decorishes but also animates and sanctifies space.

Arabic calligraphy is a long-standing artistic medium especially important in Arab and Islamic countries. This sort of art transcends basic beauty with its religious and worship elements. The calligraphy included into Indonesian mosque building, the country with the biggest percentage of Muslims globally, shows a long tradition blending artistic expression with patriotism. This kind of art has been merged with local architectural traditions in Indonesia to create a unique combination of Arab Islamic and traditional forms.

Arriving in 13th-century Indonesia, Islam attracted intellectuals and Middle Eastern and South Asian businesspeople. With the swift spread of Islam, the construction of mosques became vital using Islamic architectural elements like calligraphy as cultural identifiers (Lotfy Mahmoud Saad 2017). Combining Islamic ideas with traditional Javanese architecture, early Indonesian mosques such as Menara Kudus Mosque and the Great Mosque of Demak display the distinctive Arabic script (Tajuddin et al. 2007). Designed to inspire and invigorate people visiting these holy sites, this decorative art not only highlights the visual splendour of Indonesian mosques but also represents religion (Ekhtiar 2018).

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Arabic calligraphy is essential for mosque design since it goes beyond mere decoration to reflect significant spiritual and intellectual dimensions. Its inclusion within mosque building is not haphazard; rather, it reflects a deliberate desire to create circumstances that inspire among the visitors dedication and introspection. Arabic calligraphy, with its fluidity and complex forms, has great visual appeal that helps to create the spiritual environment of mosques. This is clear in the way religious messages and values are expressed using calligraphy, therefore enhancing the cultural and spiritual experience of the audience (Haider 2021; Hussein 2017).

The construction of mosques heavily relies on Arabic calligraphy, transforming these spaces into sanctuaries of aesthetic and spiritual splendor. Calligraphy enhances the mosque's dual functions as a site for worship and instruction by including Quranic verses and sacred texts. This creative combination preserves and communicates Islamic cultural identification while improving mosque architectural attractiveness. The conscious architectural decision taken by the calligraphic inscriptions seen in mosques emphasizes the intimate relationship between art and spirituality in Islamic society (Fawaid and Sultoni 2022; Kamarudin et al. 2020).

Sometimes indigenous artistic expression in Indonesia is combined with Arabic calligraphy to produce a unique decorative language that accentuates the native cultural background. Using geometric precision and fluid patterns of Arabic lettering, Batik is a traditional Indonesian textile technique combines with Mos mosques include many calligraphic inscriptions and batik designs to improve the harmonic mix of artistic materials echoing Islamic and Indonesian civilizations. Batik designs define by complex patterns and symmetric arrangement. Arabic calligraphy in mosque decorations contrasts with the elegant and symbolic patterns of Toraja woodwork, well-known for their ornamental value.

Arabic calligraphy accentuates the delicate and symbolic patterns of Toraja carvings—known for their artistic complexity—in mosque decorations. Originally from the Sulawesi highlands, the Toraja tribe is well-known for their wood carvings and sculptures including often spiritual subjects and ancestral figures. Their cultural background is really outstanding. Arabic calligraphy combined with various regional creative elements enhances the visual attractiveness of the mosque and concurrently symbolizes cultural continuity and identification.

Knowing the complicated historical and cultural interaction between Islam and regional cultures helps one to appreciate the larger background in which Arabic calligraphy blossom in Indonesian mosques. This mix transforms Arabic calligraphy into its own Indonesian

decorative form, so providing the required foundation for teaching calligraphy. Examining numerous calligraphic forms and following historical roots helps us to better respect how this creative medium has helped to develop the specific architectural character of Indonesian mosques (Blair 2020; Grabar 1987).

Arab calligraphy has evolved via millennia of historical and cultural influence. Beginning with the geometric and angular Kufic letter used in early Quranic manuscripts and architectural embellishments, Arabic calligraphy developed into more fluid forms like the Hijazi script, which established the foundation for following styles. Early Qur'anic manuscripts using Hijazi and Kufic scripts laid the groundwork for later stylistic developments (Dutton 2004). With its sharp, little characters, the Thuluth script—famous for its big, graceful, curved letters—grew somewhat well-known over the Abbasid period alongside the practical Naskh script. The complex and sometimes imaginative calligraphy forms we know today were made possible by these highly polished techniques applied over the Ottoman period. This ongoing development underlines how important and flexible Arabic calligraphy is for Islamic cultural inheritance.

This study focuses on three popular calligraphic scripts found in Indonesian mosques: Thuluth, Kufi, and Naskh. Thuluth is distinguished by its flowing elegance, making it ideal for large-scale inscriptions; Kufi, with its angular and geometric structure, complements architectural elements such as friezes and borders; and Naskh, known for its clarity, is commonly used in Quranic manuscripts and smaller architectural details.

Since it helps to maintain the cultural identity of Muslims, calligraphy is a basic feature of Indonesian Islamic art history. The ongoing calligraphy tradition in mosque architecture guarantees that this rich artistic legacy not only survives but also thrives with contemporary inspirations. By adding calligraphy into numerous architectural and decorative elements, Indonesian Muslim communities maintain a direct link with their customs and so embrace fresh creativity and interpretation. This helps calligraphy to link historical legacy with present artistic expression (Dasuki et al. 2017; Lotfy Mahmoud Saad 2017).

Building design in modern architecture is very much shaped by Arabic calligraphy. It is used as a beautiful accent in both inside and outside areas and gives a unique artistic touch. Combining modern building with calligraphy creates an incredible mix between old and new. Calligraphy is applied on walls, ceilings, even building façade for spectacular visual effects.

Reflecting Indonesia's rich Islamic past and artistic traditions, Arabic calligraphy remains a basic element of mosque architecture in that country. Its application in

mosque decorations not only enhances visual attractiveness but also serves as a visual reminder of religious and spiritual values (Alashari et al. 2019; Sahragard 2015). Arabic calligraphy in Indonesian mosques combines traditional Arab styles with local cultural elements to create a harmonic adaptation between Islamic legacy and national identity, so strengthening the spiritual ties of Muslim communities and so affirming the value of art as a means of expression of faith and culture.

This study is to investigate the development and techniques of calligraphy applied in mosque decoration as well as how the combination of Arabic calligraphy with local cultural components offers a distinctive architectural character. It also aims to stress how calligraphy enhances the spiritual and visual experience for mosque visitors and show the relevance and adaptation of Arabic calligraphy in the framework of modern architecture in Indonesia. In order to conduct this research, the mosques that were picked were chosen due to their historical significance, distinctive architecture, and the manner in which they combine calligraphy with the artistic traditions of the local community. These criteria were carefully considered to capture the rich cultural and religious diversity found in Indonesian mosque design.

Methodology

This study employs a qualitative research methodology to investigate the role of Arabic calligraphy in mosque architecture in Indonesia. The methodology includes the following steps:

1. Case Selection:

The mosques included in this study were selected based on three primary criteria: (1) historical and religious significance; (2) geographical representation across different Indonesian regions reflecting local culture, examples include the Menara Kudus Mosque, which amalgamates Kufi calligraphy with Hindu-Buddhist influences, and the Great Mosque of Demak, which showcases Thuluth inscriptions in harmony with Javanese aesthetics; and (3) clear visual application of Arabic calligraphy, particularly in Thuluth, Kufi, or Naskh scripts. These criteria were designed to capture the diverse expressions of Islamic architectural identity shaped by calligraphy across Indonesia.

This study focuses on three calligraphic styles: Thuluth, Kufi, and Naskh. Thuluth is characterized by its large, elegant, and flowing letters, suitable for monumental inscriptions such as domes and mihrabs. Kufi, in contrast, is known for its angular and geometric form, ideal for architectural elements like friezes and borders. Naskh,

developed for legibility, is typically used for Qur'anic manuscripts and smaller architectural inscriptions.

