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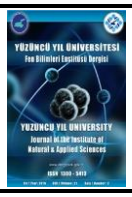

Research Article

The Role of Tourism in Cultural Heritage Conservation: Historical Faith-Based Travel Routes in Diyarbakır/Suriçi Analyzed Through the Isovist Method

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Abstract: The tourism sector holds a critical role in the safeguarding of cultural heritage. In this context, cultural travel routes not only facilitate the conservation of historical structures but also provide visitors with a more informed and immersive experience. This study investigates historical faith-based structures in the Suriçi district of Diyarbakır, aiming to design travel routes that encompass the maximum number of these sites while optimizing the cultural tourism experience. Accordingly, Suriçi was segmented into three parts along its main axis, and three distinct routes were proposed for each segment. In addition, a primary route was identified to provide a more comprehensive engagement with faith-related landmarks. To evaluate the effectiveness of the proposed routes, the Isovist method was employed, emphasizing the visibility of the structures and the perceptual experiences afforded to visitors. The findings indicate that the suggested routes enhance both the visibility of cultural assets and the legibility of the urban fabric, thereby supporting heritage conservation. In a city such as Diyarbakır, historically characterized by diverse religious traditions, routes structured around themes of belief and worship offer a deeper understanding of the region's architectural heritage, promoting both its appreciation and its preservation. A central objective of this study is to augment the effectiveness of conservation and tourism planning through the application of objective analytical tools such as the Isovist method. Implemented for the first time in the context of Diyarbakır/Suriçi, this approach provides an innovative and sustainable strategy for the protection and promotion of cultural heritage.

Keywords: Cultural heritage, Diyarbakır/Suriçi, Faith-based structures, Isovist, Travel routes

Turizmin Kültürel Mirasın Korunmasındaki Rolü: Diyarbakır/Suriçi'nde Tarihi İnanç Temalı Seyahat Rotalarının Isovist Yöntemiyle Analizi

Öz: Turizm sektörü, kültürel mirasın korunmasında kritik bir role sahiptir. Bu bağlamda, kültürel seyahat rotaları yalnızca tarihi yapıların korunmasını kolaylaştırmakla kalmamakta; aynı zamanda ziyaretçilere daha bilinçli ve kapsayıcı bir deneyim sunmaktadır. Bu çalışma, Diyarbakır Suriçi bölgesindeki tarihi inanç temelli yapıları incelemekte ve kültürel turizm deneyimini iyileştirirken bu yapılardan en fazla sayıdakini kapsayan seyahat rotalarını tasarlamayı amaçlamaktadır. Bu kapsamda Suriç, ana ekseni boyunca üç parçaya ayrılmış ve her parça için üç ayrı rota önerilmiştir. Ayrıca, inançla ilgili önemli yapıların daha kapsamlı bir şekilde deneyimlenmesini sağlamak amacıyla bir ana rota belirlenmiştir. Önerilen rotaların etkinliğini değerlendirmek için, yapıların görünürlüğüne ve ziyaretçilere sunduğu algısal deneyimlere odaklanarak İzovist yöntemi uygulanmıştır. Bulgular, önerilen rotaların hem kültürel varlıkların görünürlüğünü hem de kentsel dokunun okunabilirliğini artırdığını ve böylece mirasın korunmasına katkı sağladığını göstermektedir. Tarih boyunca çeşitli dini geleneklerin merkezi olmuş bir şehir olan Diyarbakır'da, inanç ve ibadet teması etrafında yapılandırılmış rotalar, bölgenin mimari mirasını daha derinlemesine anlamayı sağlayarak hem takdirini hem

Received Date: 03.06.2025
Accepted Date: 09.01.2026

How to cited: Şahin, M., and Olğun T. N. (2026). The Role of Tourism in Cultural Heritage Conservation: Historical Faith-Based Travel Routes in Diyarbakır/Suriçi Analyzed Through the Isovist Method. *Yuzuncu Yil University Journal of the Institute of Natural and Applied Sciences, 31:55-70* https://doi.org/10.53433/yyufbed.1713360

de korunmasını desteklemektedir. Çalışmanın temel amacı, İzovist yöntemi gibi nesnel analitik araçların uygulanması yoluyla koruma ve turizm planlamasının etkinliğini artırmaktır. Diyarbakır/Suriçi bağlamında ilk kez uygulanan bu yaklaşım, kültürel mirasın korunması ve tanıtımı için yenilikçi ve sürdürülebilir bir strateji sunmaktadır.

Anahtar Kelimeler: Diyarbakır/Suriçi, Gezi rotası, İnanç yapıları, İsovist, Kültürel miras

1. Introduction

Suriçi, a prominent settlement area of Diyarbakır known for its diverse cultural wealth, is a heritage site that embodies the traces of various civilizations through its multilayered historical structure. Among the historical building stock of this region, places of worship constitute a significant portion, not only due to their religious functions but also as spaces that shape urban memory and social life. However, in a settlement such as Suriçi, characterized by a dense historical infrastructure and an organic street texture, a comprehensive approach is required to ensure the holistic conservation of places of worship and their sustainable presentation to visitors. In this context, in-depth analyses of perceptual accessibility and spatial experience are essential. Enhancing the perceptibility of these places of worship within their contextual and historical layers contributes to the development of meaningful and direct routes, both for tourism and for the everyday use of the local population. Consequently, in conservation efforts, it becomes crucial to consider not only the historical and cultural values of these spaces but also the visitor experience.

The natural and historical texture of Diyarbakır Suriçi, along with its strategic location on major commercial and military routes, has facilitated the coexistence of communities with diverse cultural characteristics in the city (Çatalbaş, 2012). Among the most significant representatives of these communities are the places of worship that have survived to the present day. Suriçi, which has been continuously inhabited since approximately 3000 BCE, contains places of worship belonging to different faiths (Karaca, 2006). Particularly during the Turkic-Islamic period, the number of religious structures within the settlement increased rapidly, with mosques and masjids constituting the majority (İlhan, 1994). Some of these structures have endured through the various historical layers of Diyarbakır and have been preserved as an integral part of its architectural heritage.

Within this framework, the central research problem of this study concerns the limited understanding of how perceptual accessibility and spatial experience can inform the conservation and sustainable visibility of historical places of worship in multilayered urban fabrics such as Diyarbakır Suriçi. Despite numerous conservation-oriented studies focusing on architectural documentation or physical restoration, there remains a gap in research that integrates spatial perception–based analyses into the management and design of cultural heritage routes. Accordingly, this study seeks to address the following research question: How can the historical places of worship located within the urban fabric of Diyarbakır Suriçi be analyzed in terms of spatial and perceptual experience using the Isovist method along specific routes, and how can this analysis contribute to conservation and sustainability through the creation of cultural heritage routes? The main objective is to enhance the visibility and experiential comprehension of these sites by proposing perceptually meaningful routes that promote both conservation awareness and sustainable visitor engagement.

The Isovist analysis method, selected as the core analytical tool of this research, provides a quantitative means of examining the visual and spatial characteristics that shape human perception in complex historical environments. Unlike purely descriptive or observational approaches, the Isovist technique enables a measurable interpretation of visibility and spatial cognition, making it particularly suitable for heritage areas with irregular and compact urban morphologies such as Suriçi. Previous applications of the Isovist method in cultural heritage studies have primarily focused on archaeological or urban morphological analyses (Wheatley, 1995; Llobera, 1996; Kim et al., 2019), yet its direct use in the development of cultural heritage routes remains limited. By employing this method in the context of Suriçi, this study aims to bridge this gap and demonstrate the potential of Isovist-based visibility analysis as a methodological tool for guiding heritage route planning. In doing so, it contributes a novel perspective to the discourse on architectural conservation and heritage tourism.

