

Original article

DO THE PLANIFICATION CHARACTERISTICS HELP IN DECODING THE PATRONAGE AND CHRONOLOGY OF THE ZINCIRLI MOSQUE IN GREEK SERRES?

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Abstract:

The patronage and construction date of the Zincirli mosque in Serres, Greece have long been contested. This interdisciplinary study integrates historical inquiry, architectural analysis, and dendrochronological dating to re-evaluate the mosque's origins. Through archival research, detailed on-site documentation, and comparative stylistic assessment, this investigation clarifies the mosque's position in Ottoman architectural history. Dendrochronology indicates the felling date of timber used in its construction as 1492 CE. However, the mosque's architectural form— notably its domed prayer hall set within an octagonal drum, multi-tiered portico, and projecting mihrab apse—closely aligns with a corpus of 16th-century mosques attributed to the school of the chief imperial architect Mimar Sinan. Furthermore, its construction exhibits a distinctive synthesis of classical Ottoman planning and Byzantine masonry techniques, notably in the application of cloisonné. This hybrid character, combined with the monument's imposing scale and refined craftsmanship, suggests patronage by a high-ranking Ottoman official or member of the dynastic family around the mid-16th century. The discrepancy between the scientific date and the architectural evidence is plausibly resolved by the common practice of timber reuse. As the earliest known example of this mature Ottoman architectural synthesis in Greece, the Zincirli mosque represents a significant milestone in the evolution of imperial mosque design and underscores the complex cultural interactions that shaped the built environment of the Ottoman Balkans. This research demonstrates the value of interdisciplinary methodologies in resolving longstanding art historical debates.

1. Introduction

The Greek city of Serres (Ottoman Siroz) [1-7] is the second most important and largest city and center in the Central Macedonia region after its capital, Thessaloniki [8], figs. (1-a & b). It was entirely and finally conquered 14 Rajab 785 AH/ Sep. 19, 1383 AD by the first conquerors of Thrace and Rumelia, Çandarlı Kara Halil Hayreddin Paşa (d. 1387 AD) and the conqueror Gazi Evrenos Bey (d. 1417 AD) [9] The first mosque built in Serres by Çandarlı Hayreddin Paşa was known as the *Eski* “*atîque*” mosque [5] Evliya Çelebi (d. 1682 AD) has preserved the construction inscription, in which he reported in Arabic that read: "In the name of God the Merciful, the Compassionate, the Compassionate, the Merciful, to God the Almighty, this blessed mosque was built and operated in the time of Sultan Murad bin Orkhan, by the Çandarlı Halil bin 'ali who needs the beneficent of Allah, may Allah forgive all of them, in the year 787 AH [1385 AD]" [10],

figs. (1-c & d). This mosque remained until its burning due to an enormous fire that the city witnessed in 1636 and 1720 AD; it was restored and rebuilt after that by the second Mahmud Khan in 1252 AH/1836-1837 AD, according to the reconstruction Ottoman inscription, a clear copy of which is fortunately preserved [7]. After the Bulgarian occupation of the city in 1912- 1913 AD, they converted it into a Bulgarian church and demolished the minaret. With the city's annexation to Greece in June 1913, the mosque returned to Muslims in a grand celebration, with the construction of a new minaret [7]. By 1923 AD, the terms of the Treaty of Lausanne were implemented, under which the population was exchanged; the authority of the mosque was transferred to the National Bank of Greece in 1924 AD, and was rented and used as a café, music hall and cinema. In 1937 AD, the Mosque was demolished as part of the development of the area [8].

