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The Rememberability of Religious Buildings: The Case of Tanjant Road

Dini Yapıların Hatırlanabilirliği: Tanjant Yolu Örneği

🆔 **Demet Yılmaz Yıldırım,**[1] 🆔 **Şeyma Bayram**[2]

[1]Departmant of Architecture, Karadeniz Technical University Faculty of Architecture, Trabzon, Turkey
[2]Departmant of Architecture, Recep Tayyip Erdoğan University Faculty of Engineer and Architecture, Rize, Turkey

ABSTRACT

Memorability has been handled in different disciplines such as psychology, philosophy, architecture, and planning. In architecture and planning, memorability has been approached through spatial perceptibility and collective memory, while in psychology, it has been addressed through the process of perception. The study is original in terms of synthesizing different disciplines' approaches to memorability. It has handled memorability both through the process and spatial perceptibility. Furthermore, the subject of study, Tanjant Road, is significant due to its role as one of the main horizontal axes that connects the eastern and western parts of the city of Trabzon, serving as a heavily used route for both vehicles and pedestrians within the city center. The aim of this study is to explain the rememberability of the religious buildings on Tanjant Road that establish a spatial or visual relationship with the road together with the processes of 'focus' and 'persistence', two of the image formation stages. In line with the purpose of the study, physical analyses of the Tanjant Road and identified religious buildings along the road were conducted at the stage of focus, a rememberability analysis was conducted at the stage of persistence; and analyses about whether or not the users remembered these buildings and their locations were made at the stage of 'being remembered. The study identified the religious buildings related Tanjant Road that stand out at the stages of 'focus', 'persistence' and 'being remembered', which are among the image formation processes. The study gives information about the design decisions that should be taken to reveal the religious buildings with strong rememberability, and to protect or strengthen the marks left by these religious buildings in memory. Discussing the remember process and the movement where perception is the strongest and for this purpose, the examination of a horizontal axis of Trabzon, which contains many historical and protected religious buildings, constitutes the originality of the study.

Keywords: Focus; perception with movement; persistence; religious building; rememberability.

ÖZ

Hatırlanabilirlik psikoloji, felsefe, mimarlık, planlama gibi farklı disiplinlerde farklı boyutlarda ele alınmıştır. Mimarlık ve planlama alanlarında hatırlanabilirlik mekânsal algılanabilirlik ve kollektif bellek, psikoloji alanında ise algılama süreci üzerinden ele alınmıştır. Çalışma farklı disiplinlerin hatırlanabilirliği ele alma biçimlerini sentezlemesi açısından özgündür. Hatırlanabilirliği hem süreci üzerinden hem de mekânsal algılanabilirlik üzerinden tartışmıştır. Ayrıca çalışma alanı olan Tanjant Yolu, Trabzon kentinin doğu ve batısını birbirine bağlayan kent merkezinin içinden geçen hem taşıt hem de yaya için yoğun kullanılan ana yatay akslarından biri olması açısından önemlidir. Çalışmanın amacı, Tanjant Yolu üzerinde yolla konumsal veya görsel ilişki kuran dini yapıların hatırlanabilirliklerini, imaj oluşum aşamalarından olan "odaklanma" ve "iz bırakma" süreçleriyle birlikte açıklamaktır. Bu amaç doğrultusunda odaklanma aşamasında yolun ve tespit edilen dini yapıların fiziksel analizleri, iz bırakma aşamasında kalıcılık analizi, hatırlanma aşamasında kullanıcıların bu dini yapıları ve yerlerini hatırlama durumuna ilişkin analizler yapılmıştır. Çalışmada, Tanjant yoluyla ilişkili imge oluşum süreçlerinden olan odaklanma, iz bırakma ve hatırlanma aşamaları sonucu öne çıkan dini yapılar tespit edilmiştir. Çalışma Tanjant yoluyla ilişkili hatırlanabilirliği güçlü dini yapıların ortaya konması ve bu dini yapıların bellekte bıraktığı izlerin korunması veya güçlendirilmesi için alınması gereken tasarım kararlarının neler olabileceği konusunda veriler sağlamaktadır. Dini yapıların hatırlanabilirliğinin, imaj oluşum süreci üzerinden ve algılanmanın en güçlü olduğu hareketle birlikte ele alınması, bu amaçla çalışma alanı olarak Trabzon'un tarihi birçok dini yapı barındıran yatay bir aksının seçilmesi çalışmanın özgün yönünü oluşturmaktadır.

Anahtar sözcükler: Odaklanma; hareketle algılama, iz bırakma, dini yapı, hatırlanabilirlik.

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1. Introduction

The natural and built environment is encoded at the end of the sensory perceptual and mental process. At the end of this process, the places that leave a mark on the person, focus the person and constantly stimulate them are transferred to long-term memory to be remembered and transformed into an image. Remembering is the recall of an image from memory. The memorability of the space depends on both the physical and semantic characteristics of the space. In particular, physical characteristics such as the location, physical characteristics, visibility and continuity of the space have an impact on the memorability of the space. The image is the result of the relationship between the city and its residents. On one hand, it expresses the connection between the city and its residents. On the other hand, it enables the residents and visitors in the city to remember places or spaces, find their way, and understand/legible their cities.

It is important for people to understand and know/legible their environment in the relationship they establishe with the city. Because the sense of familiarity are the main factors for the individual to feel safe. However, during the rapid construction process in the modern day, cities are rapidly losing their identity values which make them familiar. Consequently, one may see that the original traces of many cities have disappeared, that similar buildings have been designed in many cities, or that characterful buildings have been lost due to dense housing. This causes the people of the city to lose familiar places. That people do not feel safe and do not adopt the city in which they live are important problems. Lynch (1960), defined the marks left by the city on the user as the image elements of the city. Of these image elements, landmarks are primarily the physical formations that, as reference points, direct the user and that provide familiarity by making a reference to a place.

Religious buildings are generally single and dominant buildings in the city, and are physically different from the surrounding buildings in terms of their location, form and size. In addition, it has a high potential to be a symbolically and semantically strong landmark in terms of representing the builder and the divine power who had it built, and of reflecting the period in which it was built. As important public buildings, they have a special place in the users' memory. Therefore, from the past to the present, religious buildings are structures with a high rememberability potential and a high image value that are prominent in the texture and silhouette of many cities.

Because of its geographical location, the city of Trabzon has always been an administrative center, as well as an important trade center as a port city connected with the Silk Road and the sea. In addition, the city, which has hosted various civilizations, has important buildings in terms of urban identity. Among these buildings, religious buildings such as churches, mosques and masjids have an important place. The "Tanjant Road", an the important pedestrian and vehicle axis of the city which is located in the city center of Trabzon and where old and new buildings are together, was chosen as the study area. Tanjant Road is an intensely used route that connects Atatürk Square and Atapark, which are the important nodal points of the city. This study aims to explain the "rememberability of the religious buildings" along this road in terms of the stages of 'focus' and 'persistence', which are among the image formation stages. This study is unique due to the fact that it provides data on the design decisions to be taken to reveal the religious buildings that are remembered on this road.

In order to understand perception, it is necessary to explain memory and how memory stores images. Memory is a mechanism of images that becomes active when the object is not present and reminds us of that object. This image mechanism takes place through mental schemas as recording objects in memory in a meaningful and congruous connection; understanding, grouping and learning the information acquired through senses. In the sensory stage, a spiral structure is formed between physical reality and people's senses and there is a dialectical relationship. In sensory stage, information is transferred to short-term memory for mental processing within 3 seconds according to Irwin, Zacks and Brown (1990) and within 5 seconds according to Temel (2002). In the perceptual and mental stages, the environmental data obtained consciously or unconsciously are formed depending on such factors as experiences, needs, expectations etc. After sensation and perception, an object supported by memories, experiences, perceptions and sensations is associated, matched, directed, compared and, therefore, this object is imaged in memory. This imaging first takes place in short-term memory. The short-term memory retention time of information is approximately 15 seconds according to Burley-Alley (1997) and 20 seconds according to Şenel (2003) and it is because of this reason that the information in short-term memory is processed immediately, and the ones that are considered important and meaningful are transferred to long-term memory to be remembered and used. If the object is repeated frequently and as many times as necessary, that is, if it continues to be stimulated, the information is transferred to the long-term memory, and stored in episodic, semantic and procedural memory (Şenel, 2003, Downs and Stea, 1973, Rapoport, 1981, Küçüköner, 2007, Öymen Özak and Pulat Gökmen, 2009, Göregenli, 2010, Hergenhahn et al., 2000).

Seeing is a very important part of the sensory stage. Eye scans its surroundings continuously. Humans perceive the position, distance, textural properties, light quality, color, and shape of the objects alone and with each other through the sense of sight (Rapoport, 1977). Selectivity in the image mechanism is realized by visual search. That the transition into consciousness in the perceptual process occurs with the formation of a

visual impression shows that the eye and vision are important for the images that will be formed in memory by perception (Sayar Avcıoğlu and Akın, 2017, Desimone, 1996, Aydınlı, 1986). From the day of birth on, considering that 80% of people's impressions and images of the external environment in which they live are formed through seeing, the sense of vision plays an active role in people's definition and making sense of their environment (İnceoğlu, 2010, Cornsweet, 2016). In support of this view, Berger (2010) states that seeing comes before speaking and that the expression of the spoken language is limited, but there is no limit to the images that create the visual expression. That images are mostly based on seeing and observing, and therefore being related to cognitive processes and perception created in the internal structure of the brain shows the importance of the vision between image and perception (Berger, 2010, Parsa, 2004).

