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COMPARATIVE ANALYSIS OF THE USE OF NATURAL LIGHT IN THE MEDIEVAL PERIOD WOODEN HYPOSTYLE MOSQUES OF ANATOLIA

ANADOLU'NUN ORTAÇAĞ DÖNEMİ AHŞAP DİREKLİ CAMİLERİNDE DOĞAL IŞIK KULLANIMININ KARŞILAŞTIRMALI ANALİZİ

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Abstract
Light is indispensable for human life, is also a necessity for the perception of space. The design, color, texture of the space, that is, its perception in the human mind is possible through light. Light, which makes life possible, is used in different ways in the interior space, providing diversity in terms of design. In Islamic religious places of worship, natural light is utilized to appeal to the spiritual feelings of the users within the space fiction. Natural light is divided into functional light, sacred light and poetic light according to the way it is used in the interior, and light types provide different space atmospheres. Within the scope of this study, it is aimed to comparatively analyze the use of natural light in Islamic religious places of worship. In this context, 5 mosques, which were included in the UNESCO World Heritage List in 2023, were included in the study as a sample. The medieval wooden pillared mosques, which were included in the UNESCO World Cultural Heritage List, were selected as a sample because they are recognized by the whole world and are the common heritage of the world. The use of natural light in the mosques considered in the study was analyzed in line with the light types and the parameters of duration of effect, function, light distribution, focus, and light quality that differ according to light types. In the study, it was concluded that functional light was used in Afyonkarahisar Great Mosque, Ankara Arslanhane Mosque and Kastamonu Mahmut Bey Mosque, while sacred light was used in Beyşehir Eşrefoğlu Mosque and poetic light was used in Sivrihisar Great Mosque. It has been observed that the types of light used in mosques create different space atmospheres in the interior.

Keywords: Lighting, Religious Buildings, Wooden Pillar Mosques of Anatolia, Interior Space.

Öz
İnsan yaşamı için vazgeçilmez olan ışık, mekanın algılanması için de bir gerekliliktir. Mekanın tasarımı, rengi, dokusu yani insan zihninde algılanması ışık vasıtasıyla mümkün olmaktadır. Yaşamı olanaklı kılan ışık, iç mekanda farklı şekillerde kullanılarak tasarım açısından çeşitlilik sağlanmaktadır. İslam dini ibadet mekanlarında, mekân kurgusu içerisinde kullanıcıların manevi duygularına hitap etmesi için doğal ışıktan yararlanılmaktadır. Doğal ışık, iç mekanda kullanım şekline göre, işlevsel ışık, kutsal ışık ve şiirsel ışık olarak türlere ayrılmakta, ışık türleri farklı mekan atmosferlerinin oluşmasını sağlamaktadır. Bu çalışma kapsamında, İslam dini ibadet mekanlarında doğal ışığın iç mekanda kullanımının karşılaştırmalı olarak analiz edilmesi amaçlanmıştır. Bu kapsamda çalışmada, örneklem olarak, 2023 yılında UNESCO Dünya Kültür Miras Listesi'ne girmiş olan 5 cami çalışmaya dahil edilmiştir. UNESCO Dünya Kültür Miras Listesi'ne girmiş olan Orta Çağ dönemi ahşap direkli camileri, tüm dünya tarafından tanınması ve dünyanın ortak mirası niteliğinde olması nedeniyle örneklem olarak seçilmiştir. Çalışmada ele alınan camilerde doğal ışık kullanımı, ışık türleri ve ışık türlerine göre farklılaşan etki süresi, işlev, ışık dağılımı, odak, ışık kalitesi parametreleri doğrultusunda analiz edilmiştir. Çalışmada, Afyonkarahisar Ulu Cami, Ankara Arslanhane Cami ve Kastamonu Mahmut Bey Cami'lerinde işlevsel ışık kullanılırken, Beyşehir Eşrefoğlu Cami'de kutsal ışık, Sivrihisar Ulu Cami'de ise şiirsel ışık kullanıldığı sonucuna ulaşılmıştır. Camilerde kullanılan ışık türlerinin, iç mekanda farklı mekan atmosferi oluşturduğu görülmüştür.