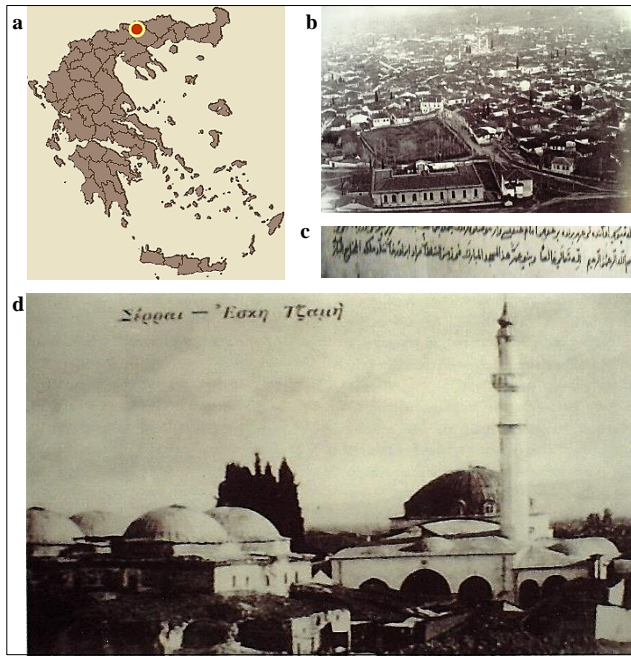


Figure 1 a, a map showing the location of Serres in the Central Macedonian region [11], b, Serres in the last years of Ottoman rule [7], c, a scrap of the Evliya's manuscript that cites the Arabic foundation text of the Eski "atīque" mosque [10], d, the Eski "atīque" mosque at Serres before its destruction in 1937 AD. [7]

However, Anatolian Turks settled in the city after the city's conquest in 1383 AD. [12]. According to a census record dated 1478 AD, Muslims inhabited 25 neighbourhoods; 22 were named after people to whom Friday mosques or small mosques belonged. Also, they gave the same names to the neighbourhoods where they were located. Citing each neighborhood begins with the name of the mosque's *Imam*, then the number of houses, widows, and single men. The total number of Muslim houses was 535 (about 2,675 people), in addition to 75 widows and 28 single men. The census then cites the neighbourhoods and houses of non-Muslims, with a total of 282 adult men who must pay the *jizya* (about 1410 people) in addition to 64 widows and three singles, paying 7209 *akce* [9]. Serres had a distinguished Ottoman mint; the oldest known coin is a silver *akce* dated 822 AH/1419-1420 AD, during the reign of Sultan Mehmet Çelebi. There is a valuable document in the census record of the city of Serres, dated 1478 AD, which includes a document entitled *Jamā'at Darbakhānah* (= Mint staff), which includes the name of the supervisor of the work at the mint, whose name is accompanied by the title of *Şāhib 'iyār*, assisted by 13 people with the title of *Ustādh*, and twenty workers, and the document mentions a note that all workers at the mint were exempted from 'awariḍ taxes or any new taxes by the Sultan's order from 'awariḍ taxes or any new taxes [13]. Evliya Çelebi provided a detailed description of the city of Serres, which he visited in Ramadan 1078 AH / February-March 1668 AD. [10] He mentions that "the city has 12 mosques, all magnificent buildings with domes covered with lead," some of which he described in some detail and others he summarized. He said: "If we wanted to describe all these buildings, we would have to write a volume called the *Book of Charitable Endowments*," Evliya mentioned the abundance of *çeşme* which were distributed on all sides of

the city, as well as the *Sebils*, including 70 in the *Souq* and within the neighbourhoods, the most famous of which is the Selçuk Sultan's one. It is worth mentioning that the city's *Bedesten*, a market with four axial doors and covered with nine domes, sells the finest of various goods. There are also five public baths in the city, the oldest of which is the Çandarlı Kara Halil Hayreddin Paşa one. Evliya also describes the city's houses, *Ribā'*, Khans, Bridges, and *Imarets*. Throughout Ottoman history, Serres served as a prestigious residence for the families of the Ottoman sultans. Selçuk Sultan (1469-1508 AD), daughter of Sultan Bayezid II (1481-1512 AD), lived there, and Sultan Suleiman the Magnificent (1520-1566 AD) even stayed there for a period during his campaign in the context of the Ottoman-Venetian War (1537-1540 AD) [7]. The city's association with these significant figures and its role as an educational hub for great Ottoman poets further solidifies its historical importance. The city of Serres suffered during the Balkan Wars. It joined Greece under the Treaty of London in 1913, and its Muslim population was exchanged with the Christian Greek population of Anatolia according to the Lausanne Treaty of 1923 [8]. The most important Ottoman monuments [14], that exist in Serres are the *Bedesten* [15,16], (which works now as the city's archaeological Museum), the police station, the train station, the court building (which is currently the governorate building), the military hospital, the remains of four public baths, *I'dadiya med-rese* (a preparatory school), the *türbe* of Ismail Pasha, governor of Serres along with the *Yusuf Mukhlis Paşa sebil* annexed to the *türbe*, and an aqueduct attributed to the Çandarlı Kara Halil Hayreddin Paşa, and three Friday-mosques: Mehmed Bey, Mustafa Bey, and the one discussed in this paper; the *Zincirli Mosque* [18].