2. Data Collection:

This study utilized both primary and secondary data sources for collection:

- a. Primary Data: The researchers performed on-site observations of calligraphic components in the chosen mosques, recording the styles, materials, and techniques utilized. Furthermore, interviews were conducted with artisans and mosque builders to clarify the cultural and spiritual forces that shaped the incorporation of calligraphy in mosque building.
 - b. Secondary Data: The researchers examined historical documents, archival pictures, and academic literature to clarify the development and importance of Arabic calligraphy in the building of Indonesian mosques.
- ### 3. Data Analysis:

A thematic analysis was performed to identify patterns and recurring themes in the use of Arabic calligraphy. An analysis of the artistic and functional attributes of mosques uncovers historical and regional disparities. An interdisciplinary approach was utilized to comprehensively comprehend the role of calligraphy, incorporating perspectives from Islamic art, architecture, and history.

4. Visual Documentation:

High-resolution pictures and detailed images of calligraphic features, including domes, arches, and walls, were gathered. Diagrams and pictures were employed to illustrate the distribution and utilization of calligraphy in mosque building.

Results, findings, and discussion

Historical background

Scholars from the Middle East and South Asia first brought Islam to Indonesia in the thirteenth century via commerce. Building mosques with Islamic architectural features including calligraphy became imperative as Islam expanded. Early Indonesian mosques include the Menara Kudus Mosque and the Great Mosque of Demak highlight calligraphic inscriptions (Ahmad 2016; Nisayah et al. 2024) by showcasing traditional Javanese architecture mixed with Islamic ideas.

Considered as the oldest mosque in Indonesia, the Great Mosque of Demak is a first instance of the blending of Islamic and regional architectural forms (Fig. 1). Designed by the Wali Songo, the nine saints who brought Islam to Java, this mosque with calligraphic inscriptions



Fig. 1 Mosque of Demak

reflecting Islamic principles and local customs displays late 15th-century architecture. Found all over the mosque, including the mihrab and minbar, these inscriptions show the early calligraphy adaption in Indonesian mosque building (Wiryomartono 2009).

Comparably, constructed in the sixteenth century, the Menara Kudus Mosque is a well-known example of early Arabic calligraphy applied in mosque decoration. Arabic inscriptions demonstrate the harmonic merging of many cultural aspects since they cover the minaret of the mosque, which resembles a Hindu-Buddhist temple tower. These early works show how Arabic calligraphy was applied not just as a decorative feature but also as a tool for spreading religious ideas, therefore supporting Islamic values (Derman 1998; Harun et al. 2022; Tajuddin et al. 2007).

Many historical and cultural elements shape the way Arabic calligraphy is used in Indonesian mosques over millennia. Different Islamic nations, notably the Ottoman and Mughal empires, provide fresh creative inspiration mixed into their own civilizations (Fig. 2). Complex calligraphic scripts were applied into mosque building at this time to improve its spiritual and aesthetic attractiveness (Khatubi and Sijelmassi 1994).

Calligraphic designs from Middle Eastern origin started to show clear impact on Indonesian mosque

building in the seventeenth and eighteenth century. Wearing on mosque exteriors and interiors, this age offered fresh scripts like Thuluth and Naskh. Reflecting the great cultural contacts between Indonesia and the Islamic world, the calligraphic inscriptions during this period featured not only religious literature but also lyrical expressions and moral precepts (Şafadî and Safadî, 1978).

During the colonial era, in the 19th and early twentieth centuries, mosque architecture underwent major transformation including calligraphy application. Arabic calligraphy survived in blossom despite political and social upheavals, changed to fit new materials and techniques given by colonial powers. Special calligraphic legacy of Indonesian mosques was enhanced during this period by distinctive designs blending Islamic themes with European creative elements (Blair 2020).

Arabic calligraphy like other traditional skills saw a rebirth after independence. This time there was a fresh enthusiasm for conserving and extending Indonesia's rich cultural legacy. Schools and calligraphy classes opened themselves, and artists started experimenting with fresh ideas and techniques. Modern mosque building began to convey cultural pride and national identity by means of calligraphy (Nasr 1987).



Fig. 2 The Sultan Ahmed Mosque in Istanbul

Based on data from the Indonesian Ministry of Religious Affairs and supported by architectural documentation collected during the field study (Nisyah et al. 2024), approximately 60% of mosques in Indonesia incorporate Arabic calligraphy in their architectural elements.

Figure 3 illustrates the percentage of mosques that integrate Arabic calligraphy into their architectural

design. The percentages were derived from field surveys and secondary data obtained from architectural records and mosque documentation throughout various regions in Indonesia. Out of Indonesia’s 740,000 mosques overall, 444,000 use Arabic calligraphy. 60% of Indonesian mosques so include calligraphy into their architecture. The table graphically highlights the general acceptance and important part Arabic calligraphy

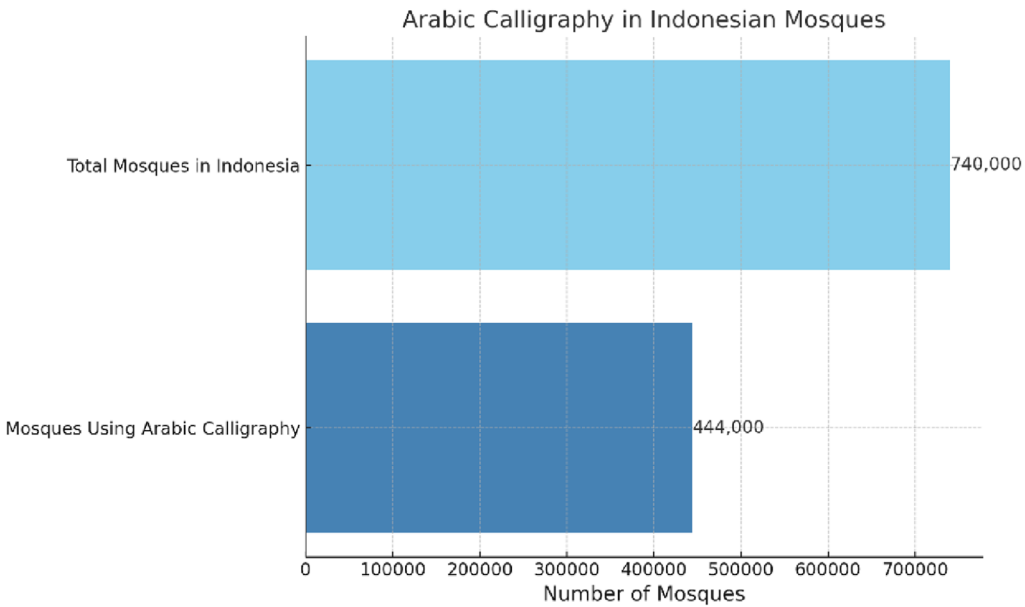


Fig. 3 Arabic Calligraphy in Indonesian Mosques

plays in improving the spiritual and architectural ambience of Indonesian mosques.

Styles and techniques

Thuluth and Kufi are the two primarily used styles in Arabic calligraphy in Indonesian mosques. Usually found in huge inscriptions on domes and arches, large, cursive characters describe Thuluth (Blair 2020). Often seen in friezes and borders, Kufi's angular and geometric forms reflect Built from wood, stone, and tiles—each of which adds to the visual and tactile richness of the mosque's interior and outside spaces—these designs represent varied materials (Ekhtiar 2018).

Thuluth script

Thuluth's elegant, flowing form helps large-scale architectural elements fit it. This construction features many inscriptions on domes, mihrabs (prayer niches), and minbars (pulpits). Appropriate for use at holy sites, the rounded outlines and lengthy strokes of the script exude grandeur and majesty (Safadi 1978). From the intricate details of a mihrab to the great surfaces of a mosque dome, the dynamic and flowing character of the Thuluth script permits it to be used in numerous architectural situations (Ekhtiar 2018).