Anahtar Kelimeler: Aydınlatma, Dini Yapı, Anadolu'nun Ahşap Direkli Camileri, İç Mekan.

INTRODUCTION

Light is defined as a physical energy that enables objects to be seen and colors to be distinguished (Sözlük, 2024). Light, which has been indispensable for human life since the existence of humanity, enables people to perceive their surroundings as concrete and alive. According to Lynch (1966, p. 60), light *"clarifies or obscures limitations; emphasizes form or texture; conceals or reveals a feature; shrinks or enlarges distances."* According to Gürocak (2024, p. 253), the main function of lighting after making the object visible is to reveal the form and color of the object. Regarding the light that destroys the concept of darkness, Kahn (1968, p. 127) mentioned the importance of light in the perception of space with the statement "*There is no space without natural light*" (Ünlütürk, 2021). Features such as color, shape and texture of the space can only be perceived visually with the help of light. In other words, although the design of the space consists of elements such as color, texture and shape, the most important element that enables this space to be perceived in the human mind is light (Michel, 1995). The natural light used in the space ensures that the volumes, colors and textures are perceived in the space in the closest and most natural form.

It is possible to achieve different results in terms of design by using light in different ways. The spaces that allow light to enter the interior are spaces that are determined and directed by human beings. Openings that connect the interior to the exterior, the exterior to the interior, and make the building permeable have made it possible to live indoors by allowing light to enter the interior. Such openings are designed in line with the desired features of the space, and the semantic dimension of the space is conveyed to the user as a message. According to Çelik and Karamağaralı (2019), the relationship between light and design is not limited to its structural properties but is also discussed through its effects on human psychology. Light, which provides heating and illumination in physical terms, also affects human perception in psychological terms. In addition to this, light design also serves as a spokesperson for some metaphorical expressions by attributing certain philosophical meanings to the space. The semantic dimension of light comes to life with the semantic relations of light and darkness, and the light or darkness of the spaces evoke different semantic effects on the user (Özorhon 2002, Altan, 1983). As the characteristics of natural light such as how it is admitted into the space, its angle and amount change, different perceptions are formed in the user. Therefore, it is possible to evoke different psychological reactions with natural light. In this way, special spaces that can affect users psychologically are created. In terms of the semantic use of natural light, places of worship belonging to different religions come to the fore. Natural light is utilized in religious spaces to support spirituality. Natural light is used in different ways in places of worship belonging to different religions. In the interiors of synagogues, the level of illumination differs according to the function, while in church interiors, natural light is used to create semi-illuminated spaces. It is seen that the natural light used in Islamic places of worship creates different space atmospheres according to the way it is used (Yıldız, 1995, p. 64).

In this study, it is aimed to analyze the differentiating effect of the use of natural light in religious buildings through different mosque examples. As a sample, the mosques that are entitled to be included in the UNESCO World Heritage List have been selected because the whole world recognizes them and are the common heritage of the world. In this study, Afyonkarahisar Ulu Mosque, Ankara Arslanhane Mosque, Beyşehir Eşrefoğlu Mosque, Sivrihisar Ulu Mosque and Kastamonu Mahmut Bey Mosque, which are the first serial assets from Turkey to be inscribed on the UNESCO World Heritage List, are analyzed. The use of natural light in the interior of the mosques were analyzed according to the type of light and the parameters of light duration, light distribution, focus, light quality, which differ according to the type of light.

RELIGIOUS BUILDINGS AND LIGHT

Light plays an important role in the physical experience of space and the formation of the semantic dimension of space. Light, which is the basis of existence, enables people to grasp their surroundings as concrete and alive. Humans define the space with light, and according to the way light is used and its position in the space, it gives the spaces a unique characteristic. The presence of a single opening or large windows in the space causes the space to be dark or homogeneously illuminated. In this way, the perception of the space changes completely. It is known that the use of light in the interior space varies depending on the function of the building (Ünlütürk, 2021).