As a quantitative method for revealing and highlighting different layers within multilayered historical textures, the Isovist analysis holds significant potential. Defined as the "computational or numerical analysis of visibility," the Isovist method enables the calculation of visual fields and the examination of spatial structures through visibility graphs (Benedikt, 1979; Weitkamp et al., 2014). Various researchers have conducted studies using the Isovist method in both open and enclosed spaces, drawing conclusions about spatial perception based on the data obtained. Among them, Hanson analyzed residential structures through Isovist and other quantitative techniques (Hanson, 1994); Wheatley applied the method to an archaeological site (Wheatley, 1995); and Llobera focused on mapping spatial characteristics through quantitative visibility calculations (Llobera, 1996). More recent studies demonstrate that Kim et al. integrated the Isovist method with three-dimensional technologies to analyze urban spaces, while Zandniapour et al. utilized it in the design of urban open spaces (Kim et al., 2019; Zandniapour et al., 2025). A review of the relevant literature, however, reveals a notable lack of studies addressing visibility in relation to architectural heritage sites and historical urban textures in Turkey. Furthermore, recent works on visibility and heritage such as Huang et al. and Mehanna & Mehanna expand the methodological toolkit for visual experience and heritage route design (Huang et al., 2025; Mehanna & Mehanna, 2025). In particular, Huang et al. examine the visual experience of the Inner Ring Road around West Lake in Hangzhou via an index system combining naturalness, openness, artificiality, and traffic (Huang et al., 2025). Meanwhile, Mehanna & Mehanna propose a comprehensive framework for evaluating how heritage renewal interventions affect both visibility and pedestrian movement (Mehanna & Mehanna, 2025).

The historical places of worship in Diyarbakır Suriçi, which form a crucial component of the region's architectural heritage, play a pivotal role in fostering both the sustainable conservation of the historical texture and the cultural continuity of local communities. The primary objective of this study is to ensure the conservation of the places of worship within the historical context of Diyarbakır Suriçi, recognized as cultural heritage, and to enhance their visibility through increased and more meaningful visitation. To raise awareness regarding the preservation of these structures, the study seeks to design alternative routes that provide optimal and rapid visual access for visitors. Accordingly, the Suriçi area has been divided into three distinct zones, with four separate routes identified for each zone, offering the most advantageous visual perspectives. The selection of these areas excluded sections where traditional textures have been extensively degraded. The study's methodology integrates qualitative approaches, including literature reviews and field-based observations, while its quantitative analysis is primarily grounded in the Isovist method.

The findings obtained from this research are expected to contribute to the development of strategies that extend beyond the physical conservation of historical places of worship, facilitating their enhanced visibility within the broader context of spatial experience. Furthermore, the results aim to guide the planning of cultural heritage routes by enabling visitors to engage with these spaces in a more conscious and meaningful way. The paper is structured as follows: following this introduction, the methodological framework and data analysis process are detailed; subsequently, the findings and their implications for conservation and sustainable management are discussed.

2. Conceptual Framework

The conceptual framework of the study is formed by details related to conservation-oriented cultural routes and the historical places of worship located within the historical urban fabric of Diyarbakır Suriçi.

2.1. Cultural routes for conservation purposes

It is well-established that individuals in various regions of the world today seek to travel and explore new destinations, away from the demands of social life and routine conditions. The rich cultural heritage of our country offers an abundance of resources to fulfill this desire (Halaç & Benzer, 2019). However, the detrimental impacts on both natural and cultural heritage remain a critical issue in urban planning and conservation efforts, both locally and globally. Cultural routes, designed for both conservation and tourism purposes, have emerged as an increasingly popular planning tool for the sustainable conservation of tangible and intangible cultural values and for their transmission to future generations. The concept of experiencing cultural heritage elements within a structured route

framework offers advantages in terms of both conservation and the development of alternative, conscious tourism movements (Fırat & Erbaş, 2023). In this regard, structuring cultural heritage through well-designed tour routes, specifically tailored to the unique characteristics of an area, contributes to the protection of settlements with significant historical and cultural value while enhancing awareness and promoting these regions (Halaç & Benzer, 2019).

The concept of cultural travel routes is built upon the reorganization of corridors that were originally established for social, economic, commercial, and military purposes in the past (Fırat & Erbaş, 2023). The aim of these routes is not only to define paths for tourism but also to highlight and promote tangible and intangible cultural elements along these routes, ensuring their visibility, reuse, and preservation for future generations (Durusoy, 2013). In this context, urban and rural areas, archaeological remains, and natural heritage elements, which are deemed worthy of protection, can be considered the primary resources for cultural routes (Fırat & Erbaş, 2023).

Cultural routes can be regarded as an effective tool in conservation (ÇEKÜL Foundation, 2015). The functions and scenarios designed for these routes not only contribute to the protection of natural and cultural heritage but also add value to the surrounding environment (Fırat & Erbaş, 2023). Within this framework, cultural routes should be created with the following objectives:

-To ensure the holistic protection and promotion of natural and cultural heritage for its transmission to future generations.
-To provide protection and promotion from the specific to the general, ranging from individual structures to the broader urban fabric.
-To highlight both tangible and intangible values specific to rural settlements.
-To activate the social and economic benefits of traditional crafts and industries, including those at risk of being forgotten.
-To mitigate the negative impacts of tourism on urban and rural areas, archaeological sites, and other environments.
-To contribute to economic growth at the regional and national levels.
-To foster awareness among local users, promoting a sustainable approach to conservation.
-To establish connections between local stakeholders in conservation and tourism across various fields.
-To develop sustainable, innovative, and contemporary tourism experiences (ÇEKÜL Foundation, 2015).

Cultural travel routes today can be structured around specific themes. Among these, historical routes, natural routes, and combined historical and natural routes stand out (ÇEKÜL Foundation, 2015). Furthermore, a review of the relevant literature reveals studies by Fırat and Erbaş on the themed routes of cisterns in Istanbul, Vatan and Demir on bird palaces in Istanbul, Türker on ecotourism, and Çelik and Kadırhan on cultural, religious, and natural heritage routes in Şırnak (Türker, 2013; Vatan & Demir, 2021; Fırat & Erbaş, 2023; Çelik & Kadırhan; 2024). Additionally, studies on organic foods by Pellegrini et al. and on rural areas by Krauss Leite et al. suggest that cultural travel routes can be designed around different themes based on the nature of cultural and natural heritage and the surrounding environment, aiming at conservation (Pellegrini et al., 2023; Krauss Leite et al., 2023).

2.2 The concept of visibility and the Isovist

Isovist emerged and specialized as a part of the space syntax method. Space syntax is an analytical approach that enables the quantitative examination of various spatial configurations and facilitates meaningful inferences related to them (Hillier & Hanson, 1984; Can, 2014). The primary objective of this method is to examine the reciprocal relationship between space and social structure, demonstrating that while space shapes society, it is also influenced by it. One of the key aims of space syntax is to reveal how space shapes human interactions and to clarify its social, environmental, and economic implications (Czerkauer-Yamu, 2010). Moreover, when applied to urban open spaces, space syntax investigates the potential for people to gather comfortably and efficiently by analyzing the overlap between movement and visibility fields (Çil, 2006). Additionally, space syntax seeks to explore the relationship between spatial organization, human movement, and spatial perception, revealing the effects of these interactions on social structures (Yıldırım, 2002; Atak, 2009; Gündoğdu,

2014). In general, the space syntax method provides insights into the social logic of space through a topological analysis rather than solely relying on a geometric approach (Çakmak Yılmaz, 2011).

The Isovist method, as a specialized component of space syntax analysis, facilitates the examination of visual fields within a given space. This enables an in-depth understanding of how individuals perceive and interact with spatial environments. The application process of this method begins with the identification of an observation point, from which the visible areas are calculated, taking into account spatial barriers such as walls. Subsequently, the geometry and dimensions of the visual field are analyzed to assess spatial characteristics such as openness and enclosure levels in an analytical manner (Tumer et al., 2001) (Figure 1). This method is particularly useful in architectural design and urban planning processes. In architectural design, the Isovist method assists in predicting how users will perceive a given space. Additionally, in the planning of open spaces, it facilitates the analysis of factors such as security and spatial organization while also aiding in the estimation of pedestrian movement patterns. Overall, the Isovist method is regarded as a powerful and innovative tool that helps designers create more comfortable and functional spaces (Benedikt, 1979).