2. Methodological Study

This study employed a comprehensive, interdisciplinary methodology to investigate the origins, patronage, and construction chronology of the Zincirli mosque in Serres, Greece. The research framework integrated four primary investigative strands: historical and archival research, architectural documentation and analysis, dendrochronological dating, and comparative stylistic assessment. The methodological workflow was designed to triangulate evidence from diverse sources, enabling a more robust and nuanced interpretation of the mosque's contested history.

2.1. Historical and archival research

A thorough review of primary and secondary historical sources was conducted to establish the historical context of Serres under Ottoman rule. This included: 1) Examination of Ottoman tax registers (*tahrir defterleri*), travel accounts (*seyahatname*), census records, and endowment deeds (*vakfiyes*) relevant to the city and its pious foundations. 2) Analysis of early 20th century scholarship and modern historiography concerning Ottoman monuments in Greece. 3) Critical evaluation of existing theories regarding the mosque's patronage, with particular attention to the works of Kiel [5], Lowry [13,19] and Hartmuth [20].

2.2. Architectural documentation and analysis

A detailed architectural survey of the Zincirli Mosque was carried out in situ to record its plan, structural system, con-

struction techniques, and decorative elements. The process involved: **1) Metric survey:** Manual and digital measurement of the mosque's overall dimensions, prayer hall, portico, wall thicknesses, and key architectural features (e.g., mihrab apse, window openings, portal). **2) Photographic documentation:** Systematic photographic recording of the exterior and interior, focusing on construction details, masonry patterns, vaulting systems, and surviving decorative finishes. **3) Spatial and formal analysis:** Interpretation of the planimetric organization, spatial hierarchy, volumetric composition, and the relationship between the prayer hall and the surrounding portico. Special attention was paid to features indicative of architectural style and period, such as the dome transition, column capitals, and arch.

2.3. Dendrochronological analysis

To obtain an absolute date for the construction phase, samples from the mosque's timber structural elements (roof beams) were subjected to scientific dendrochronological examination. This involved: **1) Extraction of core samples from accessible wooden members.** **2) Laboratory analysis of the tree-ring sequences, which were cross-referenced with established regional and master chronologies for the Balkans and Anatolia.** Interpretation of the felling date of the trees, providing a terminus post quem for the construction or renovation of the mosque.

2.4. Comparative stylistic analysis

The architectural data gathered from the Zincirli mosque, figs. (2) were systematically compared with a corpus of securely dated Ottoman mosques, particularly those from the 16th century associated with the chief imperial architect Mimar Sinan and his school. The comparative analysis focused on: **1) Typological similarities:** Plan configuration (e.g., domed square prayer hall with multi-storeyed porticoes), treatment of the mihrab area (rectangular exterior projection), and minaret placement. **2) Stylistic affinities:** Details such as the design of portals, window frames, vaulting solutions, and the use of specific decorative motifs. **3) Construction techniques:** Assessment of masonry methods (e.g., cloisonné stonework combined with brick) to identify potential links to Byzantine building traditions or specific Ottoman provincial practices.