In religious buildings, natural light is used to emphasize the functions required by the space. In addition, religious buildings stand out compared to other buildings in terms of the semantic handling of natural light, since the design of religious buildings involves the expression of religions by embodying them. In religious spaces, light creates a mysterious environment symbolizing the phenomenology of religion (Salan & Gürani, 2019). The association of light with eternity and the concretization of some metaphors related to holiness in the space thanks to the darkness caused by the lack of light support the semantic qualification of light in religious buildings. Roth (2006, p. 112) draws attention to the importance of the use of light in religious buildings by explaining; "Light is the most effective element in creating a sense of mystery and awe, therefore light management is the main factor in the creation of religious buildings." The use of light in the space adds a mystical atmosphere to the space with the shadow and light areas created. Light perceived as coming from the sky creates a dim environment (Özkum, 2011). Light, which can affect the user spiritually and cognitively, helps users to reach spirituality more easily in religious spaces (Habibad, 2021). The use of light in places of worship belonging to different religions is shaped according to the user perception desired to be created in the interior in line with religious beliefs (Yıldız, 1995, p. 64). It is known that darkness is considered sacred in Judaism. In synagogue buildings, while a bright environment is created in the worship areas, a mystical environment is created by using less light in the pulpit. It is known that in the early periods of the Christian religion, darkness was considered sacred as in Judaism. However, in later periods, it is seen that natural light is used to create semi-lit spaces. Natural light is utilized with the windows used on the apse wall of the church (Gojnik & Gojnik, 2021). In Islamic places of worship, both artificial and natural lighting were utilized to create a sacred atmosphere. Natural light is brought into the space through windows of different heights, skylights or colored floor claws to create a sacred atmosphere (Durukan, 2017). In Islamic places of worship, natural light is utilized to appeal to the spiritual feelings of the users. In Islamic places of worship, light is intended to create a spiritual effect by creating a divine, spiritual and mystical atmosphere. Light symbolizes divine power.

In the studies of Bilgi (2007), Özorhon (2002) and Sağlamer (1994), natural light is handled in three ways according to its use in the interior. According to these studies, light is divided into three as functional light, sacred light and poetic light. Functional light is explained as the type of light necessary for the fulfillment of functions such as reading and writing. This type of light does not have features such as being mystical or emotionally exhilarating. Sacred light is explained as the type of light that symbolizes the divine power in the space. It symbolizes the divine powers in the space and creates a mystical atmosphere. Poetic light, on the other hand, is not very different from sacred light, but it has a feature that excites and mobilizes emotions (Bilgi, 2007). While the duration of effect is permanent in functional and sacred light, it is temporary in poetic light. While function is important in functional and sacred light, it is unimportant in poetic light. In functional light, light distribution is regular, while in sacred and poetic light it is contrast. Focus is unimportant in functional and poetic light, but important in sacred light. The quality of light is bright in functional light, dim in sacred light and varied in poetic light (Table 1) (Sağlamer, 1994). When we look at the semantic effects of the types of light used in interiors; it is stated that functional light can be explained as a type of light that is not mystical and does not excite emotions, sacred light creates a spiritual and mystical atmosphere that symbolizes divine powers in the space, and poetic light, although not very different from sacred light, has a feature that excites and excites emotions rather than emphasizing spirituality (Özorhon, 2002).

Table 1. Types of natural light and parameters

	Functional Light	**Sacred Light**	**Poetic Light**
Light duration	Permanent	Temporary	Temporary
Function	Significant	Significant	Unimportant
Light distribution	Regular	Contrast	Contrast
Focus	Unimportant	Important	Unimportant
Light quality	Bright	Dim	Various