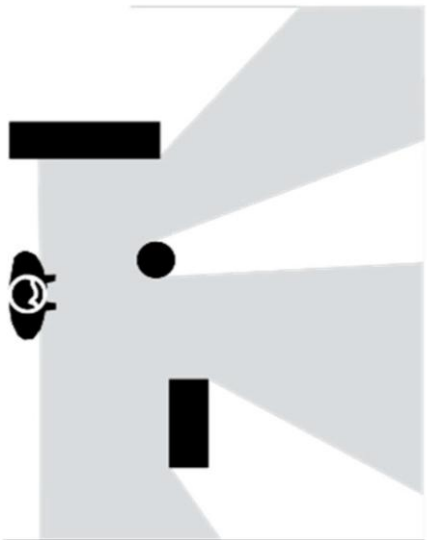

Figure 1. Isovist area scanned in the viewing direction according to user orientation.

The Isovist represents the limited volume of space visible from a specific point. The size and shape of this field can be analyzed, allowing for the measurement of spatial relationships and their mapping across the entire environment (Czerkauer-Yamu, 2010). This method is particularly useful in assessing visual experiences in open spaces, enabling the identification of spatial qualities such as spaciousness and compactness (Batty, 2001). In this context, the isovist method can be considered an effective analytical tool for designing open-space travel routes and identifying areas within these routes that have the potential to attract user attention.

3. Material and Methods

This study adopts a multidisciplinary methodological framework that combines spatial analysis, field documentation and visual perception studies to explore the relationship between cultural heritage structures and visitor accessibility within the historical urban fabric of Diyarbakır Suriçi. The main objective is to identify potential cultural travel routes that connect the city's historic places of worship by using visibility-based spatial analysis methods. The methodological process was designed to address both the tangible and perceptual dimensions of heritage conservation, emphasizing how spatial visibility contributes to the understanding and experience of historical environments. Accordingly, the study integrates cartographic data, field observations and analytical modeling to produce an evidence-based approach for evaluating spatial connections among religious structures.

The research process consists of several sequential phases, including data collection, digital mapping, route generation and visibility assessment. Initially, official zoning and cadastral maps were obtained and digitized to create a reliable base map for analysis. The study area was divided into

smaller sub-zones to allow for a more systematic and detailed evaluation. Field surveys were conducted to verify the current condition, accessibility and visibility of the selected cultural heritage buildings. The processed spatial data were then analyzed using the Isovist method within the Depmapx environment, which enabled the calculation of visibility polygons and the identification of areas with high visual connectivity. Through this methodological approach, the study not only defines optimal routes that enhance cultural continuity but also contributes to the development of visibility-based analytical tools for heritage-oriented urban planning.

3.1 Religious structures as cultural heritage in Diyarbakır/Suriçi

Turkey, due to its strategic location and rich historical background, harbors a vast cultural heritage (Madran & Özgönül, 2005). One of the settlements where this heritage is prominently observed is Diyarbakır. Located in the Southeastern Anatolia region of Turkey, Diyarbakır is situated along the banks of the Tigris River at an altitude of 750 meters above sea level (Melek & Demir, 2009). The city, which has been inhabited since around 2300 BC, has been under the rule of numerous civilizations, including the Eastern Roman and Ottoman Empires (Göyünç, 1994). Among the cultural and architectural heritage passed down from these civilizations, places of worship hold significant importance.

Diyarbakır was enclosed by walls constructed by the Eastern Roman Emperor Constantine II to protect the city from the Sassanids. These walls have largely survived to the present day. Today, the city of Diyarbakır is shaped around these walls and has developed as the "inside the walls" and "outside the walls" regions. It can be noted that the cultural and architectural heritage within the city walls is far more concentrated than in the areas outside the walls. The organic urban fabric of the walled city, with its narrow streets, is home to many public and civil architectural monuments, among which religious buildings are the most prominent (Göyünç, 1994).

Diyarbakır is known for its cosmopolitan nature in terms of religious diversity. Before the advent of Islam, Judaism and Christianity had a strong influence in the region. Christianity, in particular, spread rapidly throughout Diyarbakır and its surroundings during the Roman period. As a significant consequence, Christian places of worship were built, and some of these structures have survived as architectural heritage to this day (Melek & Demir, 2009; Haspolat, 2025). According to Ottoman Salnameleri (yearly records), between 1869 and 1905, there were 11 churches in Diyarbakır. Currently, 8 of these churches still exist, and some of the most notable examples that have largely preserved their original characteristics include Surp Sargis Church, Syriac Old Virgin Mary Church, Surp Giragos Church, Syriac Protestant Church, Armenian Catholic Church, and Armenian Protestant Church (Çatalbaş, 2012; Işık & Halifeoğlu, 2017).

Following its conquest during the Caliphate of Omar, Diyarbakır came under Islamic influence and became a multilayered city housing communities with various religious beliefs, traditions, and ethnic identities. Among these beliefs, Islam has maintained a strong presence throughout the city's history. Over time, various Turkish-Islamic states established dominance in the region, leading to the construction of numerous mosque and masjid structures throughout Diyarbakır, many of which have been preserved and repaired through the years (Göyünç, 1994; Melek & Demir, 2009).

Upon examining the historical fabric of the Diyarbakır Suriçi region, several historical mosques have been identified in the northwestern part of the area, including Ulu Mosque, Nebi Mosque, İskender Paşa Mosque, Şeyh Safa Mosque, Defterdar Mosque, Melik Ahmet Paşa Mosque, and Kara Mosque. In the southwestern part, Lale Bey Mosque, Taceddin Mosque, Behram Paşa Mosque, Hacı Ahmet Mosque, Ali Paşa Mosque, Ömer Seddar Mosque, and Paşa Mosque are located. The eastern section contains Hüsrev Paşa Mosque, Fatih Paşa Mosque, Şeyh Matar Mosque, Kadı Mosque, and Murtaza Paşa Mosque (Melek & Demir, 2009; Kejanlı & Dinçer, 2011; Işık, 2023).

3.2 Methodology

In this study, the Isovist analysis method was employed to determine potential travel routes for visiting the historical places of worship located within the Diyarbakır Suriçi area. Given the extensive spatial coverage of the study area, the region was divided into three sub-zones to facilitate a more

manageable and systematic analysis process. Areas that had been severely damaged or reconstructed due to historical events and conflicts were excluded from the study. Instead, the analysis focused on sections containing religious structures that could be connected through short distances, allowing for the identification of coherent and continuous travel routes. The locations of the selected structures were mapped to visualize their spatial distribution within the study area.

The base data used for the analyses consisted of the official zoning plan of the Diyarbakır Suriçi region, which was obtained from the relevant municipal archives. To enable computational analysis, the zoning plan was processed, edited, and converted into DXF format before being transferred to the Depmapx software environment. For each sub-zone, four potential travel routes were designed to ensure the maximum inclusion of cultural heritage structures. In the first stage, routes were designed to maximize the number of visible heritage sites along each path. Subsequently, these routes were refined and integrated into a set of comprehensive routes encompassing all identified heritage buildings.

Each of the determined routes was divided into equal-sized grids to support the visibility-based analysis. Observation points were defined within each grid cell, representing the potential viewpoints of visitors moving along the routes. Using the Isovist method, the visual fields corresponding to each observation point were calculated to determine the extent and spatial distribution of visible areas. This process was repeated for all routes and observation points across the three sub-zones.