Thuluth script is used in several modern and antique Indonesian mosques. Among the largest mosques in Southeast Asia, the Istiqlal Mosque in Jakarta has inner walls and a dome with excellent Thuluth calligraphy

(Fig. 4). Rendered in gold against a blue and white background, the inscriptions create a visually striking and spiritually motivating image. This Thuluth script program emphasizes the mosque's architectural beauty as well as its religious value.

The Baiturrahman Grand Mosque in Aceh is another remarkable illustration of how the Thuluth script influenced building of Indonesian mosques (Fig. 5). Thuluth inscriptions underlining key Quranic texts and Islamic principles abound in the main prayer hall of the mosque. Apart from their artistic value, these inscriptions serve as a constant reminder of the spiritual aim of the mosque, therefore strengthening the link between the people and their faith.

Renowned for its grandeur and modern construction, the Al-Akbar Mosque in Surabaya also integrates Thuluth calligraphy into its ornamental scheme (Fig. 6). Thuluth inscriptions painstakingly created to radiate respect and tranquillity cover the mosque's mihrab. Apart from the mosque's architectural qualities, the calligraphy creates a harmonic surroundings that enhances the worship experience.

Another remarkable example is the Masjid Agung Semarang, whose interior design features Thuluth calligraphy (Fig. 7). The calligraphy in the image is written in the Thuluth script and features a verse from the Qur'an, specifically Surah Al-Baqarah (2:144). This verse speaks about the change of the Qibla direction toward the Kaaba in Mecca, a significant moment in Islamic history. The



Fig. 4 The Istiqlal Mosque in Jakarta

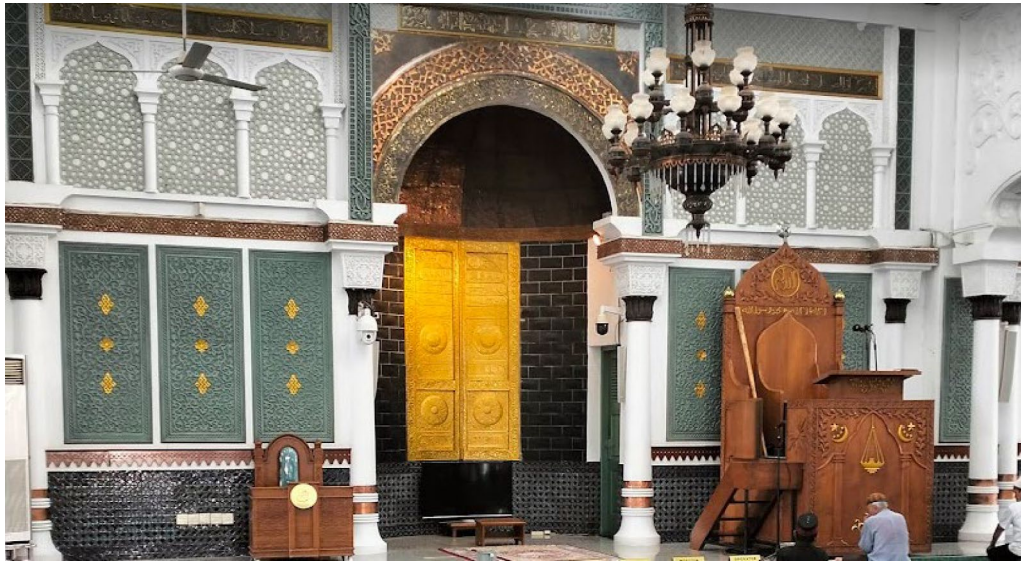


Fig. 5 Baiturrahman Grand Mosque in Aceh

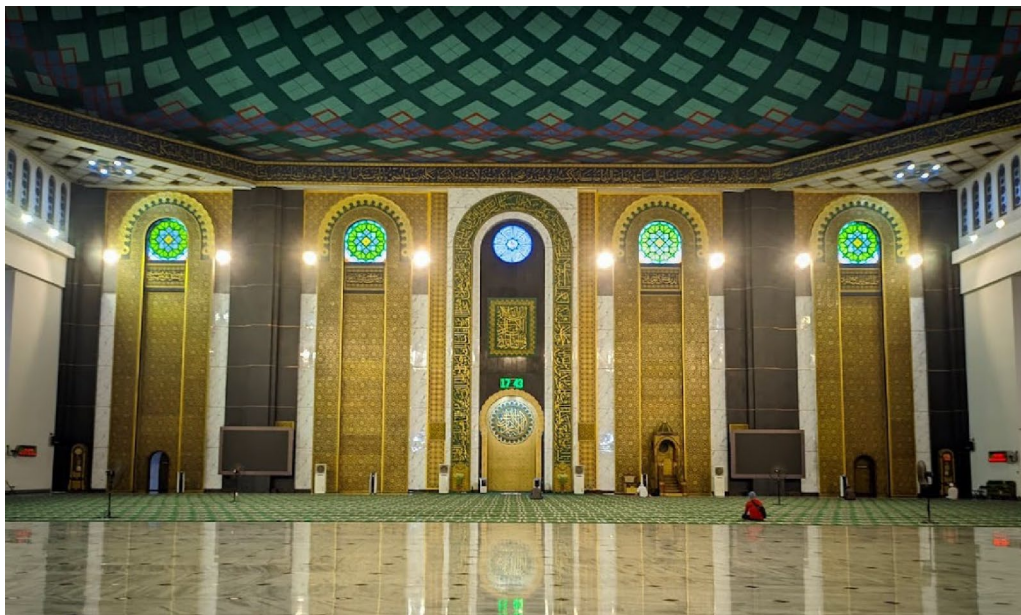


Fig. 6 The mihrab of Al-Akbar Mosque in Surabaya, adorned with Thuluth calligraphy inscribed in gold against a green background. The script quotes Surah Al-Baqarah: 177 and is framed with floral motifs

elegant curves and elongated strokes of the Thuluth style enhance the spiritual ambiance of the mosque, blending religious significance with artistic beauty. Its placement on a circular architectural element reinforces the sense of unity and direction in Islamic worship, serving both as a decorative and symbolic feature within the Grand Mosque of Central Java. Carefully designed to enhance

the architectural grandeur, the mosque's walls and ceiling calligraphic inscriptions. These inscriptions serve not only as decorative accents but also as spiritual reminders since they link the worshippers to the holy words of the Quran.

Not only in bigger, national mosques but also in smaller, local ones scattered all over Indonesia, the Thuluth script



Fig. 7 The open circular structure in the courtyard of the Grand Mosque of Central Java (Masjid Raya Jawa Tengah), Semarang, adorned with Qur'anic calligraphy in Thuluth script. The inscription features Surah Al-Baqarah (2:144)

is employed. Usually found on the mihrabs and minbars, these inscriptions create key sites of spiritual significance. The popularity of the Thuluth script shows its worth in Indonesian Islamic art and architecture, therefore stressing its versatility and universal appeal.

Kufi script

Kufi script clearly counters Thuluth's flow with its angular and geometric shapes. Strong lines and hard construction of this work fit architectural elements such as friezes, borders, and large lettering. Often used to frame or enhance other architectural features, the geometric correctness of the script suits quite well for decorative purposes in mosque buildings (Blair 2020; Ekhtiar 2018).

Indonesia's mosques both inside and outside feature Kufi script extensively. Stone-carved Kufi inscriptions on the outside walls and arches of the Aceh Baiturrahman Grand Mosque, for example, highlight significant Quranic books and thereby accentuate the architectural grandeur of the mosque. Visually striking from the more curved Thuluth alphabet used elsewhere in the mosque, Kufi writing has very angular lines.