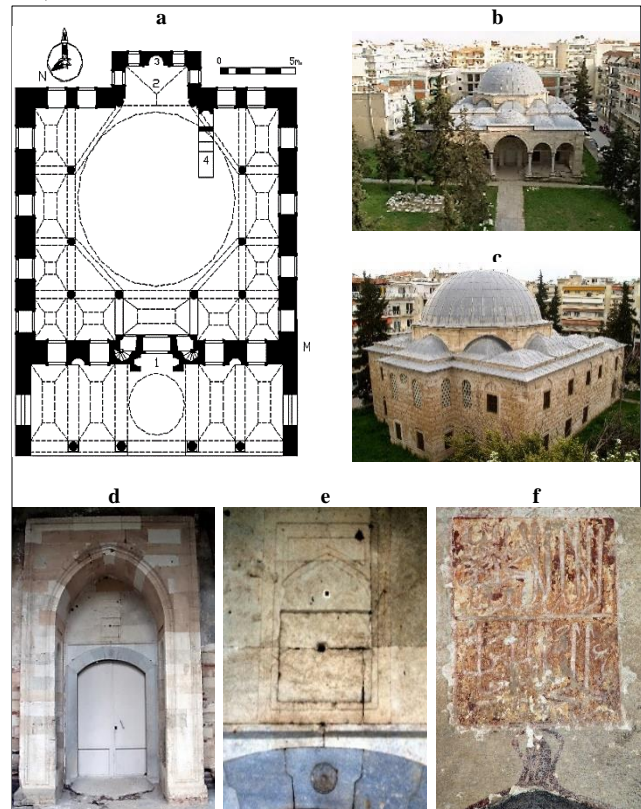
2.5. Synthesis and interpretation

The final stage involved the critical synthesis of all collected data. Contradictions—particularly between the dendrochronological date (1492) and the architectural evidence pointing to a later period—were addressed through hypotheses such as the reuse of older timber. The patronage was inferred by correlating the monument's scale, sophistication, and stylistic references with the known patterns of architectural patronage among the Ottoman elite during the 16th century. This multifaceted methodological approach allowed for a holistic re-evaluation of the Zincirli mosque, moving beyond single-source interpretations to construct a more evidence-based narrative regarding its chronology and significance within Ottoman architectural history.

3. The Zincirli Mosque

The Mosque with the Chain, known as *Zincirli Mosque* in Turkish [4,8,21], is a significant building in Serres and the

broader Ottoman territories. It is situated in a fenced area southwest of Serres, which was formerly the *Arabatzis* neighborhood. Unfortunately, there are no traces of the inscription that could reveal the Mosque's date and the name of its founder. Even though tree-ring dating indicates the wood was cut in 1492 AD [22], the architectural elements suggest that the mosque was constructed in the mid-16th century AD. The vast unoccupied area surrounding the *Zincirli Mosque* indicates that it was once part of a larger architectural complex. However, apart from the mosque, there are no remaining traces of this complex. The mosque remained intact until the early 20th century. The minaret was destroyed during the interwar period, and the exterior lead sheeting was removed during the German Occupation for missile production [21]. Neglect and misuse of the interior space led to significant damage to some architectural features. Today, the *Zincirli Mosque* has been successfully preserved, thanks to a comprehensive restorative program carried out between 1995 and 2000 as part of the Second Community Support Framework. This initiative involved the removal of recent additions, thorough cleaning of all domes and walls, and partial or extensive repainting. The restoration efforts also included reinforcing and re-roofing the domed roof and cornice, ensuring the Mosque's architectural integrity. Internally, the restoration [22] work focused on replacing the destroyed iron gratings of the windows, as well as the window frames, shutters, and lintels, all made from solid chestnut wood. The missing parts of the plaster partitions of the windows above the mihrab were also meticulously restored. The mosque is currently closed to the public and is under the protection of the Greek Archaeological Service to ensure its continued preservation [23], figs. (2-a:h).



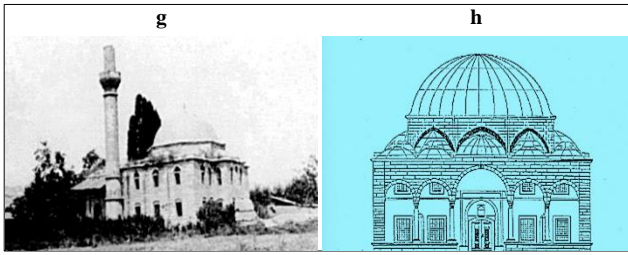


Figure (2) the Zircirli mosque of Serres; **a.** a plan of the mosque (1: the entrance, 2: the rectangular apsidal protrusion of the mihrab chamber, 3: the mihrab niche, 4: the pulpit "minbar". M: place of the demolished minaret, **b.** general view of the mosque, **c.** general view of the mosque from the qibla side, **d.** the portal of the mosque, **e.** the place of the missed foundation inscription, **f.** the inscriptive pane of the shihada on the portico's wall, **g.** an old photo of the mosque, **h.** section of the main façade of the mosque [22].

3.1. The architecture of the mosque

3.1.1. The plan

The mosque covers a total area of 430 square m., with walls ranging from approx. 0.87-1.45 m., in thickness. It is intentionally skewed to ensure proper orientation towards Mecca. The mosque consists of a square prayer hall measuring 11.14 × 10.92 m., which is topped by a dome. Encircling three sides of the prayer hall is a double-storey portico with flat crossvaults. The mihrab is in a separate rectangular compartment that extends beyond the main body of the mosque. Similarly, to other mosques of its time, this mosque originally featured a semi-independent minaret situated at its western corner.