Fieldwork was conducted to document and photograph the religious and cultural heritage structures within the study area, ensuring the accuracy and contextual understanding of the analyses. The processed DXF datasets were then analyzed in Depmapx, where visibility polygons and corresponding view fields were computed. The outcomes of the Isovist analyses were visualized and tabulated, revealing detailed information about which structures are visible from each observation point and the extent of their visual catchment areas along the routes.

Ultimately, this methodological framework enabled the identification of spatial patterns of visibility within the complex historical fabric of Suriçi. The findings not only highlight optimal routes that enhance the perceptual accessibility of cultural heritage sites but also provide a methodological reference for future studies aiming to analyze similar historical urban environments (Figure 2).

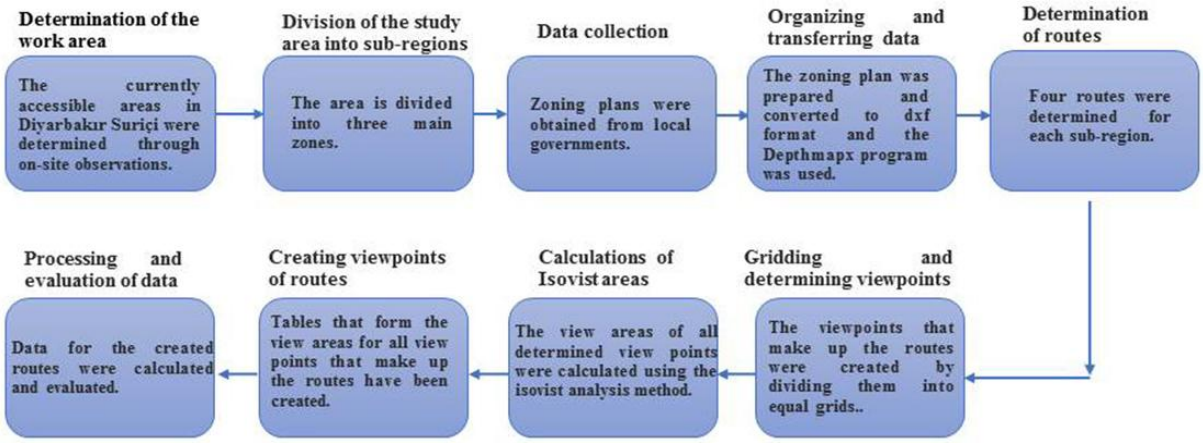

Figure 2. Method flow chart.

4. Findings

The study area comprises the historical worship structures located along the traditional routes within the Suriçi district of Diyarbakır. In this context, the Suriçi settlement has been analyzed in three separate sections, based on two main axes extending in the north-south and east-west directions. The eastern section was excluded from the study, as a significant portion has undergone extensive transformation, resulting in the loss of its original characteristics. However, the two sections in the western part were fully included within the scope of the research (Figure 3).

Figure 3. Three areas covered in the study in the Diyarbakır Suriçi settlement area (prepared by the authors).

The study area contains a total of 37 different historical worship structures. Of these, 8 are located in the northwestern section, 11 in the southwestern section, and 18 in the eastern section (Figure 4). The northwestern section comprises only mosques, while the southwestern section includes 2 churches and 9 mosques. In the eastern section, there are 4 churches, a shrine that is also used as a prayer hall (masjid), and 13 mosques. These structures, most of which are situated along different streets, embody significant cultural values as they represent the ancient religious history of Diyarbakır.

It should be noted that certain historically significant structures within the Diyarbakır Inner Castle, such as the Hz. Süleyman Mosque and St. George Church, were not included in the study. The exclusion of these structures is due to their limited accessibility and ongoing restoration works during the study period, which prevented accurate spatial and visibility analysis. This decision ensures that all structures analyzed could be systematically observed along the defined routes without interruption or distortion.

Following the delineation of the study areas and the identification of the historical worship structures within them, tour routes based on these structures were defined for each section. The selection of the tour routes for each section was based on a combination of spatial distribution, cultural significance, and accessibility of the historical worship structures. Each route was designed to provide a comprehensive visual and experiential coverage of the religious structures, ensuring that visitors could engage with both prominent and lesser-known sites. The choice to establish four routes per study area was made to balance thorough coverage with practical walking distances, allowing for multiple perspectives and variations in visitor experience.

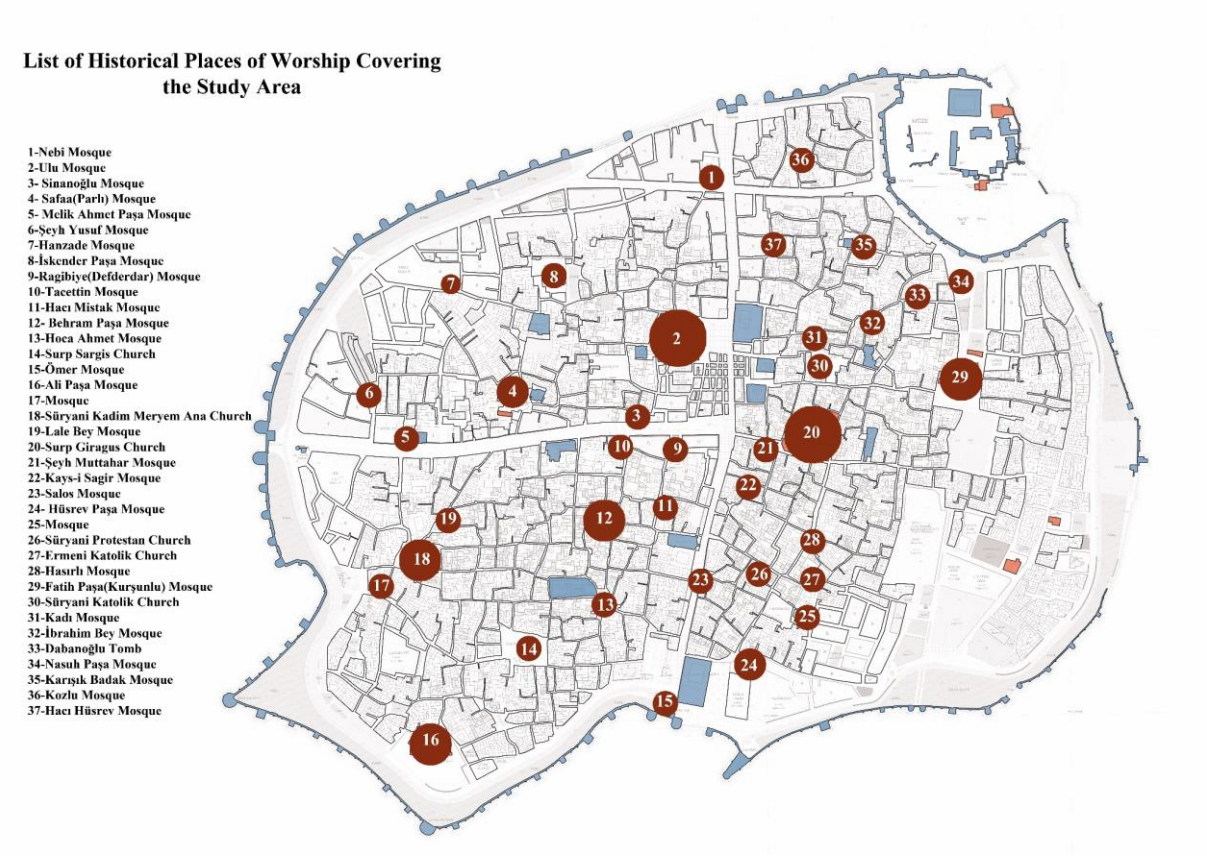

Figure 4. Locations of religious structures in the areas examined in Diyarbakır Suriçi (prepared by the authors).

In this context, four distinct tour itineraries were developed for each section, allowing for an immersive experience of all religious structures in the area. For instance, the fourth route in the first section includes the Diyarbakır Grand Mosque (Ulu Camii), which holds symbolic significance for both Diyarbakır and the Islamic world. Through the use of the Isovist method, the area where the Grand Mosque is first perceived was determined, thereby highlighting the significance of this route as a faith-based itinerary (Figure 5).