The Menara Kudus Mosque is another famous instance of Kufi calligraphy in mosque decoration among the first mosques built in Java (Fig. 8). Kufi inscriptions on the minaret and outside walls highlight the mosque's original architectural mix of Islamic and Javanese elements. Apart from enhancing the look of the mosque, these inscriptions respect the rich cultural tradition of the surroundings.



Fig. 8 The Menara Kudus Mosque Demak

Work by Kufi finds use both within and outside of the Surabaya Al-Akbar Mosque (Fig. 9). The geometric forms of the script are quite appropriate for the mosque's present architectural style, therefore combining modern design with antique calligraphy. The Kufi inscriptions

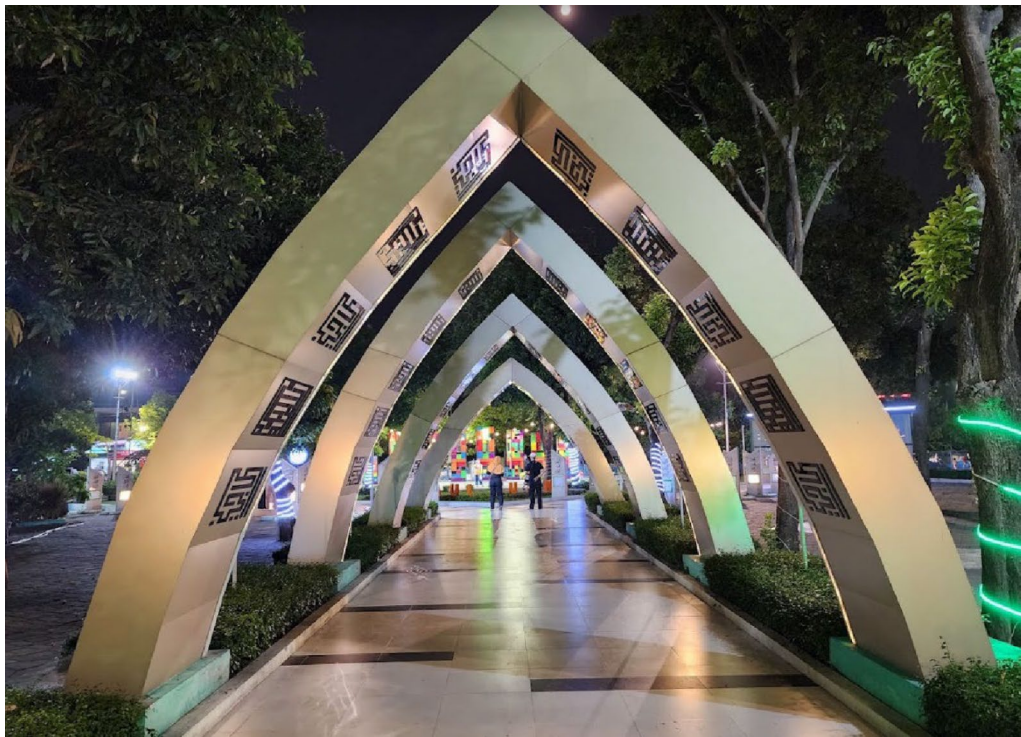


Fig. 9 The Al-Akbar Mosque in Surabaya

stress important Quranic books and help the mosque to be generally polite and spiritually active.

Kufi calligraphy also appears in Sultan Suriansyah Mosque architectural architecture in Banjarmasin, South Kalimantan (Fig. 10). Reflecting the adaptation

of Kufi writing to local materials and craftsmanship, the inscriptions are especially visible on the stone carvings and wooden panels of the mosque. These calligraphic elements enhance the visual and spiritual milieu of the



Fig. 10 Sultan Suriansyah Mosque Banjarmasin

mosque, therefore generating an aesthetically pleasing and very important surroundings.

The way Kufi calligraphy is used in the architectural framework of Indonesian mosques emphasizes its significance as both an artistic and spiritual element. The architectural components of the mosques find equilibrium and stability in the geometric and strong calligraphy patterns. The great popularity of Kufi script in mosque decoration underscores its importance in communicating religious teachings and hence enhancing the spiritual environment of these holy locations.

Thuluth and Kufi are the two primarily used styles in Arabic calligraphy in Indonesian mosques. Usually found in huge inscriptions on domes and arches, large, cursive characters describe Thuluth. Often seen in friezes and borders, Kufi's angular and geometric forms reflect Built from wood, stone, and tiles—each of which adds to the visual and tactile richness of the mosque's interior and outside spaces—these designs represent varied materials.

Applications in mosque architecture

Mihrab and Minbar

The mihrab—a niche pointing Mecca's direction—and the minbar, the platform used for sermons These elements serve religious purposes as well as major sources of creative expression. Many Indonesian mosques beautifully ornament the mihrab with Quranic verses in Thuluth script, usually set against a floral or geometric pattern.

One particularly remarkable example is the mihrab of the Great Mosque of Demak, which emphasizes significant Quranic phrases bearing Thuluth inscriptions

(Fig. 11). Apart from their decorative importance, these inscriptions serve as a constant reminder of the spiritual objective of the mosque, therefore maintaining the bond between the members and their faith. The intricate calligraphy accentuates the architectural beauty of the mihrab and acts as a focal point stimulating eye attention and introspection.

Kufi writing also addresses the minbar of the Menara Kudus Mosque, thereby respecting its historical and cultural value (Fig. 12). By sharp contrast to the mihrab's flowing lines, the strong, geometric shapes of the script demonstrate the versatility of Arabic calligraphy in architectural ornamentation. Teaching religious values to the congregation, the calligraphy of the minbar serves both aesthetically and usefully.

The Al-Akbar Mosque in Surabaya features a mihrab covered with Thuluth script, promoting peace and respect (Fig. 13). Designed with great care by gifted calligraphic artists, the inscriptions enhance the spiritual environment of the mosque and provide worshippers with aesthetically and spiritually transformative experience. In this context, using calligraphy highlights its importance as a spiritual and artistic tool.

The mihrab and minbar of the Sultan Suriansyah Mosque is ornamented with Thuluth and Kufi characters, therefore emphasizing the harmonic mixing of many calligraphic techniques. The intricate inscriptions preserve the historical and cultural past of the mosque, therefore creating an aesthetically arresting and spiritually important area. For those who pray, the calligraphy serves as the focal point enabling closer connection with their beliefs.