Nothing is lost from memory. As a result of the effects that activate the image, a rapid movement begins in the memory, everything that is evoked by the image appears in the memory, and the images in the past are transferred to the present, which is "remembering". The thing that emerges with remembering is not the exact same of its own real existence, but is the remembering of some details, namely images, that leave marks in the memory (Küçüköner, 2007, Halbwach, 1992, Nora, 2006). In this case, one may see that the continuity of the views is effective in recognizing the object, keeping it in mind and remembering it later (Philips and Christie, 2007, Wedel and Pieters, 2000). Besides, the more context the object contains for the individual, the more permanent it is. Thus, in order for an object to leave a mark in the memory, to be permanent and to be remembered later, it is important that it have meaning and memories coming from experience as well as its physical properties (Öymen Özak and Pulat Gökmen, 2009, Halbwachs & Coser, 1992). When the images increase in number, some of the images are sent back. But new images stay ahead and their associations are faster. For this reason, objects that are always in sight can be remembered more easily (Lynch,1960). Therefore, in the formation of an image, attracting the attention of the users and making them focus on it, leaving a permanent trace on the users, showing continuity and being in sight are important for the object to be remembered and to be meaningful.

The whole of the urban space cannot be fully seen and experienced from the location of the user; one has to move in the city and combine the pieces in time to get the whole picture (Hillier and Hanson, 1984). Movement around the building is also important in remembering buildings (Nasar, 1989). Therefore, perception by motion is another important concept in image formation. For not every object is memorable (Madran, 2001). But, memorable objects have the power to attract attention during movement and create a mental image of the city (Appleyard et al. 1964). The most important determinants

of movement are roads. That the road has a rhythmic order or shows contractions-expansions and that they have a linear or organic form are the structural features of the road that affect perception (Lynch, 1960). During movement, sudden appearances of objects along the roads, the concave or convex form of the roads, corridors leading towards and instantaneously revealing the object, abrupt turns, and other similar situations facilitate the strong perception of the object. Furthermore, the continuity of views facilitates the recognition and retention of an object, making it easier to be recognized and remembered (Lynch,1960, Appleyard, Lynch ve Myer, 1964).

According to its definition in the Turkish Dictionary of the Turkish Language Association, the image is defined as the reflection of a similar object which the sensory organs perceive from the outside to the consciousness. However, the image is more than just like the perceived object reflected in the consciousness; it is also affected by such processes as remembering, understanding, and comprehension and, with the incorporation of the person's knowledge, by the person and his past experiences (Kahvecioğlu, 1998). According to Norberg-Schulz (1971), the image of the city is one of the factors that make cities different from each other as a defined whole that does not consist of geometrically interrelated "identical" parts, and that creates their character, that is to say, their identity.

According to Lynch (1960), the urban image is a generalized picture of the external physical world, and it starts with receiving information through our sensory organs and continues with such processes as learning, remembering, comprehending, and making sense. Lang (1987) emphasizes the effects of human behavior in the environment in the formation of an image, and states that the establishment of reactions to the environment between environmental elements and the image resulting from these relationships is the result of the process that begins with sensations and ends with meaning.

Rapoport (1981) states that elements differ from their surroundings in terms of visual and aesthetic features gain importance in cognitive maps. For a building to be permanently remembered, it is important for it to be physically clear and easily perceptible, have distinctive and unique forms, dominate its surroundings, offer high visibility and striking perspectives, and possess a quality of continuity, not appearing and disappearing abruptly (Appleyard, 1969, Appleyard, Lynch ve Myer, 1964, Cullen, 1961, Diker, 2014, Lynch, 1960, Rossi, 2006). Appleyard (1969) states that the heavily used spaces (Lynch's nodes) are shown more important in cognitive maps, and spaces with singular functions such as religious buildings, hospitals and schools have an important place in shaping the memory maps.

Lynch (1960) tried to explain the readability and imageability of the city through the image of the city based on

the physical characteristics of the cities, and identified five main elements for this purpose. According to Lynch (1960), landmarks are external reference points which give a sense of place and direction, which are static and noticeable, but which the observer cannot enter. These are usually simply defined physical objects and are clues to identity formation. In other words, those who live in the city or those who visit to the city for the first time read the city with the help of these elements. Appleyard (1969) states that the formal, visual, usage and meaning features of landmark elements provide familiarity in space (Lang, 1987). Such buildings make a difference in the texture of the city and help the residents and visitors of the city find direction and remember the place (Giritoğlu, 1998). Because these elements are impressive and noticeable at first glance, they play an active role in creating people's image of the city and space (Güley, 2001). Belingrad and Peruch (2000) also defined them as elements that are meaningful for the individual on a spatial scale, and that attract attention, support finding direction, orientation, and reading the space. The study by Jansen-Osmann (2001) shows that fewer mistakes are made in reading an environment with landmarks than reading an environment without without. In addition, landmarks allow people to find direction and the distances in the space (Anooshian, 1996) and to establish a topographical connection with the environment (Dabbs et al.,1998). Going from one place to another is a basic need for human beings (Norberg-Schulz, 1971).

Landmarks make all of these possible with their structural features such as size and formal differentiation, as well as spatial features such as being on the main road, being visible from the main road or being located at sharp turns, junctions and concavities (Bacon, 1969, Vinson, 1999). Having an easy definition creating reference, reflecting the structure of the city, being permanent and visible and showing continuity are other features of landmarks (Appleyard et al. 1964, Appleyard, 1969, Lynch, 1973, Diker, 2014, Cullen, 1961, Rossi, 1984). All these properties cause the building to attract attention, be focused on, and be remembered by leaving marks on the users.

Religious buildings are built more meticulously and more ostentatiously than other buildings, both formally and semantically. In terms of form, they draw attention with their size and shape and they are easily apprehended by such symbols as domes, minarets and bell towers. They create a empty space within the congested urban texture. In addition, semantically, religious buildings symbolize the idea represented in the city, at the time of the construction, the builder and the administration and power of those who had them built, and the level of technological development of the geography in which they are located. These buildings are also seen as structures that are shaped as the physical expression of all these. With their physical properties such as shape, size, material, location and order, they become signs with their uniqueness/singularity.

Religious buildings that are effective in the silhouette of the city allow the city to be perceived easily, and people to find a way in the city easily;in short, it supports the city to gain the quality of being readable and helps the formation of urban identity. In addition, these buildings, which attract attention and are perceived in the image of the city, are easily retained. To sum up, in order for an object to create an image, it should make the users to focus on itself by attracting their attention and make the users remember itself by leaving a mark in their minds (Diker, 2014, Güzer, 2009, Yetim, 2019).

Memorability has been addressed in various disciplines such as psychology, philosophy, architecture, and planning, each exploring different dimensions. In the field of architecture, memorability has been approached through spatial perceptibility, focusing on an individual's interpretation and understanding of space, as well as their ability to remember and recall it (Appleyard, 1969, Bonta, 1979, Özak, 2008, Öymen Özak ve Pulat Gökmen, 2009). In planning, memorability is examined in relation to the urban environment (Lynch, 1960, Neisser, 1982, Evans, Smith ve Pezdek, 1982, Rossi, 1984, Cooper, 1992, Rossi, 2006, Dobson, 2011, He, 2014, He and etc., 2017) and collective memory (Connerton, 1992, Boyer, 1996, Nora, 1996, Assmann, 2018). In the field of psychology, memorability is often explained through the structure of memory, the definitions and meanings of memory within psychology, as well as its impact on an individual's orientation and behaviors. It involves examining the stages and processes of the recall event, factors influencing the memory process (Sachs, 1967, Atkinson & Shiffrin, 1968, Atkinson & Shiffrin, 1971, Tulving, 1972, Tulving, 1987, Benn vd., 1990, Bergson, 1998, Terry, 2013).

In Trabzon city, various studies have been conducted that relate to perceptibility based on religious buildings. In Kalın & Yılmaz (2012)'s study the visibility of Trabzon Hagia Sophia Church as a landmark has been examined together with the visual analysis method. With a similar method, the perceptibility of religious buildings on the main roads of the city was examined in Yetim & Yılmaz Yıldırım (2022)'s study. There are comprehensive studies such as Yılmaz Yıldırım & Yetim (2020)'s study they address religious buildings in Trabzon at the urban scale. This study typically employ Geographic Information System (GIS)-based mapping methods to conduct physical and functional analyses of the religious buildings .

Various studies have been conducted Tanjant Road, the subject of study. In the study "Urban Identity: Effects of Tanjant and Black Sea Coastal Roads on Trabzon's Urban Identity" by Zorlu, Aydıntan & Engin (2010), the construction of the two significant axes/roads of the city, including Tanjant road, was examined through a literature review. The study focused on exploring the impact of these roads on Trabzon's urban identity. The study by Yetim (2019) titled "The Potential of Religious Buildings as Landmark: The Case

of Trabzon" examines the perceptibility of religious buildings, including those along Tanjant Road, based on visibility.

The study is original in terms of considering the perspectives of different disciplines on the phenomenon of memory. Therefore, its unique approaching memorability both through the process of image and spatial perceptibility together. The steps of study were detailed in relation to the factors that affect the formation of the image formation process, and the remembrance of religious buildings was discussed on the Tanjant Road which is the main alter of city center.

2. Material

The Tanjant Road, also known as Yavuz Selim Boulevard, was chosen as the area of study, which is used extensively in the horizontal urban transportation of the city of Trabzon. Tanjant Road starts from Uzunkum in the west and ends at Çömlekçi in the east. It is 11 kilometers long and a double flow highway. Presently, it is one of the roads that is used extensively both as a pedestrian and a vehicle road. Tanjant Road, which constitutes an important artery of the city, is also important due to the fact that it passes through the city center and the urban site which is the historical settlement of the city under protection.

In the study, the boundaries of Tanjant Road were limited by reference to the borders in the map prepared by the Trabzon Urban Cultural Heritage Inventory (Özen et al.,2010) showing the distribution of mosques in the city. The study discussed a heavily used horizontal axis including Meydan Park (Atatürk Square) and Atapark, the two important nodes especially of the city center. The field of study was divided into 6 areas of approximately the same length. In the first area (H1) and the third area (H4), there is one religious building each. In the second area (H1, H2, H3) and the sixth area (H13, H28, H29), there are three religious buildings each. In the fourth area (H5, H6, H7, H10, H11, H12, H27), there are seven religious buildings. Lastly, in the fifth area (H8, H9), there are two religious buildings.