3.1.2. Exterior

The mosque measures 22.16 × 18.80 m., and has a portico in front of the main facade on the northwest side. The portico, which is 5.55 m. × 18.8 m. is made up of five units. It has arches supported by two corner side walls and four columns in between, figs. (2-b;g). On the outside, the portico overlooks an arcade of five-pointed arches resting on white marble columns with Turkish capitals. The central arch is 3.90 m. high, taller than the other four arches, each of which is 2.44 m. high, fig. (2-h). The four side units of the portico have flat cross-vault roofs, while the central unit has a raised, hemispherical dome supported by pendentives. The monumental entrance of the mosque is highlighted by a domed entryway. The upper part of the portal extends out from the facade, corresponding with the mihrab on the opposite side. The entrance portal is 3.55 m. across and extends 44 cm. from the surrounding walls. The actual entrance opening is 2.19 m. across and 1.04 m. deep, bordered by a continuous stone frame and covered with a barrel vault. The entrance recess is adorned with two simple side niches, each with a pointed arch. The main door is rectangular with a segmented arch, made of grey marble and joggled voussoirs. Above this arch is a rectangular empty plaque, which unfortunately contains no traces of the inscription, figs. (2-e & f). The NW facade features two niches arranged on either side of the portal, between two windows. Each niche resembles a small mihrab with a pointed arch. Above the northern niche is a rectangular inscribed plaque with two lines in fine Arabic calligraphy. The top line reads "There is no god but Allah, Muhammad is the Messenger of Allah" which is the *Shihada*. The second line of

the plaque reads "All Praise to Allah, Lord of the Universe". The portico's inner wall has four windows, with rectangular marble frames protected with iron-work and crowned with slightly pointed arches. The walls are faced with hewn stone, while the inner wall of the portico features a cloisonné technique with preserved painted decorations. The domes and arches of the portico are built of brick with the arches faced with hewn stone. The SW, NE, and SE facades are built in an accurate cloisonné according to the Byzantine Helladic School. The stone blocks are interspaced with vertically arranged bricks and the walls terminate with a stone cornice. The SE wall is marked at its center by the mihrab, which takes the shape of a rectangular apse and is an architectural element seen in many mosques built by Sinan and his school, figs. (2-b & g). The windows in the lower tier are rectangular, framed with marble, and inset with iron grills, topped with segmented arches. The windows in the upper tier are similar to those in the lower tier, but crowned with pointed stone arches framed with two rows of bricks. The windows above the protruding mihrab apse are different, employing semi-circular arches closed with pierced gypsum. The external portico and the windows coincide with the inner spatial organization of the mosque. The main dome is covered with lead sheets and is supported by a blind, octagonal drum made of sandstone which terminates in a stone cornice.

3.1.3. Interior.

The mosque can be entered solely through the main entrance on the north-west façade. Inside, the square prayer hall is covered by a dome, approx. 11 m. in diameter, and is supported by eight arches, forming an octagon, figs. (2-h & 3-a). The walls of the prayer hall are about 1.18 m. thick, providing adequate support for the main dome. Notably, the north-west wall is thicker, measuring 1.45 m., due to the presence of two staircases built within it, figs. (2-h & 3-b). The interior of the mosque is rectangular, with dimensions of 16.37 m. × 14 meters, and the central octagon formed by the dome drum is inscribed in a square measuring 11.13 m. × 10.92 m., an arcade running along the interior of the three non-qibla walls of the mosque spans two storeys. The mihrab, which is rectangular and protrudes outside the main body of the mosque, measures 2.55 m. × 4.19 m. in the interior, figs. (3-c & d). The lower storey of the square prayer hall is covered with a flat brick roof, while the bays of the upper storey are covered with flat cross-vaults. The arches within the mosque exhibit a variety of designs to distinguish them from other Ottoman monuments in Greece. Notably, the arches in the lower storey of the arcade are pointed keel arches, and those facing the prayer hall are segmented, figs. (3-d & e). The arches in the upper storey are more complex, particularly those supporting the transition zone of the dome. The architecture creates an unusually compact interior, giving the dome an unexpectedly lofty appearance. The hierarchical sizing of the interior emphasizes a cross-axial space, and two spiral staircases within the NW wall provide access to the upper storey. Besides, a passage connecting these staircases is covered with a barrel vault, leading to a small rectangular door on either side, crowned with a pointed arch, providing access to the upper arcade. The Mosque's columns were cut from grey marble, mostly have dodecagonal shafts, and some feature richly decorated baklava capitals. The mihrab, situated in the middle of the SE