MATERIALS AND METHOD

Within the scope of the study, first, natural light, the types of natural light according to its use in the interior, and the relationship between religious structure and light were investigated. Then, the medieval

period wooden pillar mosques of Anatolia, which constitute the main subject of the study, were identified. 5 mosques included in the UNESCO World cultural heritage list in 2023, located in Afyonkarahisar, Ankara, Beyşehir, Kastamonu, Sivrihisar, were included in the scope of the study. In the study, photographs were taken from the interiors of Afyonkarahisar Ulu Mosque, Ankara Eşrefoğlu Mosque, Konya Beyşehir Arslanhane Mosque, Kastamonu Mahmut Bey Mosque and Sivrihisar Ulu Mosque at certain times of the day. The use of natural light in the mosque interiors has been analyzed comparatively through the photographs taken. The analyses were performed in accordance with the parameters of duration of effect, function, light distribution, focus, light quality, which were revealed in accordance with the literature studies; differentiated according to the types of light and types of light. The natural light usage of the mosques included in the sample was evaluated in this context.

WOODEN HYPOSTYLE MOSQUES OF THE MEDİEVAL PERİOD OF ANATOLİA

Anatolian Seljuks Decedent between 1077-1308 Anadolu Seljuk have built original works such as mosques, mosques, inns, caravanserais, bridges, fountains in many parts of our country. The architectural style developed by the Anatolian Seljuks has been one of the important periods of Turkish architecture. Anadolu Seljuk, who made great contributions to the development of architecture, built mosques, mosques, shrines to ensure the spread and continuity of Islam (Boran, Aykaç & Bayar, 2015). The beginning of the tradition of mosques with wooden poles seen in the Anatolian Seljuk period coincides with the Karakhanids period (Aslanapa, 2007, p. 131). It is known that wood material has been used in architectural works since ancient times. After the adoption of Islam by the Turks, mosques with wooden pillars and wooden ceilings were built using wooden materials. The type of mosque with wooden columns, which has a Central Asian character, was brought to Anatolia by the Turks (Kuran, 1972, p. 181). There are mosques with wooden pillars and wooden ceilings in many provinces of Anatolia.

Which constitutes the scope of this study; Afyonkarahisar Ulu Mosque, Ankara Arslanhane Mosque, Konya Beyşehir Eşrefoğlu Mosque, Kastamonu Mahmut Bey Mosque and Sivrihisar Ulu Mosque are among the most magnificent monuments of this period (Figure 1).