15 of the 17 religious buildings that were studied are protected and registered religious buildings that have survived from the time of their construction and that are permanent buildings in time. These are: Askeri Mosque, Hatuncuk Hatun Mosque, Hamza Pasha Mosque, Gülbahar Hatun Mosque, Ortahisar Büyük Fatih Mosque, Musa Pasha Mosque, Tabakhane Mosque, Çarşı Mosque, Hacı Kasım Mosque, Pazarkapı Mosque, İçkale Mosque, İskender Pasha Mosque, Yenicuma Mosque, Tavanlı Mosque and Tekke Mosque.

The study investigated religious buildings that are on the Tanjant Road and/or perceived from this road. Hamza Pasha Mosque, Gülbahar Hatun Mosque, Musa Pasha Mosque and Hacı Kasım Mosque are religious buildings on the Tanjant Road. Hatuncuk Hatun Mosque, Erdoğdu Central Mosque,

Ortahisar Büyük Fatih Mosque, Tabakhane Mosque, Çarşı Mosque, Mehmet Akif Ersoy Mosque, Pazarkapı Mosque, İçkale Mosque, İskender Pasha Mosque and Yenicuma Mosque are religious buildings that are not directly on the road but are visible along the movement. The Askeri Mosque, İskender Pasha Mosque, Tavanlı Mosque and Tekke Mosque are religious buildings that are not on the road and are not visible, although they are located in the immediate vicinity of the road (Fig. 1).

3. Methodology

The aim of the study, is to reveal which religious buildings associated with this road are remembered strongly by explaining the rememberability of the religious buildings on Tanjant Road together with the processes of focusing, leaving marks and remembering, which are the stages of image formation. To this end, the hypotheses of the study are as follows:

In order to create an image, firstly, religious building needs to capture the user's attention, focus their attention on the building, and make impression that will be remembered.

The user's focus on the building can only be achieved through the form of the road.

Remembering is effective if information is processed in the memory. Taking a place in short-term memory is important in transferring the building to long-term memory and remembering it by creating focus on religious buildings. A religious building that has not been included in short-term memory is not remembered because it is not transferred to long-term memory.

Building that have witnessed the passage of time and are constantly visible tend to be remembered more prominently.

Religious buildings that have strong relationships with the city are remembered without requiring any other reference points.

The form of the road that determines the movement, the figure-ground effect formed by the building's physical structure relative to its environment, and its visibility, continuity and uniqueness are important for the user's focus on the building and are effective in user's remembering of the building.

There is a relationship between the user's location and the location of the religious building in terms of rememberability. The users remembers the religious building near them first.

First, the factors that arise from the physical structure of the building and road were discussed at the stage of focus, which is the first of the image formation stages. Factors that arise from the physical structure of the road are; whether or not the religious building is within the concave area of the road, whether or not they are located and/or seen at turns and at junctions, and whether or not it is perceived from the empty space. In study, evaluations were made not
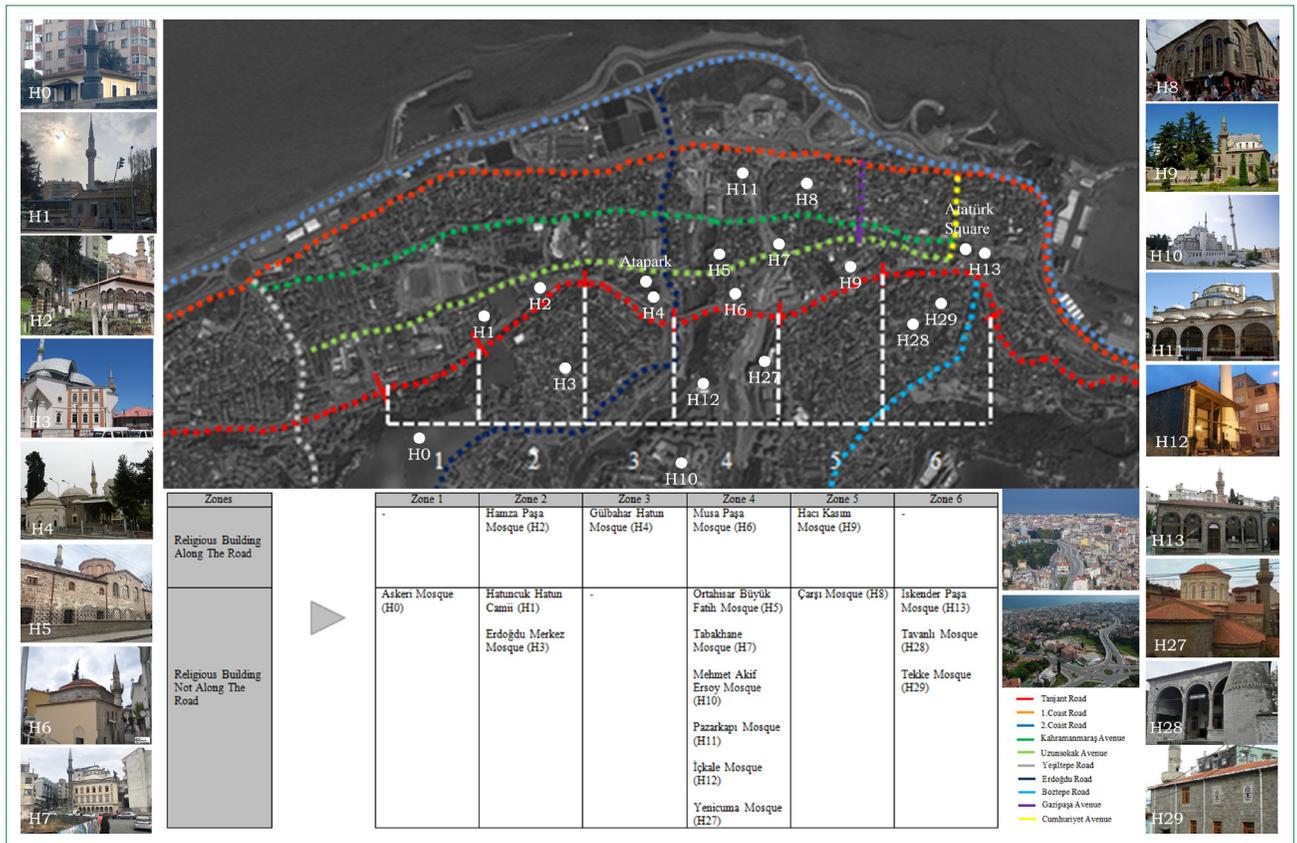
Figure 1. Distribution of religious buildings related with the Tanjant Road (prepared by the authors).

only regarding the physical structure of the road but also in terms of visibility of religious building. In the visibility analysis, the religious building and other elements in its surroundings were assessed as a whole based on the photographs taken. Factors that arise from the physical structure of the building are simplicity, distinction, singularity and dominance on the basis of shape-ground. In addition to these qualities, the quality of "visibility", which are effective in both user's focus and the remembering stages, was discussed under appearance strength, continuity and singularity. In the visibility analysis, the work titled "The View of Road", a joint work by Appleyard, Lynch and Myer (1964) which examines vehicle movement; Cullen's (1961) work titled "Townspace" which investigates pedestrian movement; and the joint work of Kalın and Yılmaz (2012) "A Study on Visibility Analysis of Urban Landmarks" were taken as the basis and the visual analysis techniques that they employed were used in the present study (Yetim, 2019, Yetim & Yılmaz Yıldırım, 2022).

From studies on visibility "The View of the Road" (Appleyard, Lynch and Myer, 1964), study were addressed the aesthetics of urban highways. They expressed that the road itself provides a fundamental continuity and forms a connected whole of space, movement, orientation, and meaning. They stated that the primary objectives in shaping the visual experience of the

roadway are to provide the viewer with a rich, consistent sequential form that has contrasts with continuity, rhythm, and progression. They aim to achieve well-integrated transitions and a dynamic balance in form, clarify and strengthen drivers' perception of the environment, offer drivers a well-structured, diverse, and comprehensive picture, and deepen the observer's understanding of the meaning of their surroundings. Cullen (1961), who focused on pedestrian movement, stated that the evidence of urban design quality lies in the visual experience of the city. In his work "Townscape," he attempted to define the built environment from the perspective of the moving individual and created series of images. Cullen (1961), detailed the series of views obtained by the pedestrian's movement along the middle of the road in a parallel manner.

Second, focus on the religious building was discussed over whether or not the religious building is retained in the short-term memory. Approximate visibility distances of religious buildings were determined (number of steps x approximate length of steps), and the duration of visibility of the religious buildings was calculated approximately by considering the average human walking speed as 5km/h with the formula Road=Speed x Time (URL 1). Based on this time, focus time was evaluated over 5 seconds, which is accepted as the maximum limit, and short-term memory retention time was evaluated over 20 seconds.

Third, the permanence of buildings was analyzed at the the stage of leaving a mark. A detailed literature review on the buildings was made, and the preserved religious buildings were determined.

Finally, in the remembering stage, which is the third of the image formation stages, the religious buildings that that are placed in the user's memory were identified by a questionnaire conducted with the users on Tanjant Road.