wall, consists of a rectangular apse surrounded by a pointed arch and covered by a semi-cross-vault. A niche at the back of the apse is ornamented with a ribbed semi-dome supported on stalactites and a stone rosette above the pointed arch. Another stone rosette is carved above the mihrab niche, bordered by a festooned stone cornice running along all walls of the prayer hall, marking the division between the first and second stories. Additionally, engaged columns are located where the mihrab apse connects with the prayer hall, fig. (3-f). The pulpit, measuring 4.19 m.×0.97 m., is situated just south of the mihrab and is made of white marble, fig. (3-f). It is one of the few marble pulpits preserved in Mainland Greece, with the most notable one being in the Yeni mosque in Komotini. The pulpit of the *Zincirli* mosque is admired for its intricate design and ornamentation. It features an elegant, serrated crest, a segmented arch over the entrance, and a rectangular plaque that originally held an inscription. The pulpit's entrance is adorned with delicate spiralling, fluted engaged columns and its pavilion, where the Imam delivers sermons, is accessible via a narrow staircase. The pavilion is nearly square and topped with an elongated conical hood, supported by four double arches resting on four columns with *baklava* capitals. The conical hood is made of wood covered with lead sheets and is richly decorated with elaborately carved panels and intricate floral interlace. Additionally, the interior of the Mosque is constructed with cut stone blocks alternating with horizontal, double rows of bricks, while the dome and vaulted sections are made of bricks. The dome and pendentives are faced with hewn stone, and the plastered sections were adorned with painted decorations.

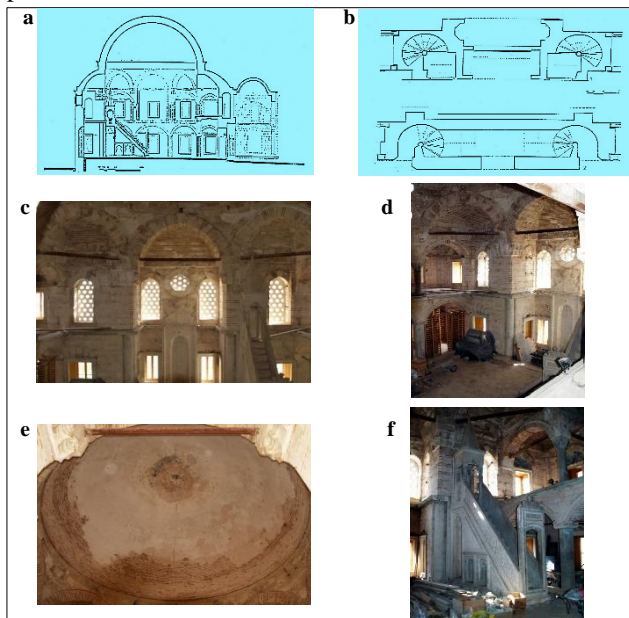


Figure 3 Zincirli mosque of Serres; **a**, section of the interior SW side [22], **b**, plan of the spiral staircases of the NW wall, 1. ground floor 2. upper storey [22], **c**, the qibla wall with the mihrab, **d**, the connection between the mihrab room with both stories and the transition zone of the prayer hall, **e**, the dome, **f**, the pulpit.

4. Results

The findings of this interdisciplinary investigation into the *Zincirli* mosque in Serres, Greece, reveal significant architectural, historical, and chronological insights that contribute

to resolving the longstanding debate regarding its patronage and date of construction. Fieldwork combined with archival research, comparative architectural analysis, and dendrochronological testing yielded the following key results:

- 1. Dendrochronological dating:** The timber used in the mosque's roof structure was scientifically dated to 1492 CE. This result is consistent with construction timelines of other Ottoman buildings in Serres, such as the Mehmed Bey mosque, indicating the potential reuse of timber from earlier structures.
- 2. Architectural characteristics:** The *Zincirli* mosque exhibits a distinctive architectural typology that aligns more closely with mosques attributed to Mimar Sinan and his school during the mid-16th century. Key features supporting this link include the use of a domed prayer hall inscribed within an octagonal drum, the sophisticated integration of cross-vaulted porticoes, and the design of the mihrab apse—a signature element found in mosques sponsored by high-ranking Ottoman patrons.
- 3. Byzantine-Ottoman fusion:** The construction technique reflects a blend of Ottoman structural planning and Byzantine masonry methods, most clearly demonstrated in the cloisonné stonework and decorative schemes. This stylistic fusion supports the hypothesis that the *Zincirli* mosque emerged during a transitional architectural phase under the classical Ottoman canon.
- 4. Patronage indicators:** Although no foundation inscription survives, the monumental scale, high quality of materials (such as the marble pulpit and sculptural elements), and strategic urban location suggest that the mosque was commissioned by a member of the Ottoman elite—possibly a royal woman or relative of a Grand Vizier. This hypothesis is further strengthened by similarities with female-commissioned mosques in Istanbul.
- 5. Restorative evidence:** The preservation and restorative interventions undertaken between 1995 and 2000 have exposed previously obscured elements, allowing for a more accurate documentation of the mosque's spatial hierarchy and original architectural intentions. These findings reinforce the notion that the mosque was designed as part of a more extensive architectural complex.