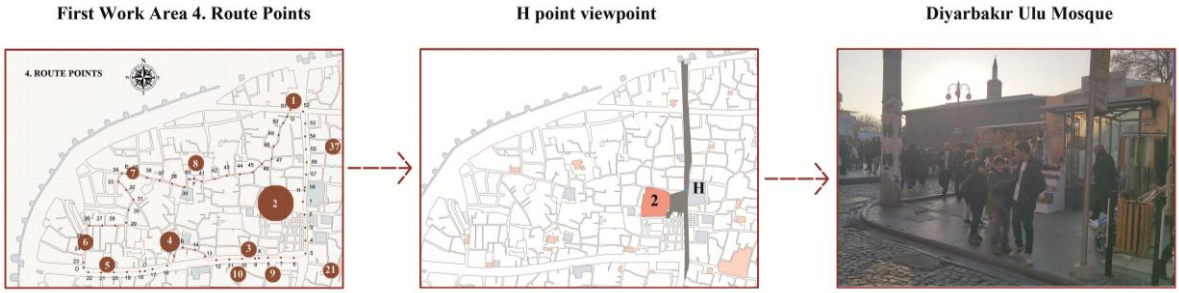

Figure 5. Isovist analysis showing the first area where Diyarbakir Ulu Mosque is visible from the viewpoint of point H on the fourth excursion route within the first study area (prepared by the authors).

The Isovist method was employed for two main purposes. First, it allowed the researchers to assess the visibility of structures along the proposed routes, ensuring that all selected viewpoints offered optimal visual access to the buildings. Second, it served as a validation tool to evaluate whether the pre-defined routes successfully enhanced the perceptual experience of visitors regarding

the spatial and symbolic significance of the religious structures. In this way, Isovist analyses both informed route planning and provided objective evidence of the visual fields along each itinerary.

The analysis applied using the Diyarbakır Grand Mosque (Ulu Camii) as a reference in Figure 4 was conducted for all designated study areas and the identified viewpoints along the defined tour routes. In this context, four routes were established within the northwestern study area, designed to start from and return to the Diyarbakır Grand Mosque. Along these routes, visual fields were calculated using the Isovist method from each viewpoint, which was selected with a focus on worship structures. The selected viewpoints are equidistant from one another. The blue points in the visual perspectives indicate the locations where the structures are first perceived (Figure 6). Evaluations indicate that along Route 1, designated for Study Area 1 in the northwest, structures numbered 1, 2, 3 and 5 are visible. On Route 2, structures numbered 2, 3, 4, 5 and 6 can be observed. Route 3 provides views of structures numbered 1, 2, 7 and 8, whereas Route 4 allows for the observation of all structures along the route, namely those numbered 1, 2, 3, 4, 5, 6, 7 and 8. Additionally, the viewpoints from which visitors on Route 4 observe these structures are indicated with blue markers.

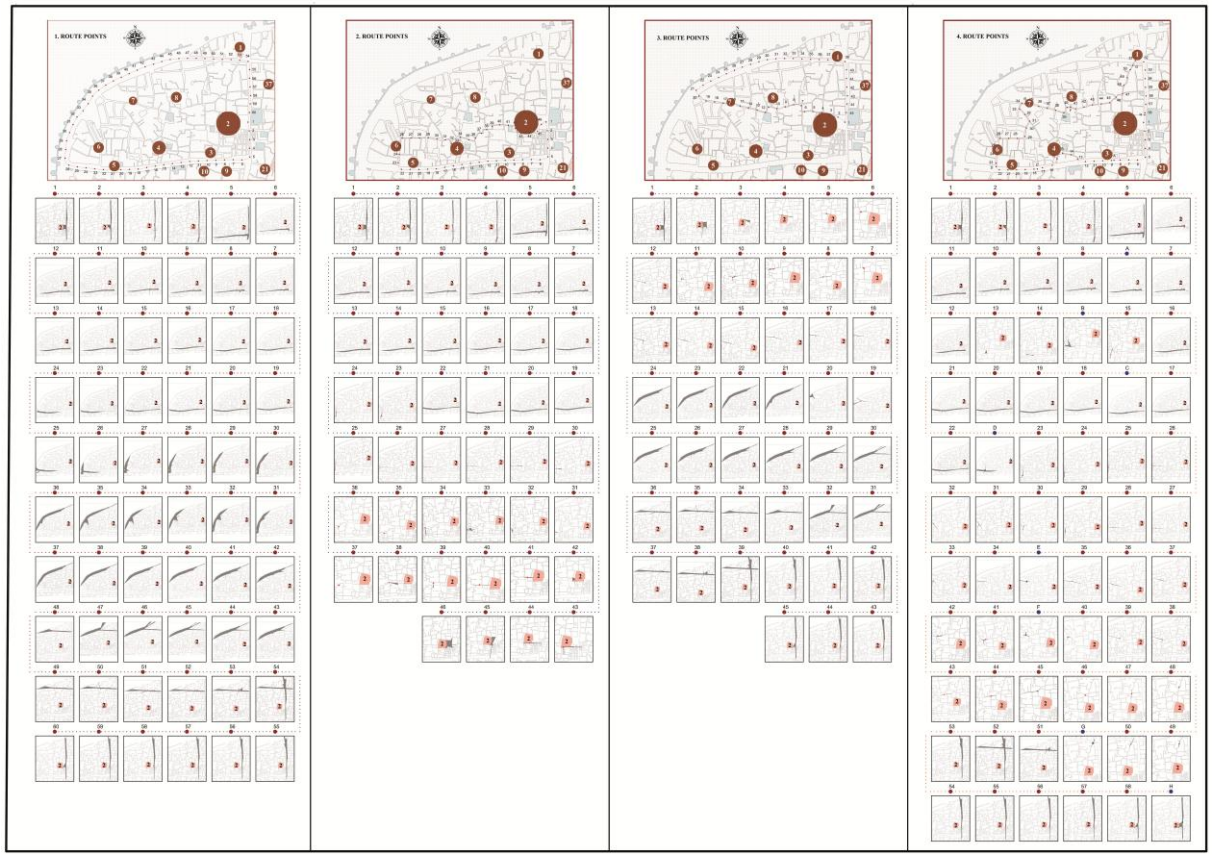

Figure 6. Isovist analyses on the travel routes created in the first area (prepared by the authors).

Similar to the northwestern section, in the second study area designated in the southwest, four sightseeing routes were established, and Isovist analyses were conducted along these routes. The study area was divided into sub-sections, ensuring the equal segmentation of all routes, and viewpoints were determined accordingly. The starting point of these routes was selected as the most accessible corner of the entire area, and the routes were designed to return to the same point at the end of the circulation.

In this context, four routes were also designated in the second study area, with the fourth route specifically designed to provide views of all historical religious structures within the area. The viewpoints identified along these routes were visualized and presented in Figure 7. On Route 1, structures numbered 9, 10, 15, 16 and 17 are visible, while on Route 2, structures numbered 9, 10, 11, 13, 14 and 17 can be observed. Route 3 includes views of structures numbered 9, 10, 11, 12, 17, 18 and 19, whereas Route 4 allows for the observation of all structures, specifically those numbered 9, 10,

11, 12, 13, 14, 15, 16, 17, 18 and 19. Additionally, as in the first study area, the viewpoints from which structures on Route 4 can be observed are marked with blue points.