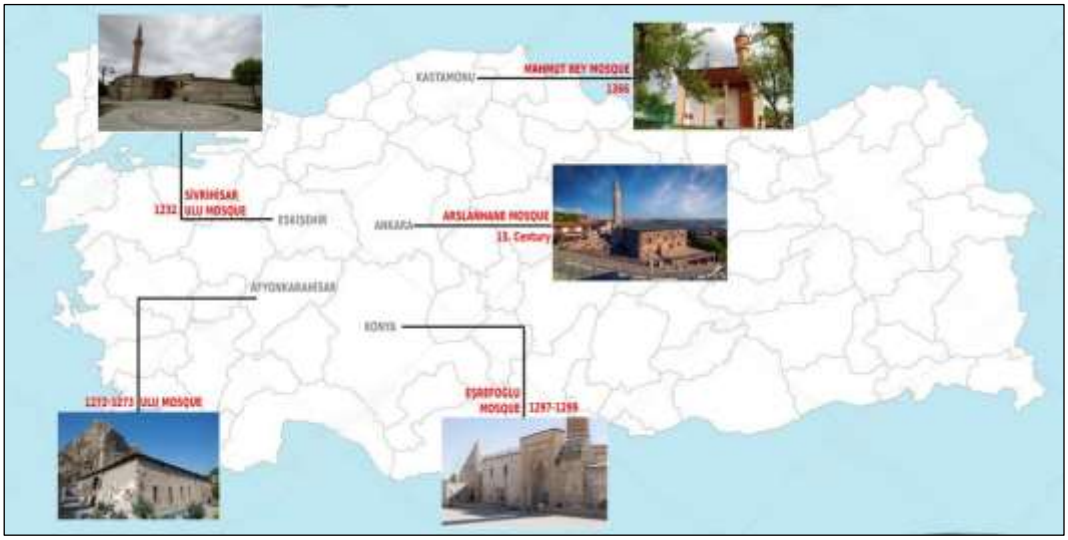

Figure 1. The Medieval Wooden Hypostyle Mosques of Anatolia

The most magnificent monuments of this period are in the city of Afyonkarahisar, Ankara Arslanhane Mosque, Konya Beyşehir Eşrefoğlu Mosque, Kastamonu Mahmut Bey Mosque, Dec. These mosques included in the scope of the study were included in the UNESCO World Heritage list as *Wooden Hypostyle Mosques of the Medieval Period of Anatolia* in September 2023 (UNESCO, 2023) (Figure 2). These mosques, Turkey's first serial cultural assets on the world heritage list, have common features even though they are located in different cities.

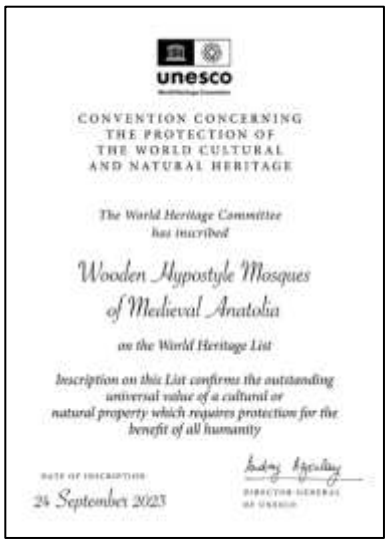

Figure 2. The Medieval Wooden Hypostyle Mosques of Anatolia, which have been included in the UNESCO World Heritage list

In Anatolia's Medieval Wooden Hypostyle Mosques, rubble stone and cut stone were used as the main materials, and the system carrying the ceiling and roof, apart from the walls, are the wooden pillars in the harim section. The wooden pillars divide the harim section into naves. In all the mosques, pencil decorations are found on wooden columns and beams (Table 2).

Table 2. Wooden columns, beams and ceilings of the mosques included in the UNESCO World Cultural Heritage List

				
Afyonkarahisar Ulu Mosque (Archive)	Ankara Arslanhane Mosque (Archive)	Konya Beyşehir Eşrefoğlu Mosque (Archive)	Eskişehir Sivrihisar Ulu Mosque (Archive)	Kastamonu Mahmut Bey Mosque (Archive)

Afyonkarahisat Ulu Mosque is in the Camii Kebir neighborhood in the center of Afyonkarahisar. It is stated that the mosque was built in 1272-1273 according to the examples taken from the mihrab and pulpit inscriptions and column capitals (Kuniholm, 2010, p. 131). The marble inscription on the entrance door on the east facade of the mosque states that the mosque was repaired in 1341-1342. However; it is stated that it was repaired in 1765, 1851, 1947, 1950, 1969, 1978, 1984. (Afyonkarahisar Vakıf Eserleri, 2005, p. 151). The mosque, which has a rectangular plan, has a total of 40 wooden columns consisting of eight colonnades placed perpendicular to the mihrab. These columns have square bases measuring 60 cm x 60 cm, and the capitals are in the form of dodecagon and decorated with pencil works. The interior of the mosque is illuminated by windows on the four facades of the building. There are a total of 11 lower windows on the south and east facades and 10 upper windows on the north and west facades. Artificial lighting is utilized in the mosque when natural lighting is insufficient. Until the 1950 repair work, it is stated that there was a lighthouse in the center of the harim and natural lighting was provided to the interior of the mosque. In the 1950 repair, it is stated that the light lantern in the center of the harim was closed (Afyonkarahisar Vakıf Eserleri, 2005, 153) (Figure 3, Figure 4).

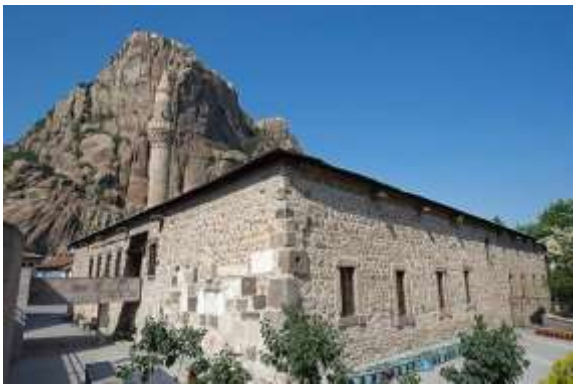


Figure 3. Figure 4. Afyonkarahisar Ulu Mosque general view and interior (Kültür Envanteri, 2024).