All of these results collectively demonstrate that while the dendrochronological date points to an earlier phase, the architectural program of the *Zincirli* mosque corresponds more convincingly to the stylistic language of mid-16th-century Ottoman imperial architecture. The reuse of materials likely accounts for the earlier wood date, offering a plausible resolution to previous chronological inconsistencies.

5. Discussion

The origins of the *Zincirli* mosque are surrounded by three different theories proposed by Kiel [5], Lowry [13,19] and Hartmuth [20]. Kiel's theory suggests that the mosque was built by Zeyni Kadi, based on his interpretation of Evliya Çelebi's writings about the mosques of Serres. Evliya Çelebi mentioned the mosque of Zeyni Kadi as being artistically built and covered in lead, placing it second after the *Eski* mosque or the mosque of Çandarlı Kara Halil Hayreddin

Paşa of 1385. Kiel's classification of the mosques of Serres based on their architectural and artistic value, as suggested by Evliya Çelebi, may be speculative. It is also likely that Evliya Çelebi's sequence of descriptions was based on the order in which he visited the monuments of Serres. The impressive structure of the Zincirli mosque and its vast surrounding area suggest that it was part of a massive architectural complex, making it unlikely that a local judge (*kadi*) could have been responsible for its construction. On the contrary, Lowry argues that the mosque was commissioned by Princess Selçuk Sultân (d. 1508) [13], the daughter of Sultan Bayezid II and the wife of Mehmed Bey. Two key pieces of evidence support Lowry's assertion: 1st, an account by Çelebi which distinguishes the Selçuk Hâtûn mosque as an "imperial" or "Sultan" [10] mosque, indicating its royal patronage; and 2nd, scientific dating of the wood used in the mosque, which aligns with the time of Princess Selçuk Sultân. However, there are counterarguments against Lowry's claim, such as the absence of a direct reference to the Serres mosque in Princess Selçuk Sultân's *vakfiye* of 1508 (914 AH) which only referred to a *Medrese*, while a later, *vakfiye* of whome stated one *Cami'i* and one *Ribat* [24], and the architectural style of the mosque not being present in Ottoman capitals before the second half of the 16th century. On the other hand, Hartmuth proposes a different interpretation, suggesting that the Zincirli mosque was established as a waqf (charitable endowment) by Selçuk Sultân/Hâtûn's children [20], dating to the 1590s, and attributes its construction to the architect Dâvûd Ağa. However, the challenge to this theory lies in the dendrochronological dating of 1492 AD, which Hartmuth suggests could be explained by the reuse of wood from an older mosque in the current mosque. All previous theories and this present study lack conclusive evidence about the precise date and founder of the Zincirli mosque. In this context, I aim to shed light on some facts and raise questions that may contribute to identifying the mosque's date and founder: 1) The dendrochronology method determines the construction of the Zincirli mosque around 1492 AD, coinciding with the date of Mehmed Bey mosque in Serres. It is worth noting that the Zincirli mosque was not the first case in which dendrochronology was used; when theories differed about the dating of the Niujie mosque, the oldest mosque in Beijing. The dendrochronology determined the age of the wood used in the mosque's mihrab to be 996 AD. [25]. 2) The architectural style of the mosque is similar to a group of mosques in and around Istanbul, which feature a dome on an octagonal drum and date to the second half of the 16th century. These mosques were associated with the renowned architect Mimar Sinan and were founded by daughters of Sultans or Grand Viziers, fig. (4) [26-29]. 3) The building techniques of the Zincirli mosque differ from those of other mosques in Serres, suggesting a connection to a different architect and architectural school that integrated Ottoman plan and architectural units with Byzantine techniques, reminiscent of Sinan's architectural school. Taking these factors into account, it is plausible that the Zincirli mosque was commissioned by a high-ranking member of the Ottoman Empire, possibly a relative of a Sultan or Grand Vizier. The architectural features of the mosque also link it to

the renowned architect Sinan's school. Based on this analysis, it is likely that the Zincirli mosque was constructed around the mid-16th century, indicating that the dendrochronological dating corresponds to reused wood. Regardless, the Zincirli mosque stands as the oldest example of its architectural style in Greece and represents a significant milestone in the development of classical Ottoman architecture.