Fig. 11 Mihrab of The Great Mosque of Demak

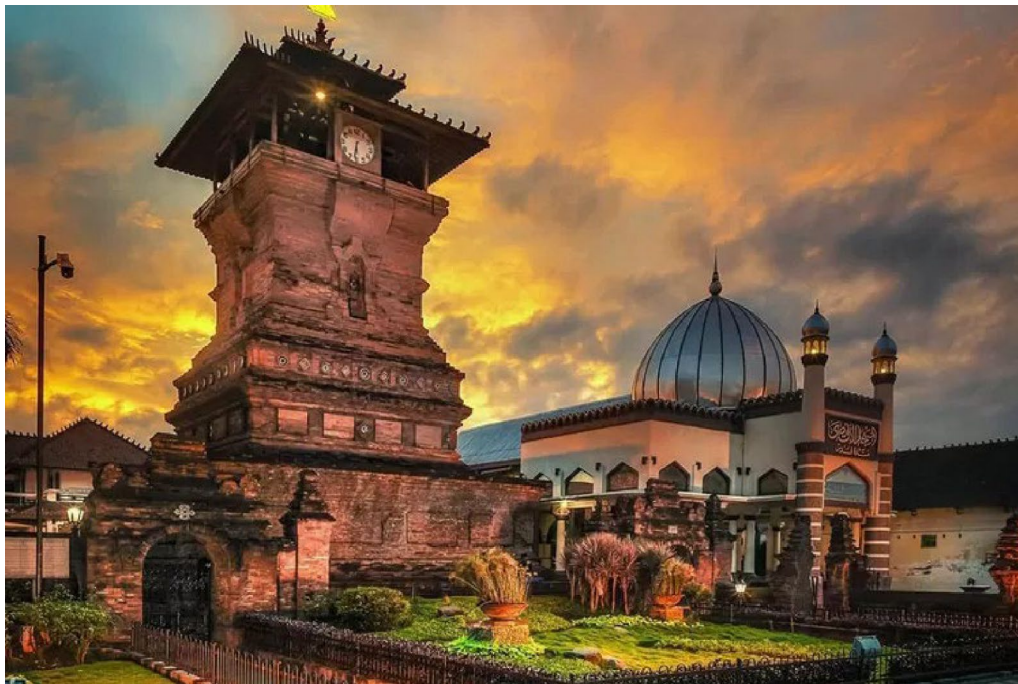


Fig. 12 The Menara Kudus Mosque



Fig. 13 Mihrab of The Al-Akbar Mosque in Surabaya

The Baiturrahman Grand Mosque in Aceh also displays calligraphic embellishment on its mihrab and minbar. The Thuluth inscriptions direct attention to significant Quranic texts, therefore creating a visually appealing and spiritually inspiring environment. The use of calligraphy in these parts emphasizes its importance in improving the mosque's physical and spiritual surroundings.

Apart from regular mosques, modern ones in Indonesia also have calligraphy in their mihrabs and minbars, in line with history. The Istiqlal Mosque in Jakarta, for example, features Thuluth writing, radiating grandeur and devotion for its mihrab. The calligraphic inscriptions enhance the architectural appeal of the mosque and provide its guests with a visually and spiritually uplifting experience.

Calligraphy is used in mihrabs and minbars in both great mosques and smaller, community mosques throughout Indonesia. These inscriptions, which usually act as spiritual centres, enable believers to strengthen their bond with their faith. Great frequency of calligraphy in these parts shows its importance in Indonesian Islamic art and architecture.

The inclusion of calligraphy into mihrabs and minbars demonstrates its significance as both an artistic and spiritual component. The intricate inscriptions emphasize the architectural grandeur of some sections, creating visually arresting and spiritually important

spaces. Blair (2020) emphasizes the importance of calligraphy in transmitting religious themes and supporting the mosque's spiritual aim in these contexts.

Domes and arches

Calligraphy on arches and domes abound in Quranic passages or names of Allah, therefore encouraging respect and spirituality. Thuluth lettering used here enhances its majesty and clarity. For instance, the clear Surah Al-Ikhlâs written in gold Thuluth script on a blue background in the Istiqlal Mosque dome in Jakarta marks the skies.

Another amazing example is the Dome of Istiqlal Mosque in Jakarta, whose dome bears Thuluth script-adorned decoration embossed with Quranic texts (Fig. 14). Designed with great attention by talented calligraphic artisans, these inscriptions create visually arresting and spiritually uplifting environments. Top of the dome calligraphy accentuates the architectural grandeur of the mosque and gives worshippers artistically and spiritually breathtaking experience.

Surabaya Dome of the Al-Akbar Mosque features exquisite calligraphic inscriptions in Thuluth script (Fig. 15). These inscriptions underline important Quranic lines, therefore promoting reverence and spirituality. For guests of the dome, the calligraphy serves as the primary point allowing them to approach their faith.

Underlining the way Thuluth script is included into the architectural design, the Masjid Agung Semarang

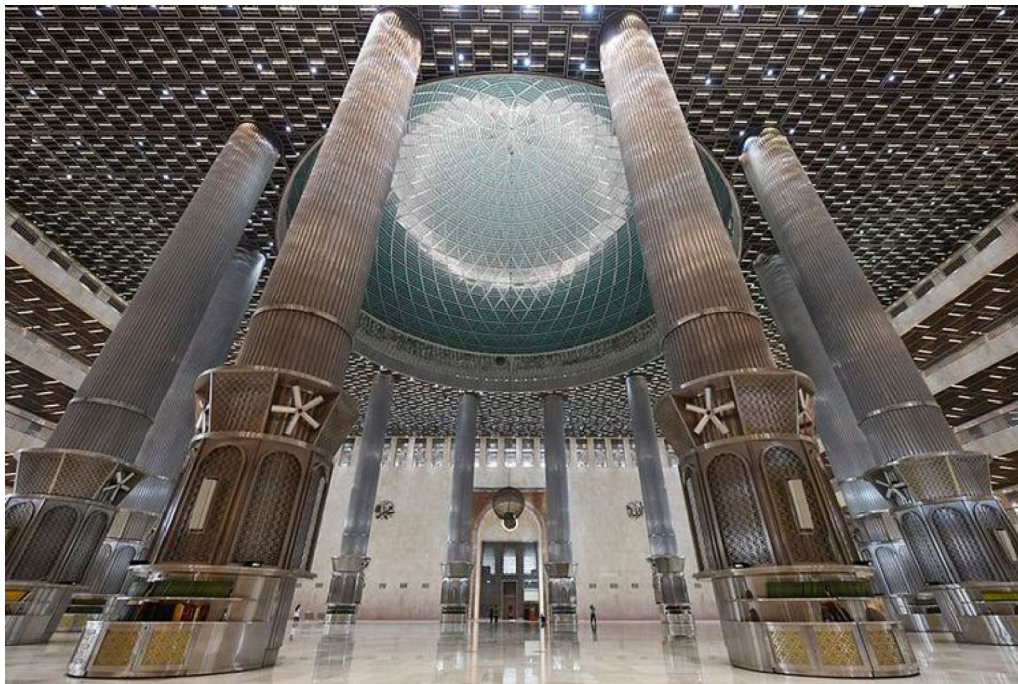


Fig. 14 Dome of Istiqlal Mosque in Jakarta

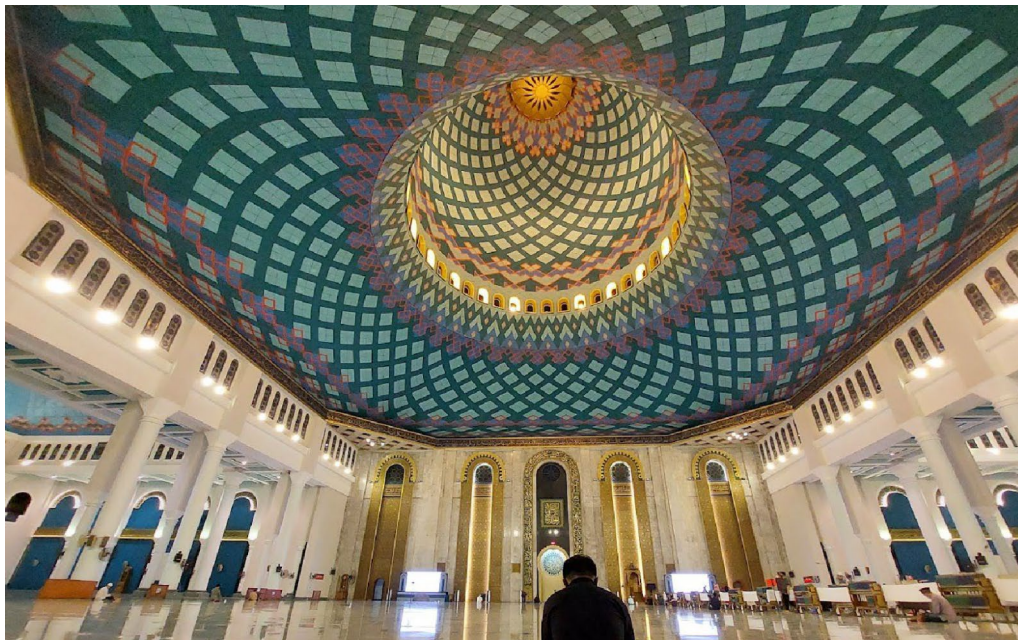


Fig. 15 Dome of the Al-Akbar Mosque

also features calligraphic marks on its dome. The inscriptions improve the spiritual and visual surroundings of the mosque, therefore producing an aesthetically beautiful and spiritually meaningful surroundings.