Ankara Arslanhane Mosque is in Kılıçarslan Neighborhood of Altındağ district of Ankara. Although there is no inscription indicating the date of construction, it is assumed that the mosque was built at the beginning of the 13th century from the writing style of the inscription. It is known that the mosque was repaired between 1289-1290 (Öney, 1990, p. 143). The mosque, which has a square plan, has five courts with four wooden columns perpendicular to the qibla wall and 24 wooden columns. The capitals of the columns are Corinthian and Doric. Windows illuminate the interior of the mosque on four sides of the building. There are 6 lower windows on the south, east and west facades of the mosque and a total of 14 upper windows on all facades. Artificial lighting is utilized in the mosque when natural lighting is insufficient (Figure 5, Figure 6).


Figure 5. Figure 6. Ankara Arslanhane Mosque general view and interior (Kültür Portalı, 2024).

Konya Beyşehir Eşrefoğlu Mosque is in the İçerişehir neighborhood of Beyşehir district of Konya. The mosque, which is the largest of the mosques with wooden pillars, was built in 1297-1299 (Kuran, 1972, p. 184). The mosque, which has a pentagonal plan, is carried by 41 wooden columns and consists of seven naves perpendicular to the mihrab. The wooden columns varying between 40-45 cm in diameter rest on stone pedestals. There is a snow pool in the middle of the nave. This pool was built to collect snow water, and the water accumulated here keeps the environment moist and prevents the wooden pillars from cracking. The windows on the facades of the building illuminate the interior of the mosque. There are two lower windows on the south facade, six upper windows on the east facade, thirteen upper windows on the west facade, and two upper windows on the north facade. Artificial lighting is utilized in the mosque when natural lighting is insufficient. There is also an illuminating lantern above the snow pool in the interior of the mosque. It is stated that the light lantern was closed during the repairs made between 1933 and 1941, and that it was reopened in the 2000s in its original condition (Koç and Mazlum, 2022) (Figure 7, Figure 8).


Figure 7. Figure 8. Konya Beyşehir Eşrefoğlu Mosque general view and interior (Archive).

Eskişehir Sivrihisar Ulu Mosque is in the Mosque Kebir neighborhood of Sivrihisar district of Eskişehir. According to various inscriptions found in the building; it is known that it was built in 1232 (Denknalbant, 2012, p. 116). The harim space of the mosque, which has a rectangular plan, is carried by 63 wooden columns parallel to the mihrab wall and consists of 6 courts. The wooden columns sit on spolia marble bases. Windows on the building facades illuminate the interior of the mosque. The north facade of the mosque is deaf, there are 8 upper and lower windows on the south facade, two upper windows on the west facade and two upper windows on the east facade. Artificial lighting is utilized in the mosque when natural lighting is insufficient. It is seen that there is a lighthouse on the third stage in the harim section of the mosque and natural light is received from the lighthouse (Figure 9, Figure 10).


Figure 9. Figure 10. Eskişehir Sivrihisar Ulu Mosque general view and interior (Kültür Envanteri, 2024).

Kastamonu Mahmut Bey Mosque is in the Kasaba Village of Kastamonu. According to the inscription on the entrance door, it is known that it was built in 1366 (Akok, 1946, p. 294). The mosque has a rectangular plan and the harim section of the mosque is carried by four wooden columns and consists of three courts. Two of the columns are dodecagonal and two have round sections, and the dodecagonal ones have muqarnas capitals. Unlike the other mosques, it is stated that there is no electrical installation in this mosque due to fire hazard, and the windows on the facades of the building illuminate the interior of the mosque. There is an entrance door on the north facade of the mosque, one upper window and two lower windows on the south facade, and two lower and two upper windows on the east and west facades (Figure 11, Figure 12).