In literature, rememberability has often been measured through image maps and surveys. In Appleyard (1969)'s study titled "Why Buildings Are Known" the survey method was used to determine whether the use of space is related to urban dwellers' experience of the city and to identify how they remember these places. During the survey, participants were asked about the most memorable points in the city, and they were requested to draw these points on a map. They were also asked about the things they observed while moving along the road. A total of 320 individuals were interviewed for the study. In Nasar (1990)'s study titled "The Evaluative Image of the City" interviewed 220 residents by phone and 180 visitors face-to-face in two US cities, Knoxville and Chattanooga, Tennessee. They were asked to indicate the areas they liked and disliked visually and to explain the physical features that led to their evaluation. An assessment map of the city was prepared from each meeting. The results show that the visual likes and dislikes of the participants are common. In the study "Quantifying Memories: Mapping Urban Perception" by He et al. (2020), a web-based visual survey was utilized to examine the relationship between the spatial structure of the built environment and individuals' perceptual information, aiming to discuss urban memory. In the study, random images selected from a specific region were presented to randomly selected participants, and they were asked to mark the locations of familiar views on a map. The results of the study indicated that participants not only visually remembered the spaces but also recalled their places. Additionally, the exclusion of demographic data in the methodology showed that participants were more willing to participate. He (2014) conducted the study "Mapping Urban Perception: How Do We Know Where We Are?" to propose a new approach for examining urban spatial perception in an efficient, automatic, and scalable manner. The study utilized geotagged street views and a web-based visual survey to investigate urban perception. The study asked 394 participants to estimate the locations of street views from a familiar neighborhood. The analysis revealed that memory for the exact location of a place developed based on the degree of interaction and proximity to the center, rather than the frequency of encounters. Additionally, the study found that while web-based visual surveys were effective in collecting data quickly, they did not fully replace face-to-face surveys. Based on these methods, instead of using web-based surveys, face-to-face interviews with users

were conducted in the study area. Additionally, demographic data was not included in the study to encourage participants to be more willing to participate. Previous studies had been conducted with approximately 400 individuals. In order to reach a diverse group of users from different age groups, including residents, past residents, and newcomers, the number of interviewees was increased tenfold.

In the study, the Tanjant Road was divided into 6 areas of approximately the same length to reduce the likelihood of meeting the same person during the administration of the questionnaire and to provide random distribution. The determination of memorability variation based on user groups was not the aim of the study. On the contrary, the aim was to gather information from a large number of individuals regarding whether the religious structures were remembered or not. For each region, a total of 13 groups, consisting of two people each, were sent on two designated days per week, during both morning and afternoon time periods. To avoid interviewing the same person, the groups conducted their surveys at different times and in different directions within the area. During the administration of the questionnaire, randomly selected users were asked questions in a natural style, regardless of their gender and age, and the answers were recorded verbatim on paper. In order to find out about the rememberability of the religious buildings and/or their locations, such questions were asked: "Where is the X mosque? Do you know? How can I go to the X mosque? Can you describe it? Do you know any other mosques around/on this road? How can I go there?". All religious buildings were included in the survey and presented to users in each region. This process was repeated for 4 weeks. As a result of the entire survey study, 240 questionnaires were conducted for each religious building, and a total of 4080 questionnaires were obtained for the whole study. A total of 680 surveys were conducted, with an equal number in each region. Conducting face-to-face surveys with users was considered important in the study. Additionally, to ensure user comfort and accurate responses, questions regarding age, place of residence, and duration of stay in Trabzon were not asked, and the questions were naturally integrated into the users' daily lives. The data that were obtained were analyzed using SPSS v.23.00 and were evaluated statistically at 95% confidence level.

In order to obtain and interpret the results of the study in SPSS v23.00, each of the data obtained through the questionnaire was read and open-ended responses were given numerical values. The following variables have been created:

Area where the questionnaire is conducted

The code of the religious building named and unnamed

The area where the named and unnamed religious building is located

Whether or not the named building is known

Correct remembrance of the religious building

Reference points related to the named and unnamed religious building.

First, SPSS analyses were made on remembering the place of the religious building. The relationships between two categorical variables are generally examined using cross-tabulation (Crosstabs) analyses. When the number of categorical variables is more than two, it may not be possible to examine all interactions between variables using cross-tabulation analyses. In such cases, loglinear analysis is preferred. As a result of the crosstabulation analysis between the code of the religious buildings whose names and unnamed were given to the users and whether or not the users knew those buildings, the study unveiled the extent to which the users knew the locations of the buildings. Then, the proportion of the religious buildings whose locations were remembered correctly was found by making a crosstabulation analysis between whether or not the religious buildings whose names were given were known to the users and whether the users remembered the locations correctly. After the analysis, a chi-square analysis was made in order to find out whether the users correctly remembered the locations of the religious buildings whose names were given both in six areas and in the whole area. Finally, a loglinear analysis was made between the area where the survey was conducted, the area where the religious building was, and the correct remembering of the religious building in order to find out whether or not there is a distance relationship between the location where the religious building is asked to the user and the location of the religious building whose name is given to the user. Variables used in the loglinear analysis:

P1, P2, …, P6: Road zones variable

D1, D2, …,D6: Religious building zones variable

B1, B2: Result variable (knows and doesn't know)

Figure 2 provides a crosstabulation for three variables.

Variables in loglinear model writing are represented by symbols such as A (i = 1, 2), B (j=1, 2, …, 6) and C (k=1, 2, …, 6). If shown with symbols by remembering status A, zones B and religious buildings zone C, The saturated loglinear model for a crosstab of size 6x6x2 = 72 can be written in the form.

$$l_{ijk} = \lambda + \lambda_i^A + \lambda_j^B + \lambda_k^C + \lambda_{ij}^{AB} + \lambda_{ik}^{AC} + \lambda_{jk}^{BC} + \lambda_{ijk}^{ABC}$$

In this study, loglinear analysis method was used to examine the relationships between three categorical variables. Data were run with the help of SPSS package program. Under SPSS/Analyze/Loglinar/General preferences by using the;

Factors: A, B, C

Specify Model: Saturated

Option/Display/Frequences, Residuals, Estimates

Distribution of Cell Counts: Multinomial options, parameter estimation values, standard errors, Z statistics, significance levels and 95% confidence limits of the model were obtained.

Second, a crosstabulation analyses were made on the reference points that were used in describing the locations of religious buildings whose name and unnamed. Reference points related to religious buildings are the sign elements that users indicate while describing the location of the religious building. The identified markers are grouped within categories such as store names, focal points, intersections, bridge names, building names, road or street names, and neighborhood names. The reference points associated with the religious structure were determined through a relationship test (crosstabulation analyses). As a result of the analyses, the reference points that were shown when describing the locations of religious buildings were determined.

4. Results

The data that were obtained were analyzed over effective qualities/factors in focus, leaving a mark and remembering stages that form the image formation process.

4.1. Focus Stemming From Road Form

Structure of road (Bacon, 1969) and location of building in the road (Vinson, 1999) are caused user-focused. Being visible or located at sharp turns, road junctions, and concavities (Bacon, 1969) are factors that contribute to the attention-grabbing aspect of a structure and the user's focus on it. When we analysed them:

Considering the concavities stemming from the form of the Tanjant Road;Gülbahar Hatun Mosque, Ortahisar Büyük Fatih Mosque, Musa Pasha Mosque, Tabakhane Mosque, Mehmet Akif Ersoy Mosque, Pazarkapı Mosque, Çarşı Mosque and Hacı Kasım Mosque are religious buildings that are visible on the concave part of the road.

Considering the sharp turns where attention is increased;Hatuncuk Hatun Mosque, Hamza Pasha Mosque, Gülbahar Hatun Mosque, Ortahisar Büyük Fatih Mosque, Musa Pasha Mosque, Tabakhane Mosque, Çarşı Mosque, Hacı Kasım Mosque and Mehmet Akif Ersoy Mosque are religious buildings that are visible.

Considering the crossroads where attention is increased;Erdoğdu Merkez Mosque, Gülbahar Hatun Mosque, Ortahisar Büyük Fatih Mosque, Musa Pasha Mosque, Hacı Kasım Mosque and Mehmet Akif Ersoy Mosque are religious buildings that are visible (Fig. 3).

Crosstabulation values for all variables

ZONE * RELIGIOUSBUILDINZONE * KNOWING Crosstabulation

Count

KNOWING			RELIGIOUSBUILDINGZONES						Total
			D1	D2	D3	D4	D5	D6	
Knows	ZONE	P1	22	151	83	236	88	65	645
		P2	9	82	44	100	25	26	286
		P3	4	63	27	110	43	19	266
		P4	7	55	29	133	57	25	306
		P5	25	86	50	180	83	52	476
		P6	7	67	52	183	82	58	449
	Total		74	504	285	942	378	245	2428
Doesn't Know	ZONE	P1	108	157	24	349	88	31	757
		P2	36	51	3	67	28	3	188
		P3	24	32	10	78	23	6	173
		P4	43	62	10	81	21	7	224
		P5	43	103	13	193	43	7	402
		P6	33	68	3	151	65	8	328
	Total		287	473	63	919	268	62	2072
Total	ZONE	P1	130	308	107	585	176	96	1402
		P2	45	133	47	167	53	29	474
		P3	28	95	37	188	66	25	439
		P4	50	117	39	214	78	32	530
		P5	68	189	63	373	126	59	878
		P6	40	135	55	334	147	66	777
	Total		361	977	348	1861	646	307	4500

Figure 2. Crosstabulation values for all variables.

Askeri Mosque, Hatuncuk Hatun Mosque, Hamza Pasha Mosque, Gülbahar Hatun Mosque, Ortahisar Büyük Fatih Mosque, Mehmet Akif Ersoy Mosque, İskender Pasha Mosque and Yenicuma Mosque have strong perceptibility from the empty space due to the presence of buildings with large court-yards. In addition, Hatuncuk Hatun Mosque, Erdoğdu Merkez Mosque, Gülbahar Hatun Mosque, Ortahisar Büyük Fatih Mosque, Hacı Kasım Mosque and Iskender Pasha Mosque have strong perceptibility in terms of providing gradual transi-tions and wide perspectives due to having courtyards.