Apart from domes, Indonesian mosques include calligraphy stacked on top of one another arches. For example, Thuluth calligraphy on the arches of the Istiqlal Mosque in Jakarta produces a breathtaking and spiritual scene. The calligraphic inscriptions improve the mosque's architectural attractiveness and offer its visitors a spiritually and creatively motivating experience.

Additionally underlined Aceh's Baiturrahman Grand Mosque is calligraphy on significant Quranic texts created in Thuluth script. The strikingly beautiful surrounds the inscriptions create add to the architectural grandeur of the mosque.

Calligraphic inscriptions on the Al-Akbar Mosque of Arches of Surabaya enhance the decorative and practical features of the surroundings. For its readers, the Thuluth script offers architectural grandeur of the mosque extra respect and spiritual resonance.

Applied on the Sultan Suriansyah Mosque's arches and dome, calligraphy accentuates the harmonic oneness of many architectural features (Fig. 16). The inscriptions emphasise important Quranic teachings, therefore producing a physically beautiful and spiritually inspiring surroundings. Not only are calligraphy seen in big mosques but also in little, community mosques dotted around Indonesia on arches and domes. Usually having spiritual

value, these inscriptions help members of their faith to get closer. The tremendous popularity of calligraphy in these works points to its suitability in Indonesian Islamic architecture and art.

Including calligraphy into arches and domes highlights generally its importance as a spiritual and artistic tool. The complex inscriptions draw attention to the architectural grandeur of some areas, therefore producing aesthetically pleasing and spiritually meaningful environments. Calligraphy emphasises in these settings its value as a creative and spiritual tool. The detailed inscriptions draw attention to the architectural elegance of specific locations, therefore producing visually attractive and spiritually significant surroundings. Under these conditions, calligraphy emphasises its significance in spreading religious ideas and so supports the spiritual goal of the mosque.

Walls and ceilings

Calligraphic writings abound on the walls and ceilings of Mos mosques for both ornamental and instructional uses. Frequent with Quranic poetry, hadiths, and religious terminology, these inscriptions for their readers serve as ongoing reminders of Islamic ideals and beliefs. Many times, the location and style of these inscriptions are noted as enhancing the spiritual and aesthetic surrounds of the mosque.



Fig. 16 Dome of the Sultan Suriansyah Mosque

Underlying the walls of the Istiqlal Mosque in Jakarta, Thuluth script inscriptions highlighting significant Quranic verses span These especially carved inscriptions are placed to create harmonic visual flow around the mosque. The wall calligraphy helps believers to stay constantly inspired and meditating, therefore deepening their connection to the holy.

Surabaya's Al-Akbar Mosque's ceiling and walls also feature several very beautiful calligraphic decorations.

The Thuluth script inscriptions are supposed to emphasize the architectural grandeur of the mosque, therefore generating a visually harmonic and spiritually uplifting surrounds. For Christians in their spiritual journey, the calligraphy serves both decorative and educative purposes.

Covering Aceh's Baiturrahman Grand Mosque, magnificent calligraphic calligraphy highlighting key Quranic verses and Islamic teachings Thuluth and Kufi letter use

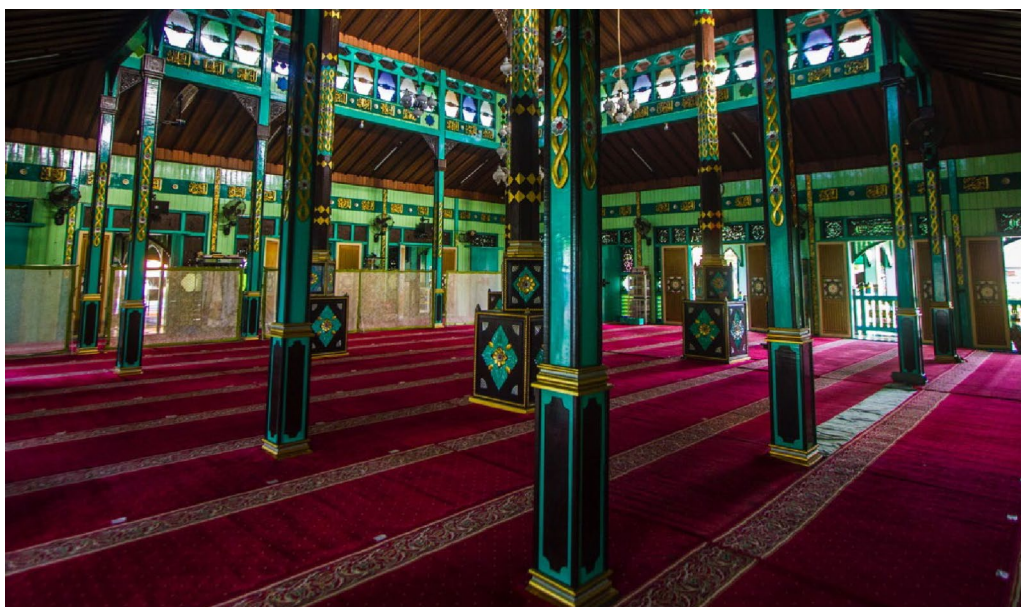


Fig. 17 Wall of The Sultan Suriansyah Mosque in Banjarmasin

creates a dynamic interaction of forms and textures, therefore enhancing the visual complexity of the surrounds (Fig. 17). The Sultan Suriansyah Mosque in Banjarmasin shows clear calligraphic lettering on its timber panels and stone sculptures. For those who pray, the calligraphy serves as a focal point enabling them to approach their religion more closely. Sometimes the Kufi script underlines important Quranic passages, therefore creating visually beautiful and spiritually significant environments. The calligraphy allows Muslims feel loyalty and respect as well as helps them to appreciate the architectural splendor of their mosque.

The Masjid Dian Al Mahri additionally generates a visually harmonic and spiritually good environment by including calligraphic calligraphy on its walls and ceilings (Fig. 18). The Thuluth script inscriptions are expertly created to highlight the architectural elements of the mosque, therefore enhancing its complete spiritual and visual appeal.

Discussion

Integration of Arabic calligraphy into Indonesian mosque architecture

Arabic calligraphy creates the decorative accent that harmonizes architectural form with spiritual meaning, therefore defining the character of Indonesian mosques. Calligraphy included into mosque building for arches, mihrabs, and domes transforms these buildings to become cultural monuments expressing both Islamic devotion and local history. Especially relevant for the local aesthetic in the Indonesian context, where

Islam occasionally combines with regional artistic traditions, calligraphy becomes a sign of religious expression. Among others in the Islamic world, Indonesian mosques stand out for their mix of form with intention, therefore producing a unique architectural character based on both faith and cultural uniqueness.

Arabic calligraphy is a complex phenomena with significant congruence of aesthetic, spiritual, and cultural components that is included into Indonesian mosque building. This talk will look at how calligraphy has formed the architectural identity of Indonesian mosques and improved the larger cultural and religious environment, therefore addressing the most basic consequences and importance of this integration.