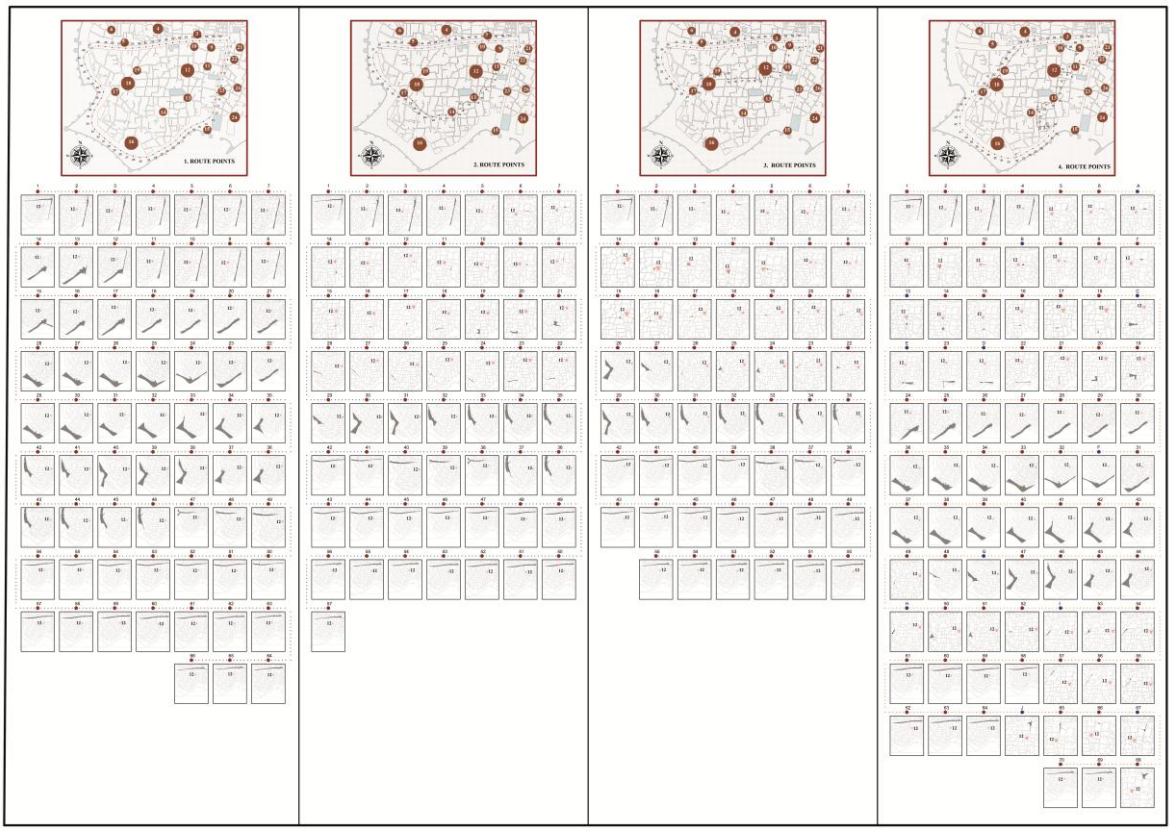

Figure 7. Isovist analyses on the travel routes created in the second area (prepared by the authors).

As in the first and second areas, a total of four sightseeing routes were planned in the third area, located to the east, to maximize the visibility of religious structures. These routes were analyzed using the Isovist method (Figure 8).

Along Route 1, religious structures numbered 23, 24, 25, 27, and 29 can be observed, while Route 2 provides views of structures numbered 26, 28, 20, 29, and 34. On Route 3, structures numbered 20, 21, 30, 31, 32, 33, 34, 35, 36, and 37 are visible. Route 4 was designed to allow for the observation of all structures in the area, including those numbered 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, and 37. Additionally, as in the previous study areas, the viewpoints from which the structures along Route 4 can be seen are marked with blue points.

In the study area, a longer and more detailed route has been proposed, allowing for the visibility of all the religious structures under consideration. This route involves visiting all the spatial segments identified in the study, enabling the religious structures to be perceived as a cohesive whole (Figure 9).

Overall, these considerations underline the scientific rationale behind route selection and the methodological application of the Isovist technique, providing a clearer understanding of how the designed itineraries facilitate both cultural and visual engagement with Diyarbakır's historic religious heritage.

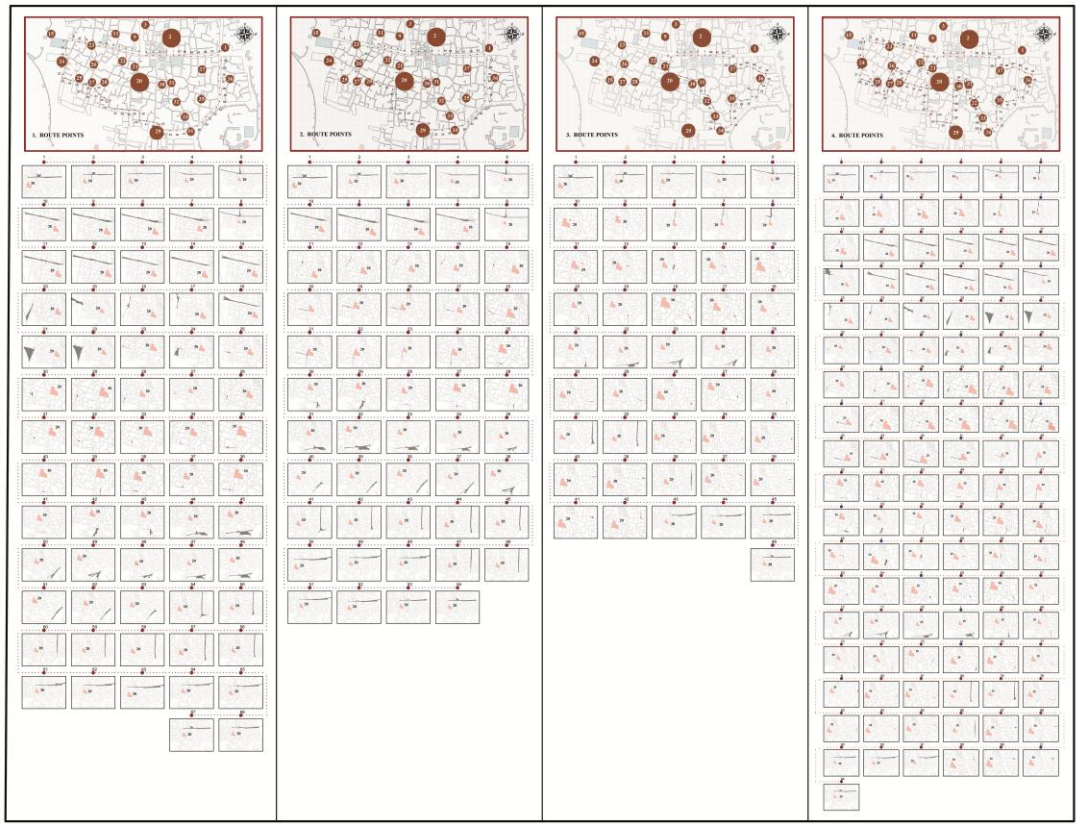

Figure 8. Isovist analyses on the travel routes created in the third area (prepared by the authors).