4.2. Focus Stemming From Building Form

For a religious building to be memorable and remain in long-term memory, the user needs to focus on it and maintain continuous focus (Philips and Chiristie, 2007; Wedel and Piet-ers, 2000). The focus on a religious building has been evalu-

ated in two ways. Firstly, when discussing whether religious building differentiate from their surroundings in terms of form characteristics, visual features, and aesthetics associated with Lynch's (1960) sign elements, and when considering whether they stand out in terms of form and function, uniqueness, size, or dominance (Rapoport, 1977):

All religious buildings are unique and different in terms of form and function. Military Mosque, Hamza Pasha Mosque, Musa Pasha Mosque, Çarşı Mosque, Hacı Kasım Mosque, İçkale Mosque, İskender Pasha Mosque, Tavanlı Mosque and Tekke Mosque are simple. Erdoğdu Merkez Mosque, Ortahisar Büyük Fatih Mosque, Çarşı Mosque, Mehmet Akif Ersoy Mosque, Gülbahar Hatun Mosque, Musa Pasha Mosque, Hacı Kasım Mosque, Pazarkapı Mosque, Yenicuma Mosque and Tekke Mosque are dominant compared to their surroundings (Fig. 4).
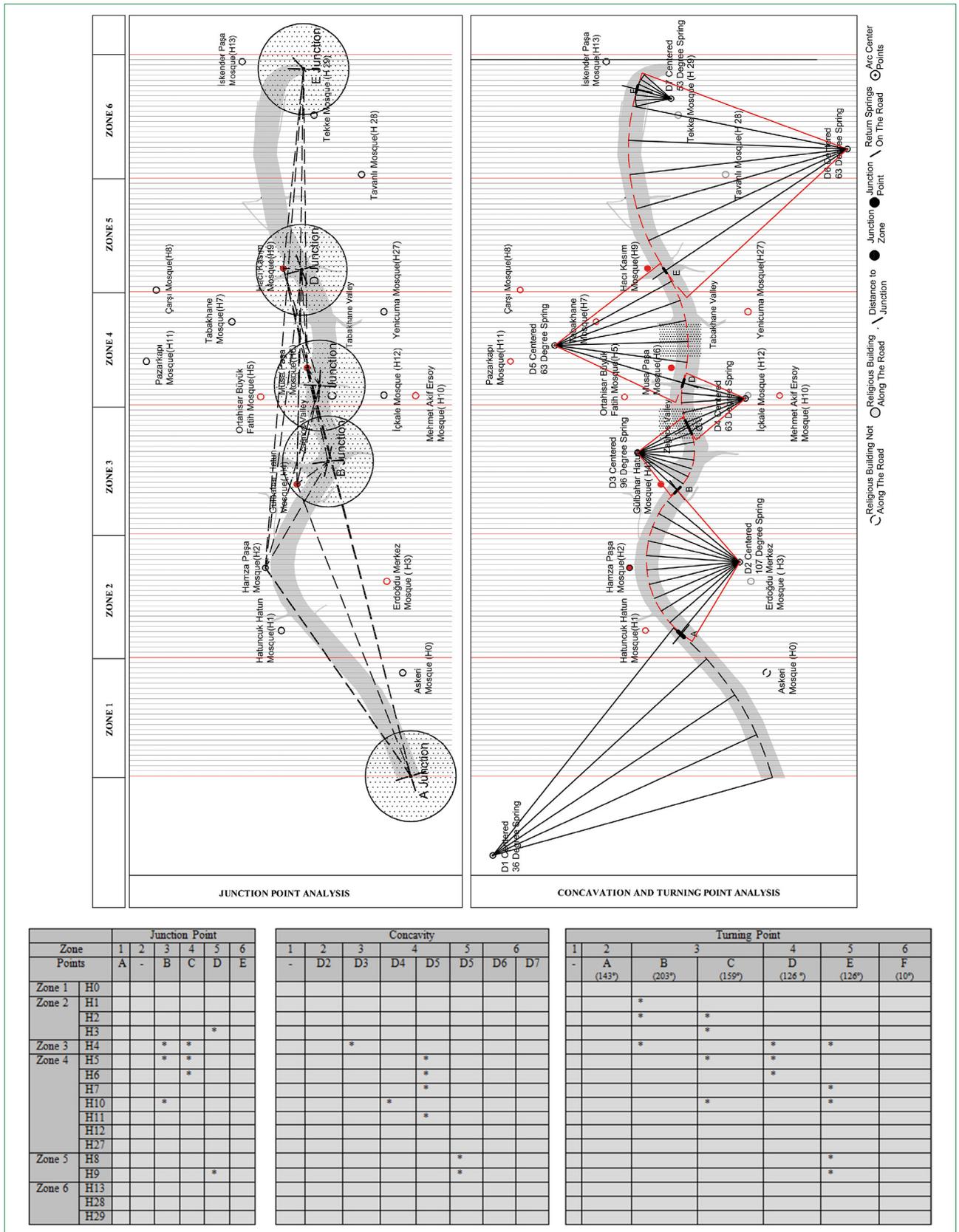
JUNCTION POINT ANALYSIS

CONCAVATION AND TURNING POINT ANALYSIS

		Junction Point							Concavity								Turning Point					
Zone		1	2	3	4	5	6	1	2	3	4		5		6	1	2	3		4	5	6
Points		A	-	B	C	D	E	-	D2	D3	D4	D5	D5	D6	D7	-	A (143°)	B (203°)	C (159°)	D (126°)	E (126°)	F (10°)
Zone 1	H0																					
Zone 2	H1																	*				
	H2																	*	*			
	H3					*													*			
Zone 3	H4			*	*					*								*			*	*
Zone 4	H5			*	*								*						*		*	
	H6				*								*							*		
	H7												*								*	
	H10			*							*								*		*	
	H11												*									
	H12																					
	H27																					
Zone 5	H8													*							*	
	H9					*								*							*	
Zone 6	H13																					
	H28																					
	H29																					

Figure 3. Religious buildings that stand out in terms of junction point, concavity and turning point (prepared by the authors).

Formations that strengthen the perception that create a empty effect in religious buildings																
	Zone 1	Zone 2			Zone 3	Zone 4							Zone 5		Zone 6		
	H0	H1	H2	H3	H4	H5	H6	H7	H10	H11	H12	H27	H8	H9	H13	H28	H29
Having a courtyard		*		*	*	*								*	*		
Being close to building with courtyard	*	*	*														
Dense housing					*								*				
Being close to the valley						*			*			*					
Being in the city nodes					*											*	

Concepts that strengthen focus on the building																		
		Zone 1	Zone 2			Zone 3	Zone 4							Zone 5		Zone 6		
		H0	H1	H2	H3	H4	H5	H6	H7	H10	H11	H12	H27	H8	H9	H13	H28	H29
Simple		*		*				*				*	*	*	*	*	*	*
Unique /only	Formal	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Functional	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Dominant	Dimensional			*		*				*				*				
	Size				*	*	*		*	*		*	*	*	*			*
Diversity	Formal	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*
	Functional	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Figure 4. Formations that create a empty space and concepts that strengthen focus on the building (prepared by the authors).

Period of visibility of religious buildings (sec.)																	
	Zone 1	Zone 2			Zone 3	Zone 4							Zone 5		Zone 6		
	H0	H1	H2	H3	H4	H5	H6	H7	H10	H11	H12	H27	H8	H9	H13	H28	H29
Zone 1																	
Zone 2		130	210														
Zone 3			152		434	318	86		224								
Zone 4				57	217	173	360	173	144	28	94	14	94	72			
Zone 5				43		14					28			297			
Zone 6																	

Figure 5. Period of visibility of religious buildings (sec.) (prepared by the authors).

4.3. Focus in Terms of Whether It Was Retained in Short-Term Memory

For a religious building to leave a mark in long-term memory and be remembered afterward, it is important for the user to initially focus on the structure for the first 3-5 seconds and then be continuously stimulated by the religious structure for a period of 20 minutes to 1 day (Rapoport, 1981; Küçüköner, 2007; Öymen Özak and Pulat Gökmen, 2009; Downs and Stea, 1973; Göregenli, 2010; Hergen-hahn et al., 2000; Şenel, 2003). Based on this, before religious buildings are transferred to long-term memory, so the transfer or non-transfer of information to short-term memory is considered. İt is evaluated that;

It was found that all religious buildings discussed in the present study provide focus and take a place in short-term memory. The religious building that retain in the memory the longest is Gülbahar Hatun Mosque with 651 seconds, and the shortest one is Yenicuma Mosque with 14 seconds (Fig. 5).

4.4.Rememberability

When evaluating the memorability of religious buildings, it can be assessed based on whether the location of the religious buildings is known or unknown and which referencences are used to describe their locations:

4.4.1. Remembering the Location of the Building

54% of the users stated that they know the religious buildings whose names were given. A great majority of them (81.2%) have correctly described these religious buildings. 46% in area number 1, 60.3% in area number 2, 60.6% in area number 3, 57.7% in area number 4, 54.2% in area number 5, and 57.8% in area number 6. All religious buildings were remembered correctly by about half of the users. Religious buildings were remembered most accurately in area 3 (60.6%), and least in area 1 (46.2%). When the Tanjant Road is evaluated as a whole;Gülbahar Hatun Mosque, Ortahisar Büyük Fatih Mosque, Tabakhane Mosque, Hacı Kasım Mosque and İskender Pasha Mosque are the most remembered religious buildings, respectively (Fig. 6).

Remembrance of the location of religious building (sig. value)							
The Value of Sig.		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Rate of Remembering		%46	%60,3	%60,6	%57,7	%54,2	%57,8
Zone 1	H0	-,082	-,058	-,052	-,066	-.033	
Zone 2	H1				-,028		
	H2		-,023				-,030
	H3					-,024	
Zone 3	H4	+,067	+,051	+,023		+,044	+,057
Zone 4	H5		+,037				+,023
	H6	-,023	-,050				-,037
	H7	+,039	+,031	+,026	+,022		
	H10	-,035		-,034		-,024	-,033
	H11						+2,8
	H12	-,033	-,021	-,028		-,047	
	H27						
Zone 5	H8		-,025				-,021
	H9			+,023		+,041	
Zone 6	H13	+,044	+,033		+,024	+,055	+,052
	H28						
	H29						

Figure 6. Remembrance of the location of religious building (sig. value) (prepared by the authors).