Arabic calligraphy determines much of the visual and spiritual quality of Indonesian mosques. Apart from its beauty, calligraphy gives Islamic ideals a method of expression, therefore determining the architectural character of every mosque. As demonstrated by the link between the Arabic script and native creative traditions, calligraphy's use in Indonesia displays religious commitment and cultural variety. Thuluth and Kufi scripts are included into the construction of famous mosques as the Menara Kudus Mosque in Jakarta and the Istiqlal Mosque in Jakarta to demonstrate how these forms accentuate the holy environment while nevertheless adhering to local architectural guidelines. The clarity of its influence on the architectural and cultural character of mosques highlights the need of calligraphy in Indonesian Islamic art and architecture.



Fig. 18 Wall of Dian Al Mahri Depok

Arabic calligraphy is not just ornamentation but also a major statement of Islamic faith and identity in mosque construction. The integration reveals a deliberate desire to create environments encouraging ethnic pride and personal spiritual reflection. Quranic inscriptions on domes and mihrabs provide visual and cognitive clues of heavenly truths that emphasize the mosque's twofold function as a site of devotion and education. By adding calligraphy into the architectural features of mosques, the Menara Kudus Mosque in Jakarta and the Istiqlal Mosque also exhibit the fundamental link among art, spirituality, and practicality. This highlights the rather crucial role calligraphy plays in mosque building.

One cannot overestimate the artistic worth of Arabic calligraphy used in mosque building. Its presence transforms structural elements into outstanding works of art, therefore improving the utilitarian as well as the aesthetic features of the space. Therefore, calligraphy is quite crucial for creating the architectural identity and spiritual surroundings of the mosque. Using complex Thuluth and Kufi scripts on domes, arches, mihrabs, minbars, walls, and ceilings offers the full architectural experience visual perfection.

Common in important architectural features, Thuluth lettering is known for its graceful and flowing form. It is particularly suitable for inscriptions on mihrabs and domes since its rounded forms and lengthy strokes radiate grandeur and majesty. The way the Thuluth script is used at the Istiqlal Mosque in Jakarta and the Baiturrahman Grand Mosque in Aceh shows how aesthetically pleasing and spiritually uplifting surrounds the calligraphic inscriptions create (Blair 2020; Ekhtiar 2018; Nasr 1987).

Strong, geometric lines in Kufi script give a harsh yet complementary contrast to Thuluth's flow. In mosques like the Menara Kudus Mosque and the Al-Akbar Mosque in Surabaya, where it highlights the architectural components by generating a sense of structure and order, its angular lines and stiff construction fit decorative purposes such as friezes, borders, and monumental inscriptions quite beautifully. This script is quite noteworthy.

Thuluth and Kufi scripts combined dynamically in mosque design produce a visually rich tapestry that invites guests and worshippers. Reflecting the fundamental ideas of Islamic art and architecture, this link not only improves the architectural traits but also shows harmony and balance (Kaoudja et al. 2020).

The many changes in architectural details and aesthetic features of Thuluth and Kufi scripts help to explain their choice for usage in Indonesian mosques. Usually found in large-scale constructions including mihrabs and domes, Thuluth is known for its fluid grace. It brings grandeur and a spiritual elevation. Because of its angular and

geometric elements, kufi works well on borders, friezes, and inscriptions stressing structure and order. Particularly well-known both pre- and post-independence, these designs represented the modernism of mosque construction and the influence of Islamic kingdoms. Naskh script is less widespread even if it also appears in some mosques; its smaller scale and major use in manuscripts instead of large-scale inscriptions define it. More study on this historical evolution and regional variations in script use should allow one to better understand the greater context of calligraphy in Indonesian mosque building.

Though to a lesser extent, Naskh script also adds to the calligraphic environment of Indonesian mosques, even if Thuluth and Kufi scripts predominate. Particularly fit for simple Quranic texts or tiny inscriptions, Naskh stands out for its concision and clarity. Its use is noted in specific mosques where it highlights the more dramatic and graphic Thuluth and Kufi scripts. The summary of interview findings regarding script preferences among Indonesian mosque artisans is presented in Table 1.

Among the numerous styles of Arabic calligraphy, respondents noted Thuluth and Kufi as the most regularly utilized ones in mosque building. The elegant, flowing form of Thuluth suitable for large inscriptions set on walls and domes. The superb appearance, according to informants, improve worshippers' spiritual and visual experience. On the other hand, Kufi is chosen for its geometric correctness and architectural frame fit. "Is ideal for stone carvings and borders," one Banjarmasin craftsmen noted. Other scripts, such as Diwani or Ruq'ah, are less favored because of their complex or cursive traits, which are deemed more fit for manuscripts than for monumental construction.

The choice of script styles also reflects broader religious influences, particularly the predominance of the Shafi'i school of Islamic jurisprudence in Indonesia. This school emphasizes the importance of visually transmitting Qur'anic knowledge in sacred spaces. Informants consistently highlighted the theological and pedagogical motivations behind the selection of Thuluth and Kufi, noting that these scripts fulfill both religious and aesthetic functions. The continued use of these styles illustrates a shared cultural and spiritual framework that binds diverse Muslim communities across the Indonesian archipelago.

Spiritual significance

Apart from their visual value, calligraphic inscriptions on mosques have great spiritual significance. Arabic calligraphy found in mosque building is a visual representation of the divine words of the Quran, not only ornamentation. Every line and curve in the script is designed to

Table 1 Summary of qualitative interview findings on script preferences in Indonesian mosques

No	Informant	Mosque location	Position/Profession	Relevant quote	Preferred calligraphic style
1	Informant 1	Al-Akbar Mosque, Surabaya	Calligrapher	"Thuluth script is preferred because it visually commands attention and conveys majesty."	Thuluth
2	Informant 2	Sultan Suriansyah Mosque, Banjarmasin	Mosque ornament craftsman	"Kufi is ideal for stone carvings and borders due to its angular symmetry."	Kufi
3	Informant 3	Menara Kudus Mosque	Mosque caretaker and imam	"The use of Kufi here is part of preserving historical aesthetics linked to local heritage."	Kufi
4	Informant 4	Baiturrahman Grand Mosque, Aceh	Local calligraphy lecturer	"While Thuluth dominates the dome, smaller scripts like Naskh are sometimes used for side panels."	Thuluth & Naskh
5	Informant 5	Istiqlal Mosque, Jakarta	Interior art supervisor	"Large-scale inscriptions are almost always done in Thuluth for visibility and elegance."	Thuluth
6	Informant 6	Great Mosque of Semarang	Freelance calligrapher	"Scripts like Diwani or Ruq'ah are not suitable for monumental settings because they are too ornamental."	Thuluth; Ruq'ah (non-preferred)

respect these holy books and turn architectural features into means of spiritual introspection and dedication. Arabic calligraphy is considered essential in shaping the interior aesthetic and spiritual aura of mosque spaces (Othman and Zainal-Abidin 2011).

For example, frequently seen in the inscriptions on mihrabs and minbars are important Quranic verses acting as continual reminders of Islamic principles. These inscriptions center the mosque and direct worshippers' focus toward the spiritual messages, therefore strengthening their link to their faith. Through its visual and literary richness, the complex calligraphy of the Menara Kudus Mosque and the Great Mosque of Demak accentuates this spiritual purpose, so improving the worship experience.

Calligraphic inscriptions on arches and domes improve the spiritual environment of mosques even more. Apart from their ornamental value, the massive inscriptions on the domes of the Al-Akbar Mosque and the Istiqlal Mosque function as spiritual guides drawing followers into a more profound state of meditation and respect. Often using Quranic phrases or the names of Allah, these inscriptions serve to remind believers of the transcendent character of their faith and hence create a feeling of divine presence.

For the walls and ceilings of mosques, calligraphy has spiritual significance as well since inscriptions act as constant reminders of Islamic principles and teachings. Carefully placed and built, these inscriptions create an immersive environment that fosters spiritual ideas and allegiance. Presenting worshippers with a visually and

spiritually uplifting experience, the great calligraphic decorations at the Istiqlal Mosque and the Baiturrahman Grand Mosque best capture this immersing quality (Blair 2020; Dasuki et al. 2017; Baer 1998).