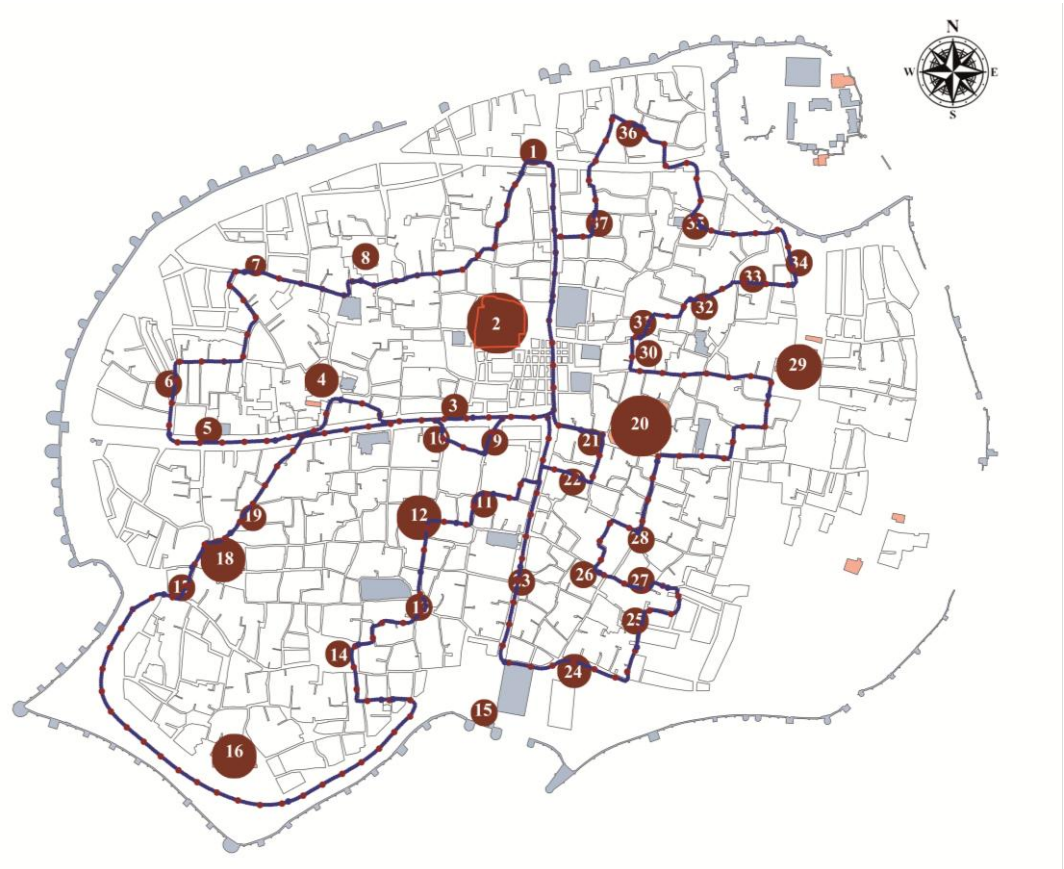

Figure 9. Cultural heritage route that allows for the visibility of all historical and cultural religious structures in the study area (prepared by the authors).

5. Discussion

In this study, which aims to determine sightseeing routes that can contribute to the conservation-tourism relationship by enhancing the visibility of historical religious structures in the Diyarbakır Suriçi region, the Isovist method was applied. Analyses conducted using this method indicate that the proposed routes provide visitors with the opportunity to gain a more comprehensive perception of the city's ancient religious heritage. Since the planning of these routes was carried out by considering the spatial distribution of religious structures, the designated paths allow visitors to experience the highest number of religious sites. These findings offer significant insights in the context of cultural heritage conservation and sustainable tourism.

The main hypothesis of this study posits that the routes determined in Suriçi using the Isovist method can enhance the visibility of historical religious structures by centering them within the proposed paths, thereby enriching the visitor experience. Considering the findings obtained, this hypothesis has been largely supported, demonstrating the potential of the designated routes to offer visitors a broader perspective. Additionally, in some planned routes, the existing urban fabric and built environment appear to be limiting factors affecting the expected visibility of these structures. All these findings indicate that, in spatial planning processes focused on conservation and tourism, the impact of existing urban development on such routes should be examined in greater detail.

The practical contributions of this research lie in facilitating a more conscious, detailed, and systematic route planning process to support cultural heritage tourism and the conservation of historical structures. Enabling visitors to better perceive the original contexts of historical buildings will, in turn, contribute to the sustainable conservation of the region's cultural heritage in a multifaceted manner. Theoretically, this study demonstrates the applicability and utility of the Isovist analysis in the determination of cultural tourism routes, highlighting its effectiveness as an objective spatial analysis tool for cultural heritage sites.

The findings of this study indicate that the tourism potential of the region and the examined area should be approached from a holistic spatial perspective rather than focusing solely on specific points. In this regard, concepts such as faith and worship play a significant role as intangible cultural values within this perspective. In this context, the study has the potential to make substantial contributions to the existing literature by demonstrating how cultural heritage can be integrated with tourism in a mutually beneficial manner. While previous research on this topic has primarily focused on the individual and physical analysis of historical structures, this study emphasizes the importance of establishing tourism routes within a spatially coherent framework, enabling a more holistic perception of these structures along designated paths.

This study includes insights that may pave the way for future research by enabling the discovery of different findings on similar topics. In this context, the possibility that, despite their physical proximity, the visibility of the examined structures may be limited due to the urban fabric, as well as the necessity of analyzing not only the presence of historical structures but also how they are perceived by visitors in tourism planning, are critical aspects that should be further explored and discussed in future studies. Additionally, this finding highlights the need to evaluate historical structures not only in terms of their location but also in relation to their surrounding environmental characteristics.

This study also presents insights that could open new avenues for obtaining different findings on similar topics in future research. In this context, the possibility that the visibility of the examined structures may be limited due to the urban fabric, despite their physical proximity, and the necessity of analyzing not only the presence of historical structures but also how these structures are perceived by visitors in tourism planning, are important aspects that should be further explored and discussed in future studies. Furthermore, this suggests that historical structures should be evaluated not only in terms of their location but also considering their environmental characteristics.

6. Conclusions and Recommendations

This study aims to determine sightseeing routes that can contribute to the relationship between cultural heritage conservation and tourism by enhancing the visibility of religious structures with architectural heritage in the Diyarbakır Suriçi historic district. Objective spatial analyses conducted

using the Isovist method revealed that the proposed routes offer visitors the opportunity to perceive the city's ancient belief culture more deeply, creating significant effectiveness in terms of recognizing cultural heritage. The study emphasizes the importance of creating routes that allow for a better perception of historical religious structures along the designated paths, enabling visitors to view all the historical buildings in the area.

Looking at the limitations of the study, it can be stated that the research was conducted through spatial analyses carried out in a specific area, covering only the parts of the Suriçi district with a high architectural heritage density. In this regard, the results provide a perspective for studies on cultural heritage tourism and the preservation of this heritage in similar areas. Furthermore, the study primarily presents an analysis based on visual visibility. In this context, it can be considered an important preliminary study for more in-depth qualitative research on how visitors perceive and experience cultural structures.

Future research can relate the data and findings of this study to a broader area and different historical contexts, allowing for comparison with similar spatial analyses. Additionally, supporting analyses like those in this study with in-depth multidisciplinary research on visitor perceptions, experiences, and the broader cultural context could help better communicate the necessities and potential benefits of cultural heritage tourism. In this sense, the study may also create an important area for future research that examines the impact of social, economic, and cultural factors on tourism routes. Furthermore, comprehensive studies conducted using other methods and technologies in this field will contribute to the development of new perspectives to ensure the balance between cultural heritage preservation and the sustainability of tourism.

Ultimately, the findings of the study highlight the need for a mutually beneficial relationship between cultural heritage tourism and the preservation of historical structures, emphasizing that these processes should support one another. The use of the Isovist method in this type of analysis stands out as an effective tool for examining the spatial distribution, visibility, and visitor experiences of historical buildings. In this context, the proposed routes in the study contribute to both tourism and conservation by offering a holistic perspective and supporting the preservation and promotion of the region's historical fabric.

Declaration of Authors' Contribution

Murat Şahin: Theory Formulation, Methodology, Validation, Formal Analysis, Research, Data Analysis and Visualization; **Tuba Nur OLĞUN**: Theory Formulation, Methodology, Validation, Formal Analysis, Research, Data Analysis, Drafting, Review and Editing.

Conflict of Interest Statement

The authors declare that they have no conflict of interest.

Research and Publication Ethics Statement

The authors of this article declare that they adhere to research and publication ethics in their work.

Ethics Committee Approval Statement

The authors declare that Ethics Committee Approval is not required for this study.

Data Availability Statement

The authors declare that their permission must be obtained for the use of the data presented in this study.