In addition, as can be seen in Figure 7, as a result of the loglinear test performed in terms of memorability over the name, the main effects of the A, B, and C factors were found to be significant at the $p<0.01$ level. In the model, the state of being remember was found to be positive, Region 1 and religious buildings zone 1, 2, 4 and 5 were found to be positively effective ($p<0.05$). If the binary interactions of factor A (rememberability), factor B (zones) and factor C (zone of religious building) are shown as AB, AC, BC and triple interaction as ABC, B1A1, B1C1, B1C2, B1C4, B1C5 bilateral interactions and A1B1C2, A1,B1C5, A1B3C4, A1B4C5 triple interactions were found significant. Statistically significant interactions with $p<0.05$ level have a positive effect and are described in more detail below (Fig. 7).

B1A1:   1st Zone and remember

B1C1:   1st Religious building and remember

B1C2:   2nd Religious buildings and remember

B1C4:   4th Religious building and remember

B1C5:   5th Religious building and remember

A1B1C2: 2nd Religious building 1st Zone and remember

A1B1C5: 5th Religious building 1st Zone and remember

A1B3C2: 2nd Religious buildings 3 Zone and remember

A1B4C5: 5th Religious building 4 Zone and remember

When asked for nearby religious buildings without giving names, the users often described the closest religious buildings based on their location. According to this, the following are the most remembered religious buildings: Gülbahar Hatun Mosque and Erdoğdu Merkez Mosque in area number 1; Hatuncuk Hatun Mosque, Hamza Pasha Mosque and Gülbahar Hatun Mosque in area number 2; Hamza Pasha Mosque and Gülbahar Hatun Mosque in area number 3; Musa Pasha Mosque, Ortahisar Büyük Fatih Mosque, Mehmet Akif Ersoy Mosque, Hacı Kasım Mosque and Tabakhane Mosque in area number 4; Hacı Kasım Mosque in area number 5; İskender Paşa Mosque, Hacı Kasım Mosque and Tabakhane Mosque in area number 6.

4.4.2. Reference Points

When the reference points used in remembering the places of religious buildings are examined;

With reference to the public buildings; Hatuncuk Hatun Mosque with Trabzon Science High School and Recruiting Office; Hamza Paşa Mosque with Governor's Building;Gülbahar Hatun Mosque with Varlıbaş Shopping Center;and Pazarkapı Mosque with Trabzon Fruit and Vegetable Market are the religious buildings that are remembered with their places associated with public buildings nearby.

With reference to the stores; Hamza Pasha Mosque, Hacı Kasım Mosque and İskender Pasha Mosque are the religious buildings whose places are remembered with reference to different store names.

With reference to the a place/neighborhood; Erdoğdu Central Mosque, Çarşı Mosque, Mehmet Akif Ersoy Mosque, Pazarkapı Mosque are the religious buildings that are remembered with reference.

With reference to the connections; The religious buildings that are remembered with reference to neighboring roads and their connection are as follows: Erdoğdu Central Mosque,

Three-factor Saturated model results						
Parameter Estimates[c,d]						
Parameter	Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Constant	2,140[a]					
[KNOWING = 1] * [ZONE = 1]	-1,197	,426	-2,807	,005	-2,032	-,361
[KNOWING = 1] * [RELIGIOUSBUILDING ZONE = 1]	-3,426	,546	-6,276	,000	-4,495	-2,356
[KNOWING = 1] * [RELIGIOUSBUILDING ZONE = 2]	-1,944	,405	-4,797	,000	-2,738	-1,150
[KNOWING = 1] * [RELIGIOUSBUILDING ZONE = 4]	-1,737	,383	-4,535	,000	-2,488	-,986
[KNOWING = 1] * [RELIGIOUSBUILDING ZONE = 5]	-1,698	,403	-4,218	,000	-2,487	-,909
[KNOWING = 1] * [ZONE = 1] * [RELIGIOUSBUILDING ZONE = 2]	1,173	,473	2,477	,013	,245	2,101
[KNOWING = 1] * [ZONE = 3] * [RELIGIOUSBUILDING ZONE = 2]	1,515	,645	2,349	,019	,251	2,779
[KNOWING = 1] * [ZONE = 4] * [RELIGIOUSBUILDING ZONE = 5]	1,458	,631	2,310	,021	,221	2,696
a. Constants are not parameters under the multinomial assumption. Therefore, their standard errors are not calculated. b. This parameter is set to zero because it is redundant. c. Model: Multinomial d. Design: Constant + KNOWING + ZONE + RELIGIOUSBUILDINGZONE + KNOWING * ZONE + KNOWING * RELIGIOUSBUILDINGZONE + ZONE * RELIGIOUSBUILDINGZONE + KNOWING * ZONE * RELIGIOUSBUILDINGZONE						

Figure 7. Three-factor Saturated model results.

Çarşı Mosque, Mehmet Akif Ersoy Mosque and Pazarkapı Mosque with connection roads; Gülbahar Hatun Mosque with Kanuni Sultan Süleyman Bridge; Ortahisar Büyük Fatih Mosque with Zagnos Bridge; Tabakhane Mosque with Tabakhane Bridge and Uzunsokak.

With reference to the nodes of city; Gülbahar Hatun Mosque is remembered with reference to Atapark Square and İskender Pasha Mosque is remembered with reference to Atatürk Square.

With reference to junctions; Gülbahar Hatun Mosque, Ortahisar Büyük Fatih Mosque, Tabakhane Mosque and Hacı Kasım Mosque are the religious buildings whose places are remembered with reference to junctions.

Hatuncuk Hatun Mosque, Hamza Pasha Mosque, Gülbahar Hatun Mosque, Ortahisar Büyük Fatih Mosque, Musa Pasha Mosque, Tabakhane Mosque and İskender Pasha Mosque are the religious buildings that are remembered with their "visibility".

Askeri Mosque, İçkale Mosque, Yenicuma Mosque, Tavanlı Mosque and Tekke Mosque are religious buildings whose locations are not remembered.

Erdoğdu Merkez Mosque, Çarşı Mosque, Mehmet Akif Ersoy Mosque, Pazarkapı Mosque, İçkale Mosque and Yenicuma Mosque were not remembered in terms of "visibility", although they are visible from the road. However, even though İskenderpaşa Mosque is not on the Tanjant Road and is not visible from this road, users stated that the it is visible.

4.5. Visibility

In the mechanism of imagery, selectivity is achieved through visual search, and vision is essential for the formation of images in perception and memory (Sayar Avcıoğlu ve Akın, 2017, Desimone, 1996, Aydınlı, 1986, Berger, 2010, Parsa, 2004) and visibility affects the memorability of structures (Bacon, 1969). When examining the visibility of religious buildings, which impact both attention and memorability, factors such as duration of visibility, degree of visibility, and continuity and uniqueness are taken into account.

4.5.1. Duration of Visibility and Degree of Visibility

The visible religious buildings in areas 1 and 6 were not identified. Hatuncuk Hatun Mosque and Hamza Pasha Mosque in area number 2 are visible religious buildings. Hamza Pasha Mosque, Gülbahar Hatun Mosque, Ortahisar Büyük Fatih Mosque, Musa Paşa Mosque and Mehmet Akif Ersoy Mosque in area number 3 are visible religious buildings. Erdoğdu Merkez Mosque, Gülbahar Hatun Mosque, Ortahisar Büyük Fatih Mosque, Musa Paşa Mosque, Tabakhane Mosque, Çarşı Mosque, Hacı Kasım Mosque, Mehmet Akif Ersoy Mosque, Pazarkapı Mosque, İçkale Mosque and Yenicuma Mosque in area number 4 are visible religious buildings. Erdoğdu Merkez Mosque, Ortahisar Büyük Fatih Mosque, Hacı Kasım Mosque and İçkale Mosque in area number 5 are visible religious buildings. Of these, only Gülbahar Hatun Mosque, Musa Pasha Mosque and Hacı Kasım Mosque yielded 60% or more/very effective visibility in the duration of visibility (Fig. 8).

4.5.2. Continuity and Singularity in Visibility

Hatuncuk Hatun Mosque and Hamza Pasha Mosque, which become visible in area number 2, show continuity. These religious buildings, only Hamza Pasha Mosque is the only religious building throughout its duration of visibility. Hamza Pasha Mosque and Gülbahar Hatun Mosque, which become visible in area number 3, show continuity throughout their duration of visibility. Erdoğdu Merkez Mosque, Musa Pasha Mosque, Çarşı Mosque, Hacı Kasım Mosque, Pazarkapı Mosque and Yenicuma Mosque, which become visible in area number 4, show continuity throughout their duration of visibility. Of these, only Hacı Kasım Mosque is the only religious building throughout its duration of visibility. Erdoğdu Merkez Mosque in area num-

ber 5 shows continuity throughout its duration of visibility. Hacı Kasım Mosque is the only religious building that does not show continuity throughout its duration of visibility (Fig. 9).

5. Discussion

The study discussed the religious buildings that are located on and/or are visible from Tanjant Road, which is an important and intesely used road, by taking into account the image formation process (the stages of the focus, leaving a mark, and remembering). The discussion was made on the remembrability of religious buildings and the qualities that are effective in remembering them, and the following conclusions were reached;

Considering the qualities of concavity, turning points, the distance to the intersections and approaching from the empty space, all of which stem from the physical structure of the road and enable the user to focus; Gülbahar Hatun Mosque, Ortahisar Büyük Fatih Mosque and Mehmet Akif Ersoy Mosque are prominent religious buildings.