Cultural heritage and preservation

Islamic art is not only distinguished by Arabic calligraphy but also by Indonesia's cultural legacy depends on it. Its involvement in mosque building helps to preserve ancient creative forms and techniques, thereby allowing their passing to next generations. Respect of the vast artistic legacy gathered over millennia and cultural identity define Indonesia's Muslim populace.

The requirement of Arabic calligraphy in preserving the religious and cultural purity of the Muslim community drives the tradition most likely to persist in Indonesia in mosque decorating. The inscriptions enhance the interaction among members by helping to creatively portray Quranic ideas and values, therefore reinforcing their beliefs. By fusing Islamic aesthetics with local knowledge, calligraphy most fairly reflects Indonesia's tremendous creative legacy. Batik inspired calligraphic patterns highlight the adaptability of this art medium in maintaining cultural value. The contemporary application of Arabic calligraphy also reflects its dynamic evolution and relevance in modern Islamic art (Alashari et al. 2020). This cultural combination helps mosques to be more aesthetically pleasing and promotes their tribute to the rich history of Indonesia. The Menara Kudus Mosque shows this mix of Hindu-Buddhist architectural elements with Kufi

inscriptions, therefore stressing the adaptability of calligraphy in depicting regional cultures.

Inspired by several Islamic kingdoms and cultural interactions, the calligraphy development in Indonesian mosques exposes a constant process of cultural synthesis and adaptation. From different historical periods, new scripts and styles including Thuluth and Naskh demonstrate the dynamic character of this art form and its capacity to absorb many influences while preserving its basic spiritual and aesthetic aspects (Hussein 2017; Sahragard 2015; Weitzel 2005; Yunita 2022).

Particularly Arabic calligraphy, the post-independence resurgence of traditional arts highlights Indonesia's new zeal for safeguarding her cultural past. Schools and calligraphy schools have been set up to forward this art form; modern calligraphers still find inspiration in classic forms even as they investigate different modes of expression. This continuous research guarantees us that the rich calligraphic legacy of Indonesian mosques remains vivid and relevant in the present (Moustapha and Krishnamurti 2001).

Calligraphy included into mosque building also acts as a symbol of cultural pride and national identity. Modern mosques include the Al-Akbar Mosque in Surabaya show a dedication to honoring cultural legacy while embracing modern architectural trends by using classic scripts and designs. Celebrating Indonesia's rich cultural and religious legacy, this mix of modernism and history produces a distinctive architectural character.

Thematic analysis of calligraphic applications

Two of the most important components in a mosque, the mihrab and minbar have architectural as well as religious uses. Often the prominent point of a mosque's inside is the mihrab, a niche pointing Mecca's direction. Usually it features complex calligraphic inscriptions highlighting Quranic texts, therefore accentuating the spiritual atmosphere of the room. The mihrab of the Great Mosque of Demak has complex Thuluth writing, which accentuates the holy ambiance of the prayer section.

Another important piece sometimes with calligraphic ornamentation is the minbar, a pulpit from which sermons are spoken. For example, the Menara Kudus Mosque boasts a Kufi script minbar. This mix of utilitarian and decorative uses emphasizes the need of calligraphy in delivering religious teachings and improving the internal visual attractiveness of the mosque.

Many Indonesian mosques feature lots of arches and domes, usually utilized as canvases for big calligraphic inscriptions. The Istiqlal Mosque in Jakarta is among the best specimens; its dome predominantly shows Surah Al-Ikhlâs in gold Thuluth calligraphy set against a blue

background. This emphasizes also the beauty and spiritual value of the mosque.

Calligraphy of arches serves a similar function. Thuluth lettering on the arches of the Baiturrahman Grand Mosque in Aceh produces an aesthetically arresting and spiritually inspiring scene. Regular application of Quranic verses or Allah's names, these inscriptions help to define the fundamental spiritual setting of the mosque.

Most mosques' walls and ceilings abound in calligraphic inscriptions for both artistic and educational purposes. These symbols serve as constant reminders of Islamic principles, therefore generating an immersive surroundings that promotes spiritual introspection. Stressing important Quranic words, Thuluth script inscriptions cover the walls of the Istiqlal Mosque, therefore producing a harmonic visual flow across the mosque (Blair 2006; Etikan 2011; Al-Obaid 2005; Baer 1989).

Surabaya's Al-Akbar Mosque has rather large calligraphic designs on its walls and ceilings. The architectural grandeur of the mosque should be emphasized in the Thuluth script inscriptions, therefore establishing a visually harmonic and spiritually uplifting environment. These inscriptions serve both beautiful and informative functions since they enable believers in their spiritual walk to satisfy both.

As current calligraphers inspired from historical techniques and research new forms of expression explore new avenues, the practice of including Arabic calligraphy into mosque building is always changing. This development shows the dynamic nature of calligraphy as a means of expression and its ability to change with architectural surroundings (Féhervári 1972; Alashari et al. 2019; Baer 1989; Khalifa and Dardier 2020).

Modern Indonesian mosques could use calligraphic features mixing modern design ideas with old methods. One famous example is the Al-Akbar Mosque in Surabaya, which boasts calligraphic inscriptions painstakingly created to emanate respect and peace. This combination of modernism with heritage strengthens the architectural attractiveness of the mosque and supports its spiritual relevance (Hamzah 2011; Kurfi 2017; Kaoudja et al. 2019; Khajavi 2018).

Modern calligraphic artists also look at new materials and processes, so generating more opportunities for calligraphy inclusion into mosque building. Thanks to inventive materials and advanced technologies, more complex and durable calligraphic designs are made feasible, therefore ensuring that this art form remains modern and vibrant in the present (Kornfeld 2018).

Future studies could explore the following:

- Comparative analyses of Arabic calligraphy's integration across different regions in Indonesia.

- The influence of Islamic schools of thought (mazhab) on calligraphic styles and preferences.
- The evolving role of calligraphy in modern mosque architecture, particularly in relation to emerging materials and technologies.

Conclusion

Reflecting the rich Islamic culture and artistic history of Indonesia, Arabic calligraphy is still basic element of mosque building in the country. By means of numerous forms and applications, calligraphy not only enhances mosques but also supports their spiritual goal. Calligraphy in mosque decoration will probably always be a treasured practice as Indonesia develops since it serves to retain the religious and cultural identity of its Muslim population.

Apart from being beautiful additions in Indonesian mosques, the calligraphic inscriptions there reveal spiritual dedication and cultural legacy. Designed with great attention by talented artisans, these inscriptions guarantee that the sacred writings are shown with the finest dignity and grace. Calligraphy applied constantly in mosque building indicates a profound regard of Islamic ideals and a determination to protect cultural legacy.

Many architectural features of mosques, as different case studies have shown, use Thuluth and Kufi scripts to create a visually and spiritually uplifting environment. Calligraphy inserted into domes, arches, mihrabs, minbars, walls, and panels transforms these structures from architecturally beautiful to a dynamic mix of forms and textures. This rich legacy of Arabic calligraphy in mosque decorating guarantees that, in the current era, the cultural legacy of Indonesian Islamic art stays lively and relevant.

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Author contributions

Moch Wahib Dariyadi: Conceptualization, data collection, interview analysis, writing—original draft. Nurul Murtadho: Literature review, editing, supervision. Ibnu Samsul Huda: Visual documentation, field verification, methodology. Abd Rauf Tan Sri Hassan: Theoretical framework, validation, critical review. All authors read and approved the final manuscript.

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Declarations

Availability of data and materials

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Competing interests

The authors declare that they have no competing interests.

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