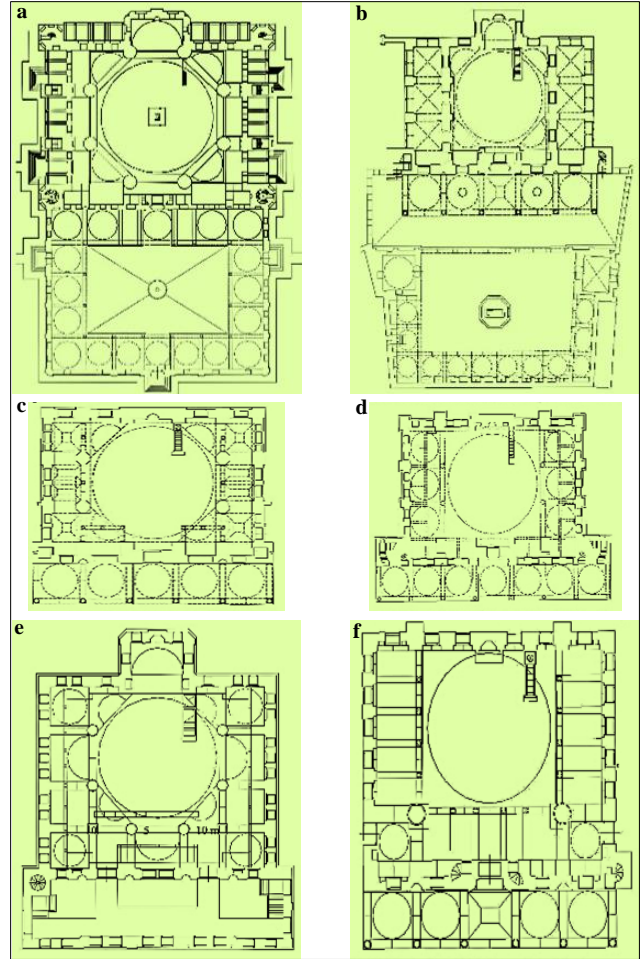


Figure (4) Plan of **a.** Selimiye mosque at Edirne [30], **b.** Mesih Mehmed Pasha mosque at Istanbul [31], **c.** Rüstem Pasha mosque, Istanbul, **d.** Mahrimah Sultan mosque, Istanbul [31], **e.** Azapkapi, Sokollu Mehmed mosque, Istanbul [31], **f.** Zal Mahmut Pasha mosque, Istanbul. [31]

6. Conclusion

This interdisciplinary study resolves key questions surrounding the chronology and patronage of the Zincirli mosque in Serres. While dendrochronological analysis dates construction timber to 1492 CE, the mosque's architectural language—characterized by its domed central plan, multi-story portico, projecting mihrab chamber, and sophisticated spatial organization—aligns firmly with mid-16th century Ottoman architecture associated with Mimar Sinan's school. This apparent chronological discrepancy is reconciled through evidence of timber reuse, a common practice in Ottoman construction, suggesting the mosque was likely built during the classical period of Ottoman architecture using repurposed materials. The mosque's distinctive synthesis of classical Ottoman forms with Byzantine construction techniques, particularly evident in its cloisonné masonry, represents a significant provincial adaptation of imperial architectural models. This hybrid character, combined with the monument's substantial scale and refined

ornamentation, indicates patronage by a high-ranking Ottoman official or member of the ruling elite, possibly connected to the sultan's household during the reign of Süleyman the Magnificent. As the earliest surviving example of this mature Ottoman architectural synthesis in Greece, the Zincirli mosque stands as a testament to the dynamic cultural exchanges that shaped the Ottoman Balkans. It exemplifies how provincial centres adopted and adapted metropolitan architectural styles while incorporating local building traditions. Methodologically, this research demonstrates the critical importance of integrating architectural analysis with scientific dating techniques and historical context when studying monuments with incomplete documentary records. The interdisciplinary framework developed here offers a model for investigating other understudied Ottoman monuments in the region. Future research should explore the Zincirli Mosque's potential connections to Sinan's provincial works and investigate the socioeconomic networks that enabled such architectural patronage in 16th-century Serres. Comparative studies with contemporary buildings across the Balkans could further illuminate patterns of stylistic diffusion and local adaptation within Ottoman architectural practice. Such investigations would deepen our understanding of the Zincirli Mosque's significance within the broader narrative of Ottoman cultural heritage in SE Europe.

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