Figure 11. Figure 12. Kastamonu Mahmut Bey Mosque general view and interior (Kültür Portalı, 2024).

THE USE OF NATURAL LIGHT IN MEDIEVAL WOODEN HYPOSTYLE MOSQUES OF ANATOLIA

In all of Anatolia's medieval wooden pillared mosques, natural lighting is provided by windows on the façade. In addition, Konya Beyşehir Eşrefoğlu Mosque and Eskişehir Sivrihisar Ulu Mosque have a light lantern known as a hill opening and the light lantern contributes to natural lighting. In Kastamonu Mahmut Bey Mosque, there is no electrical installation as a precaution against fire, and only natural lighting is possible in the mosque. When an evaluation is made on the use of natural light in Anatolia's medieval wooden hypostyle mosques;

- In Afyonkarahisar Ulu Mosque, it is seen that the duration of the effect of natural light is continuous, the amount of light is supported by artificial light in areas where natural light is insufficient according to the function, the function is important, the light distribution is regular, there is no focus and the quality of light varies. In the interior of the mosque, natural light is used to create shadows in the interior (Figure 13, Figure 14, Figure 15).

Figure 13. Figure 14. Figure 15. Use of natural light in Afyonkarahisar Ulu Mosque interiors (Archive).

- In Ankara Arslanhane Mosque, it is seen that the duration of the effect of natural light is continuous, the amount of light is supported by artificial light according to the function, in areas where natural light is insufficient, the function is important, the light distribution is regular, there is no focus and the light quality is bright. In the interior of the mosque, natural light is used to create shadows in the interior (Figure 16, Figure 17, Figure 18).

Figure 16. Figure 17. Figure 18. Use of natural light in Ankara Arslanhane Mosque interiors (Archive).

• In Beyşehir Eşrefoğlu Mosque, it is seen that the duration of the effect of natural light is continuous, the function is important, the snow pool and the center of the building are emphasized with the light from the lighting lantern, the light distribution is contrasting and the light quality is dim. In Beyşehir Eşrefoğlu Mosque, unlike other mosques, the natural light from the lighting lantern is perceived as coming from the sky and creates a dim environment (Figure 19, Figure 20, Figure 21).

Figure 19. Figure 20. Figure 21. Use of natural light in Beyşehir Eşrefoğlu Mosque interiors (Archive).

• In Eskişehir Sivrihisar Ulu Mosque, it is seen that the duration of the effect of natural light is temporary, the function is insignificant, the lighting lantern provides natural light to the building but does not create any focus, the light distribution is contrasting, and the light quality varies with the distribution of light from the lighting lantern during the day. In Eskişehir Sivrihisar Ulu Mosque, unlike other mosques, the natural light received from the light lantern into the interior cannot show continuity in the interior due to the dimensions of the light lantern (Figure 22, Figure 23, Figure 24).

Figure 22. Figure 23. Figure 24. Use of natural light in Eskişehir Sivrihisar Ulu Mosque interiors (Archive).

• In Kastamonu Mahmut Bey Mosque, it is seen that the duration of the effect of natural light is continuous, the function is important, but when natural light is insufficient, artificial light cannot be used due to the lack of electrical installation, the light distribution is regular, there is no focus and the light quality is bright. In the interior of the mosque, natural light is used to create shadows in the interior (Figure 25, Figure 26, Figure 27).

Figure 25. Figure 26. Figure 27. Use of natural light in Kastamonu Mahmut Bey Mosque interiors (Archive).

The mosques considered within the scope of the study were analyzed according to light types, light duration, function, light distribution, focus, light quality criteria in line with the data obtained from literature studies and the findings are shown in Table 3.

Table 3. Light types of mosques on the UNESCO World Heritage List.

