





A Case Study of Capital Structures in Ankara: A Cognitive Mapping Analysis*

Mekânsal Algı Düzeyi Üzerine Bir Değerlendirme: Başkent Yapıları Bilişsel Haritalama Analizi Örneği

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Öz

Başkent yapılarının sürdürülebilirliği, bireylerin bu alanları algılama ve anlamlandırma biçimini derinden etkiler. Çevresel psikolojik ve mimarlık literatürü, iyi tasarlanmış ve sürdürülebilir mekânların bireylerde olumlu algılar yaratarak mekânla olan bağlarını güçlendirdiğini vurgular. Yi-Fu Tuan'ın "topophilia" kavramı, insanların belirli yerlerle duygusal bağ kurarak o mekâna anlam yüklediğini ifade ederken, Lynch'in şehirlerin okunabilirliği kavramı, mekânların tanınabilir ve hatırlanabilir olmasının önemine işaret eder. Bu bağlamda, başkentlerdeki önemli yapıların sürdürülebilirliği, bireylerin mekân algısını olumlu yönde etkileyerek bu yapıların fiziksel ve sembolik değerlerini artırır. Bu çalışma; Ankara örneğinde, Kızılay ve Ulus merkezlerindeki başkent yapılarının bireylerin zihinsel haritalarındaki yerini incelemektedir. Derinlemesine görüşmeler ve bilişsel harita analizleri, bu yapıların bireyler için önemli bir referans noktası olduğunu ve mekânsal aidiyet duygusunu güçlendirdiğini ortaya koymuştur. Çalışmanın bulguları, başkent yapılarının fiziksel ve sembolik özellikleriyle bireylerin yön bulma ve mekânı anlamlandırma süreçlerinde kritik rol oynadığını göstermektedir. Özellikle Ulus-Kızılay aksında, Atatürk Bulvarı üzerinde, bireylerin bu yapılarla kurduğu güçlü bağ, mekân hafızasını ve toplumsal refahı destekleyen bir unsur olarak öne çıkmaktadır. Bu çalışma ile özgün yapıların korunması ve çevresiyle olan ilişkilerinin güçlendirilmesinin, kent sakinlerinin mekân algılarının güçlenmesinde önemli bir role sahip olduğunu ortaya koymuştur.

Anahtar Kelimeler: Ankara, Bilişsel Harita, Mekân Aidiyeti, Mekân Algısı, Sürdürülebilir Yapılar.

ABSTRACT

The sustainability of capital city landmarks deeply influences how individuals perceive and make sense of these spaces. Environmental psychology and architectural literature emphasize that well-designed and sustainable environments foster positive perceptions, strengthening individuals' connections to these spaces. Yi-Fu Tuan's concept of topophilia highlights the emotional bonds people develop with specific places, attributing meaning to them, while Lynch's notion of the legibility of cities underscores the importance of spaces being recognizable and memorable. In this context, the sustainability of significant landmarks in capital cities positively impacts spatial perception, enhancing their physical and symbolic values. This study examines the role of landmarks in Ankara, particularly in the Kızılay and Ulus districts, within individuals' cognitive maps. In-depth interviews and cognitive map analyses reveal that these landmarks serve as critical reference points, strengthening spatial belonging. Findings indicate that the physical and symbolic characteristics of capital city landmarks play a pivotal role in individuals' wayfinding and place-making processes. Notably, the strong bond individuals form with landmarks along the Atatürk Boulevard axis, connecting Ulus and Kızılay, emerges as a key factor supporting spatial memory and social well-being. The study concludes that preserving distinctive structures and reinforcing their relationship with the surrounding environment are essential for enhancing urban residents' spatial perceptions. This underscores the significance of such landmarks not only as navigational aids but also as elements that contribute to collective memory and community welfare.