Artificial Intelligence Use Statement

The authors declare that they did not use any generative artificial intelligence in the writing of this

article, or in the creation of the images, graphs, tables, or their corresponding headings.

References

Atak, O. (2009). *Traditional Kayseri houses in context of space syntax and visibility graph analy*sis. (Master's thesis), Istanbul Technical University, Institute of Natural and Applied Science, İstanbul, Türkiye.

Batty, M. (2001). Exploring Isovist fields: Space and shape in architectural and urban morphology. Environment and Planning B: Planning and Design, 28, 123-150. https://doi.org/10.1068/b2725

Benedikt, M. L. (1979). To take hold of space: Isovists and isovist fields. Environment and Planning B: Urban Analytics and City Science, 6(1), 47–65. https://doi.org/10.1068/b060047

Can, I. (2014). *On teaching space syntax method and theory*. VIII. National Symposium on Design in Architecture, Izmir, Türkiye.

Çakmak Yılmaz, B. (2011). *The space syntax analysis of dwellings in city walls originated by migration from rural to urban, case of Konya*. (PhD), Selçuk University, Institute of Natural and Applied Science, Konya, Türkiye.

Çatalbaş, F. (2012). The urban transformation project of the Suriçi region and its contribution to Diyarbakır tourism. Journal of Faculty of Theology of Bozok University, 1(1), 47–65.

ÇEKÜL Foundation. (2015). *Cultural routes planning guide*. ÇEKÜL Foundation-Historical Cities Union Publications.

Çil, E. (2006). Theoretical and methodological discussion of the space syntax analyses as a tool for reading the city. Megaron, 1(4), 218–233.

Çelik, S., & Kadırhan, G. (2024). Journey into the unknown: Şırnak culture, faith and trekking routes. GSI Journals Serie A: Advancements in Tourism Recreation and Sports Sciences, 7(1), 123–https://doi.org/138. 10.53353/atrss.1339499

Czerkauer-Yamu, C. (2010). *Space syntax understanding, Hillier's concept of a spatial configuration and space syntax analysis.* Université de Franche-Comté, University College London.

Durusoy, E. (2013). *From an ancient road to a cultural route: Conservation and management of the road between Milas and Labraunda*. (Master's thesis), Middle East Technical University, Institute of Natural and Applied Science, Ankara, Türkiye.

Fırat, M. Y., & Erbaş, A. E. (2023). Cistern-themed cultural route; The case of Istanbul Historical Peninsula. Journal of Awareness, 8(1), 89–103. https://doi.org/10.26809/joa.1906

Göyünç, N. (1994). *Diyarbakır*. Türkiye Religious Foundation Islamic Encyclopedia, 9, 465.

Gündoğdu, M. (2014). Space syntax and researching issues. Art-Sanat, (2), 250–274.

Halaç, H. H., & Benzer, M. (2019). Mapping out the cultural heritages by a route in the opening of small settlement areas to tourism. Journal of Geomatics, 4(1), 23–29. https://doi.org/10.29128/geomatik.438618

Hanson, J. (1994). Deconstructing architects' houses. Environment and Planning B: Planning and Design, 21, 675–704. https://doi.org/10.1068/b210675

Haspolat, Y. K. (2025). *Diyarbakır churches*. Accessed date: 22.01.2025. https://www.researchgate.net/profile/YusufHaspolat/publication/351437102_Diyarbakir_Kiliseleri/links/60a3e4b3299bf156952793fb/Diyarbakir-Kiliseleri.pdf

Hillier, B., & Hanson, J. (1984). *The social logic of space*. Cambridge University Press.

Huang, Y., Fan, Z., Wang, C., Yan, R., & Shi, Y. (2025). Evaluating visual experience in heritage-rich areas: A case study of the Inner Ring Road of West Lake, Hangzhou. Frontiers of Architectural Research, Advance online publication. https://doi.org/10.1016/j.foar.2025.06.011

Işık, N. (2023). *Diyarbakır walled city architecture in multi-layered cultural heritage*. Academician Publishing House Bookstore.

Işık, N., & Halifeoğlu, F. M. (2017). Observational affecting structural system and causes damage to the historic church in Diyarbakır. Dicle University Faculty of Engineering Engineering Journal, 8(2), 293–306.

İlhan, M. M. (1994). Population and foundations of Diyarbakır city in the first half of the 16th century: Notes from the land registry books dated 1518 and 1540. Journal of Historical Research, 16(27), 45–113. https://doi.org/10.1501/Tarar_0000000055

Karaca, N. (2006). Diyarbakır urban development in Ottoman period. Dicle University Social Sciences Institute Journal, 6(12), 47–67.

Kejanlı, T., & Dinçer, İ. (2011). Conservation and planning problems in Diyarbakır castle city. Megaron, 6(2), 95–108.

Kim, I., Kim, A., & Kim, Y. (2019). A new 3D space syntax metric based on 3D isovist capture in urban space using remote sensing technology. Computers, Environment and Urban Systems, 74, 74–87. https://doi.org/10.1016/j.compenvurbsys.2018.11.009

Krauss Leite, H. de L., Binotto, E., Padilha, A. C. M., & Hoeckel, P. H. de O. (2023). Cooperation in rural tourism routes: Evidence and insights. Journal of Hospitality and Tourism Management, 57, 84–96. https://doi.org/10.1016/j.jhtm.2023.09.005

Llobera, M. (1996). Exploring the topography of mind: GIS, social space and archaeology. Antiquity, 70, 612–622. https://doi.org/10.1017/S0003598X00083745

Madran, E., & Özgönül, N. (2005). *Conservation of cultural and natural values*. TMMOB Chamber of Architects.

Mehanna, W. A. E. H., & Mehanna, W. A. E. H. (2025). A comprehensive framework for assessing the impact of heritage areas renewal projects on visibility and pedestrian movement. Journal of Engineering Research, 9(1), Article 25. https://doi.org/10.70259/engJER.2025.911917

Melek, A., & Demir, A. (2009). *Diyarbakır with its religious values*. Diyarbakır Provincial Mufti Publications.

Pellegrini, M., Padilha, A. C. M., Binotto, E., Casarotto, E. L., Jorge, J. P. C. S., Hoff, D. N., & de Souza, M. (2023). Environmentally sustainable: How are the practices in the organic food tourist route? Heliyon, 9(7), e17546. https://doi.org/10.1016/j.heliyon.2023.e17546

Türker, N. (2013). Evaluation of Western Black Sea region's ecotourism resources and an ecotourism route proposal. International Journal of Social Science, 6(4), 1093–1128. http://dx.doi.org/10.9761/JASSS886

Vatan, A., & Demir, Ö. (2021). Bird palaces in İstanbul: Last chance. Journal of Turkish Tourism Research, 3(3), 421–435. https://doi.org/10.26677/TR1010.2019.170

Weitkamp, G., Van Lammeren, R., & Bregt, A. (2014). Validation of isovist variables as predictors of perceived landscape openness. Landscape and Urban Planning, 125, 140–145. https://doi.org/10.1016/j.landurbplan.2014.02.021

Wheatley, D. (1995). *Cumulative viewshed analysis: A GIS-based method of investigating intervisibility and its archaeological application*. In G. Lock & Z. Stancic (Eds.), Archaeology and GIS: A European Perspective (pp. 123–140). Taylor & Francis.

Yıldırım, M. T. (2002). The use of graph theory to obtain data within the context of building function and building form. Gazi University Faculty of Engineering and Architecture Journal, 17(3), 57–74.

Zandniapour, K., Soroush, A., Agdam, E. K., & Sanaieian, H. (2025). Integrating GIS, 3D-Isovist, and an NSGA-II multi-objective optimization algorithm for automation of design process in urban parks and public open spaces. International Journal of Geoheritage and Parks, 13(1), 1–16. https://doi.org/10.1016/j.ijgeop.2024.08.002