Considering the qualities of simplicity, singularity, dominance and diversity that stem from the form of the building and that allow the user to focus; Musa Pasha Mosque, Çarşı Mosque, Hacı Kasım Mosque, Yeni Cuma Mosque and Tekke Mosque are the prominent religious buildings.

All religious buildings provide the short-term memory retention time that is necessary for focus to take place.

In terms of structural permanence, religious buildings other than Erdoğdu Central Mosque and Mehmet Akif Ersoy Mosque are religious buildings that leave a mark as listed first-degree monumental buildings.

In terms of rememberability, Gülbahar Hatun Mosque, Ortahisar Büyük Fatih Mosque, Tabakhane Mosque, Hacı Kasım Mosque and İskender Pasha Mosque are the remembered religious buildings. Of these, Gülbahar Hatun Mosque and İskender Pasha Mosque are outstanding as the most remembered religious buildings in the area.

In terms of rememberability regarding the place of the religious buildings asked by name, no proximity relationship was found between the location of the user and the location of the building (Fig. 10). When asked about a religious building without specifying its name, the proximity of the building to the user gained importance, and the user remembered a religious building nearby.

When the description of the place of religious buildings, the number of reference points used, and positional/spatial, formal, functional and perceptual features of reference are examined; two references were generally used in religious buildings. In terms of the relationship between the remembered
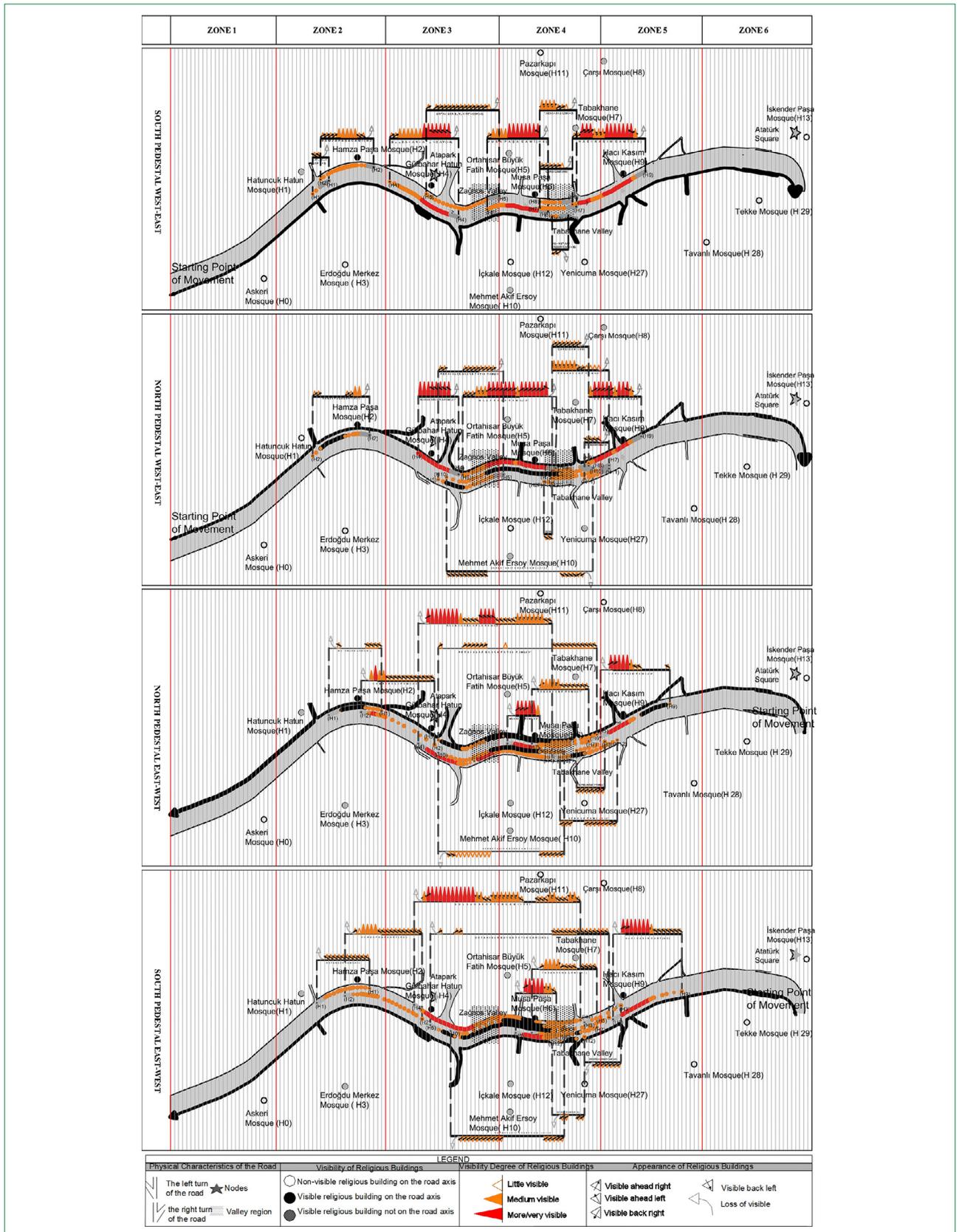
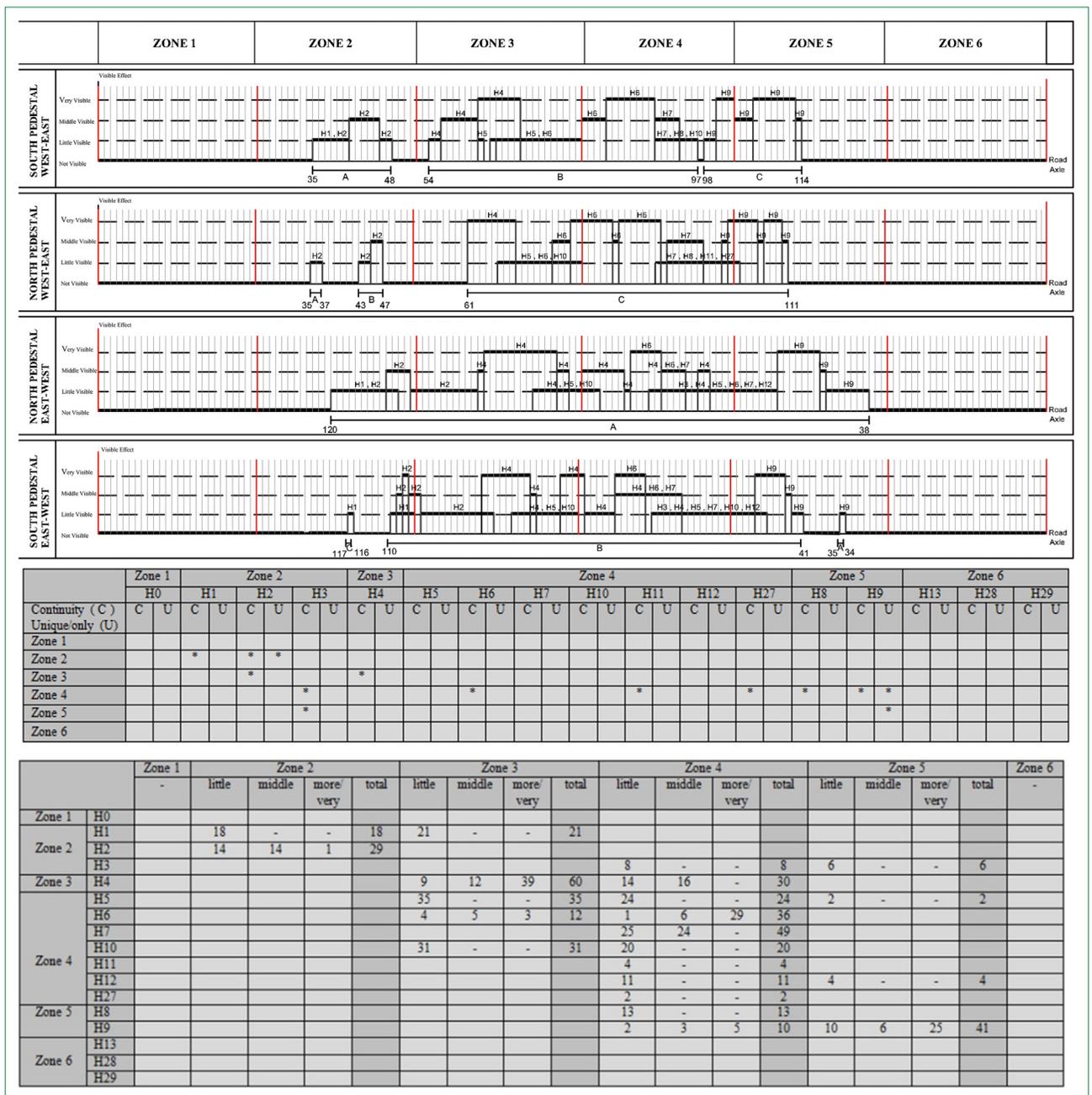**Figure 8.** Visibility of religious buildings (prepared by the authors).

Figure 9. Continuity and singularity of religious buildings (prepared by the authors).

religious buildings and reference points; Hatuncuk Hatun Mosque, Hamza Pasha Mosque, Gülbahar Hatun Mosque, Ortahisar Büyük Fatih Mosque, Musa Pasha Mosque, Tabakhane Mosque, Çarşı Mosque, Hacı Kasım Mosque and İskender Paşa Mosque are the religious buildings that the users remembered with reference points on opposite sides of the road.

Hamza Pasha Mosque, Gülbahar Hatun Mosque , Musa Pasha Mosque and Hacı Kasım Mosque, which are on the road and/or are visible from the road, are religious buildings that the users remembered without any reference. Iskender Pasha

Mosque, which is in an important nodes of the city, was also remembered without using any reference point, although it is not located on the Tanjant Road and is not visible. Religious buildings that have strong relationships with the road and focal points of the city and/or are visible were remembered without the need for a second reference.