	Afyonkarahisar Ulu Mosque	**Ankara Arslanhane Mosque**	**Konya Beyşehir Eşrefoğlu Mosque**	**Eskişehir Sivrihisar Ulu Mosque**	**Kastamonu Mahmut Bey Mosque**
Light duration	Permanent	Permanent	Permanent	Temporary	Permanent
Function	Significant	Significant	Significant	Unimportant	Significant
Light distribution	Regular	Regular	Contrast	Contrast	Regular
Focus	Unimportant	Unimportant	Important	Unimportant	Unimportant
Light quality	Various	Bright	Dim	Vaious	Bright
Light types	**Functional light**	**Functional light**	**Sacred light**	**Poetic light**	**Functional light**

According to these evaluations, Afyonkarahisar Great Mosque, Ankara Arslanhane Mosque, Kastamonu Mahmut Bey Mosque used functional light as light type, Beyşehir Eşrefoğlu Mosque used sacred light as light type, Eskişehir Sivrihisar Great Mosque used poetic light as light type. When a comparison was made in the mosques considered within the scope of the study, it was seen that the type of natural light in mosques with light lanterns applied as skylights differed from other mosques. In mosques with light lanterns, light symbolizes a divine power. The light in mosques with light lanterns creates a mystical atmosphere in the mosque interior. The effect of natural light from the lighthouse on the interior space varies according to the size of the lighthouse. If the light lantern is large, the natural light coming into the interior shows continuity and creates a focus in the interior. In interiors such as Sivrihisar Ulu Mosque, where the luminous lantern is smaller, the emphasis of the natural light from the luminous lantern in the interior and the spiritual atmosphere it creates are temporary.

CONCLUSION

Humans need light to realize the act of seeing and perceive their surroundings. Light, which destroys the darkness that causes feelings of nothingness and spacelessness, is a necessity for the existence of space. It is possible to achieve different results by using light in different ways in space. Light, which is a physical necessity, also affects the user with its semantic aspect. Different atmospheres are created in the interior space as the way, direction, amount, duration and continuity of light are changed. Religious buildings gain importance in terms of the semantics of light, and light in sacred spaces symbolizes the phenomenology of religion as well as providing visual comfort to users. Accordingly, it is seen that light is used in different ways in different religious buildings.

The use of light has been important in Islamic religious places of worship since they were first built. light has been considered sacred in the architecture of religious buildings and has played an important role in shaping religious buildings. In Islamic places of worship, light is utilized to appeal to the spiritual feelings of the users. Depending on the type of worship performed in the mosque, different amounts and characteristics of light are used in the interior, and artificial lighting is utilized when natural light is insufficient. Within the scope of this study, the use of natural light in mosque interiors constituted the main subject of the study, and mosques that were included in the UNESCO World Cultural Heritage List in 2023 were selected as a sample. Photographs were taken from the interiors of five mosques located in different regions and the use of natural light in mosque interiors was analyzed. The analysis was based on the parameters of the duration, function, distribution, quality and type of natural light in the interior, which were determined in line with the literature studies. As a result of the analysis, it was concluded that the type of natural light in the sampled mosques, Beyşehir Eşrefoğlu Mosque and Sivrihisar Ulu Mosque, is different from the other mosques. The reason for this difference is the luminous lantern applied as a skylight in the mosques. The light lantern creates light in the form of a beam of light in the interior space by receiving light from above. Since the luminous lantern takes the light from a single point to the space, it directs the user indoors and highlights the center. In the mosques where the luminous lantern is used, the natural light coming from the luminous lantern is effective in arousing feelings of mystery and awe and adds a mystical atmosphere to the mosques thanks to contrasting elements such as shadow and light. As a result, this study shows that in addition to the functional use of natural light in a religious structure, it also contributes semantically to the structure. By analyzing the natural light used in the mosques included in the sample, it was concluded that the type of light, the way light is received into the interior, and the areas it highlights are important in forming the semantic effect of natural light in the interior. By analyzing the natural light used in the mosques included in the sample, it was concluded that the type of light, the quality of light, the way light is received into the interior and the areas it highlights are important in the formation of light types that make a semantic contribution to the space, as opposed to functional light.

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