In terms of "visibility" which affects both focus and remembering;Hatuncuk Hatun Mosque and Hacı Kasım Mosque are religious buildings that stand out. In terms of duration of visibility, while religious buildings other than Askeri
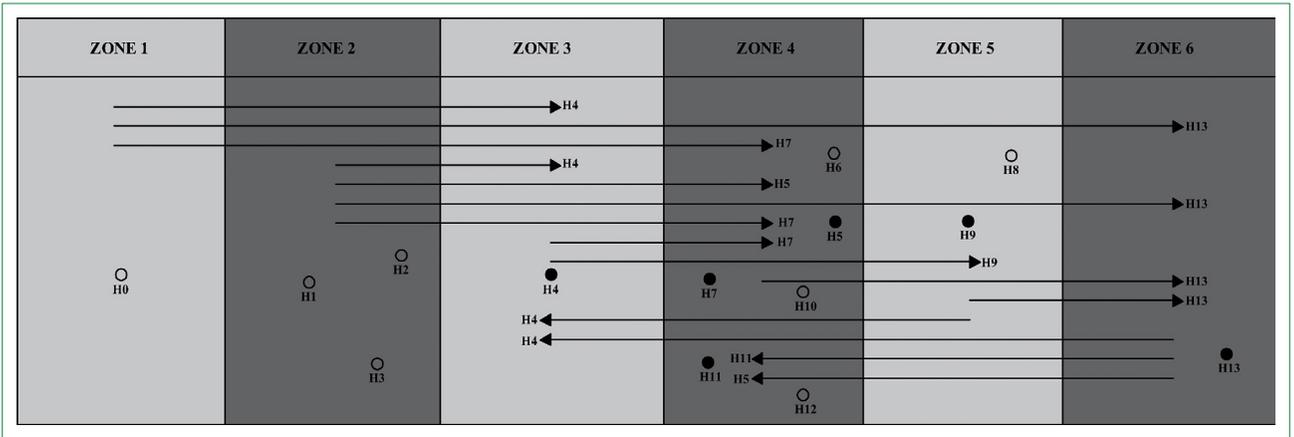
Figure 10. Distance between user location and the correct remembering of religious building (prepared by the authors).
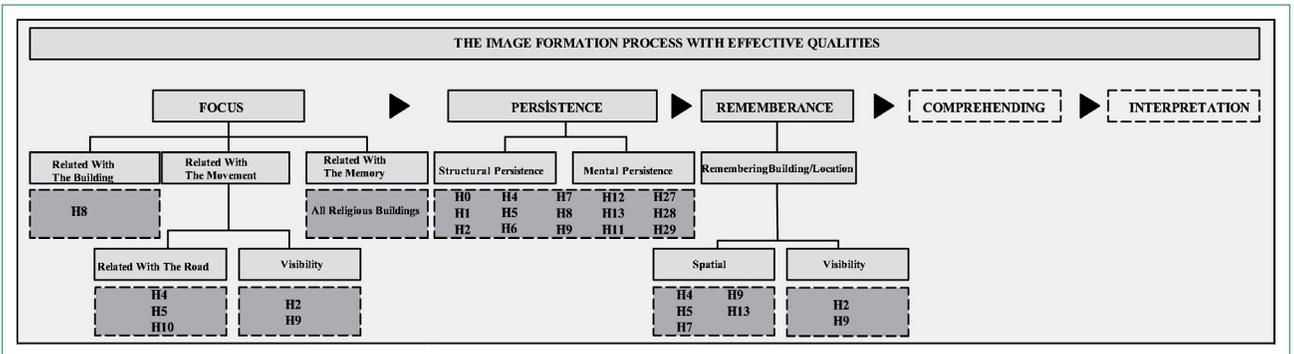

Figure 11. The image formation process with effective qualities (prepared by the authors).

Mosque, İskender Pasha Mosque, Tavanlı Mosque and Tekke Mosque are visible for a long time, only Hamza Pasha Mosque, Gülbahar Hatun Mosque, Musa Pasha Mosque and Hacı Kasım Mosque gave an effective visibility during the movement and are singular buildings throughout the duration of visibility. However, of these, only Gülbahar Hatun Mosque and Hacı Kasım Mosque were remembered. Although Hamza Pasha Mosque and Musa Pasha Mosque have an effective and singular visibility for a long time, they were not remembered (Fig. 11).

6. Conclusion

Those who live in the city need to know the city in which they live in in order to feel safe and have a sense of belong. One of the important manifestations that express this bond or relationship between the city and the city dweller is the urban image. Image is created as result of a series of processes that support each other, which consists of focusing, leaving a mark, remembering, understanding and comprehension. City image are defined by image elements that consist of landmarks, foci, borders and regions. By making a difference in the texture and silhouette of the city, especially the landmarks play an effective role in the user in finding the location and direction, determining the distance, discovering and remembering the city without losing time.

Remembering is the result of a mental process. In this mental process that is activated after the sensory and perceptual processes, information is first transferred to short-term memory. When this information is strengthened, it becomes permanent by being transferred to long-term memory. In this cycle, the city dweller remembers the images created by the previously acquired knowledge of the place. In this respect, "remembering" is a kind of recall and an important indicator of the image.

Movement is important in perception. Human beings perceive the city when in motion and creates his image of the city in this movement. In this respect, roads are important axes of movement and are effective in the user's perception of spaces and remembering them later.

Religious buildings are a group of buildings with a high potential of being a symbolic and semantic landmarks as well as having different formal and spatial features. In general, they have an important place in the memory of the city as permanent buildings with a historical value that provide continuity from the past to the present. Therefore, religious buildings should be investigated as effective buildings in remembering a place, as in many cities.

In the study, memorability was addressed through both the process of image formation and spatial perceptibility. The

process of image formation was evaluated in terms of attention, impression, and recall stages. The factors that contribute to focusing on the structure were examined. These factors include the variations, uniqueness, dominance derived from the physical characteristics of the structure, as well as the presence of the structure at turns and intersections based on the physical characteristics of the road. In addition to these factors, the factors that primarily affect perception, such as visibility, duration of visibility, and continuity of visibility, were also evaluated in terms of the memorability of the structure. Tanjant Road is one of the significant urban spaces in Trabzon, which is heavily used by different users and is associated with important focal points of the city. It is a place where historical accumulations and daily life intersect, and where residents of Trabzon have accumulated experiences in their movements within the city, both on foot and by vehicle. Therefore, it is considered one of the priority spaces in terms of perceptibility. The following data were obtained as a result of the pedestrian movement.

Religious buildings that have a positional relationship with nodes and roads have stronger remembability. Religious buildings located in urban nodes are used intensively; therefore, they have a strong remembability as the places that the users discover first. This result is parallel to Vinson's (1999) view that the positional characteristics of religious buildings have an impact on their remembability.

In addition to the physical qualities of the religious buildings, their positional data and perceptibility in motion are also effective in the remembability of the religious buildings. That these are in such a way as to support each other strengthens the effect of the religious building in the process of image formation, and makes the user to focus, leaves a mark in the user and makes the user to remember the building. This result is parallel to Bacon's (1969) view that the location of religious buildings at sharp turns, junctions and concavities depending on the shape of the road provides focus.

Over time, the buildings are read independently from their locations, they read from in the user's memory and evaluated within the whole city. There is no proximity relationship between the location of the user and the location of the religious building in remembering the religious building. A religious building that is far from the user can also be remembered. The users may not know a building that is very close to them.. However, in remembering the location of the religious building, there is a proximity relationship between the location of the user and the location of the religious building.

The relationship between the religious building and the city is remembered through the holistic effect/image value that it creates in the user. The study discussed an important

axis only. However, in their evaluations, the users remembered the religious buildings in relation to the whole city. This showed that in order to strengthen the rememberability of a religious building, the relationship of the building with the city must be clearly demonstrated. This result is parallel to the view of Hillier and Hanson (1984) that people cannot experience the city from a single point, and that the relationship between city parts and the city is revealed by the combined parts.

In remembability, rather than the structural features of religious buildings, locational data and their perception in motion play a role. The religious buildings that the study discussed are structurally similar to each other. The positional data and the perceptibility in motion of these buildings make them different from each other. That is to say, in order for the religious buildings to be remembered in the city, the locations of the buildings were more important than how they were. This result is parallel to Nasar's (1989) view that the movement around the building is important in remembering the buildings. In addition, the view that the positional value of buildings should have power to attract attention (Appleyard, Lynch and Myer, 1964) also supports this result.

The visibility of buildings with strong remembability should be ensured or strengthened. Every visible religious building may not be remembered, but every remembered building is visible. In order for a religious building that had taken a place in memory still to be rememberable, it must be visible and has not got lost among the newly built buildings. This result is parallel to Lynch (1970) and Rapoport (1977)'s view that buildings differentiate from their surroundings (Rapoport, 1977) in terms of form features, visual features and aesthetics, providing focus due to the physical condition of the building.

To sum up, in order for the religious building to be remembered, it should be evaluated not in a single part of the city, but in the whole city, and the factors that ensure rememberability must be identified and protected. Perception with motion is an important part of image formation and it is important to evaluate buildings from this perspective.

The remembability of the religious buildings is affected by the location of the religious building on the road, its location in the urban nodes, its visibility, and its continuity throughout the visibility.

Today, due to the opportunities provided by technology, different forms can be designed and produced. In this sense, religious buildings can also be produced in different forms. However, religious buildings that can be found in similar formations in many cities are remembered for their spatial data that differentiates them rather than their physical structures.

In addition, in every intervention to the city, the mental marks left by the city, which are living and which have their own memory, in the users should be preserved. It is inevitable that these marks in the memory of the city should not be obliterated but strengthened for the formation of livable cities and cities with character. Only within this structurre can the user feel safe and have a sense of belonging.

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