Keywords: Cognitive map, Sustainable structures/buildings, Place attachment, Spatial perception, Ankara

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INTRODUCTION:

Capital cities often contain symbolic structures representing national identity. These structures, which are generally of a public nature, serve as prominent focal points in individuals' cognitive maps. Cognitive map analysis is a significant research method that examines how individuals perceive space and how these perceptions influence their behaviors (Türk, 2017). In this context, capital city structures, as well as the administrative and symbolic centers where these structures are concentrated, typically hold a distinct place in individuals' mental maps. Place attachment is commonly defined as the process through which individuals develop an emotional bond with a particular environment (Relph, 1976). Residing in a place for five to ten years or longer allows individuals to internalize its physical, social, and cultural characteristics. Long-term habitation plays a critical role in fostering social relationships, identifying with the space, and defining one's identity in relation to the environment (Tuan, 1977). **This study analyzes the role of capital city structures in individuals' spatial perception, their symbolic meanings, and their place in collective memory through the method of cognitive mapping. In this context, the first section presents a theoretical framework on the concept of the capital city and the formation of spatial perception. The second section outlines the methodology and details of the fieldwork. The third section interprets the findings derived from in- depth interviews and cognitive map analyses, while the final section offers a general evaluation along with recommendations regarding the sustainability of capital city structures.**

Furthermore, Lynch's (1960) concept of cognitive mapping provides a valuable tool for understanding how individuals perceive and organize spatial information. Prolonged residence enhances detailed spatial cognition, making the environment more meaningful for individuals. Over time, symbolic and functional meanings emerge based on personal experiences within the space (Proshansky et al., 1983). Cognitive maps serve as mental representations that illustrate how individuals perceive, remember, and organize their surroundings (Downs & Stea, 1973). These maps help explain how individuals navigate space, prioritize spatial decisions, interpret environments, and retain spatial memories. Lynch (1960) identified five fundamental elements of cognitive maps: paths, edges, districts, nodes, and landmarks. The sustainability of capital city landmarks and the shifting dynamics of urban governance are closely intertwined, shaping both spatial perception and local administrative efficiency. While well-designed and sustainable landmarks foster a sense of place and collective memory, the increasing fragmentation of urban governance—driven by localization policies and infrastructure investments that disregard scale economies—can weaken the coherence of urban spaces. As local governments expand their service areas without adhering to efficiency principles, the spatial and symbolic significance of key landmarks may be undermined by haphazard urban interventions (Fidan, 2012). Therefore, maintaining a balance between sustainable urban design and rational local governance is essential to preserving both the functional and symbolic roles of capital city landmarks, ensuring they continue to serve as navigational aids, reference points, and anchors of social well-being.

This study emerges from the premise that the capital city, as the nation's administrative and symbolic center, holds significant spatial importance and serves as historical evidence of national identity. The spatial configuration of capital cities and their distinctive structures establish prominent focal points within individuals' cognitive maps. Cognitive map analysis is a crucial research method that examines how individuals perceive space and how these perceptions influence their spatial behaviors. This analysis seeks to understand how people recall and organize spatial elements such as roads, buildings, monuments, and other urban features. In this context, capital city structures—namely, the administrative and symbolic centers of cities—hold a prominent place in individuals' mental maps (Südaş & Öz, 2018; Solak, 2017). These structures, in relation to other spatial elements within the city, influence individuals' navigation, wayfinding, daily activity planning, and social interactions. For instance, a significant governmental building or a historical monument in a capital city helps individuals

define spatial relationships with other areas and contributes to their spatial cognition. These structures hold a strong presence in individuals' cognitive maps not only due to their physical existence but also because of their symbolic meanings and historical contexts. Consequently, capital city structures serve as critical reference points that shape individuals' mobility, spatial perceptions, and decision-making processes within the urban environment (Kürkçüoğlu & Ocakçı, 2015).

The focal points in capital cities influence individuals' wayfinding behaviors and occupy prominent positions in their cognitive maps through spatial relationships with other urban structures. Various methods are employed to understand, interpret, and analyze the cognitive strength of spatial memory. Visual mapping techniques involve asking individuals to recall and draw specific areas, revealing which structures are most salient in their cognitive memory and how these structures relate to others. In-depth interviews are conducted to gather insights into individuals' perceptions of particular structures and their evaluation of these structures' significance within the city. The capital city structures examined in this study serve as strong focal points in cognitive maps due to both their physical appearance and symbolic meanings. These analyses provide valuable information for urban planning and design, helping individuals navigate and utilize space more effectively and efficiently (Akbarishahab, 2022). Based on the conceptual framework outlined above, this study examines how cognitive map analyses can be applied to capital city structures and how these analyses reveal spatial focal points. The objective is to determine the impact of capital city structures on spatial perception and the strength of the cognitive impressions they create in individuals. Since spatial perception is directly related to individual experiences, long-term residents of the city were included in the research. To enhance spatial comprehension, cognitive map analyses were conducted with individuals who have lived in the same location for at least 5 to 10 years and who also work in structures classified as capital city landmarks, thereby possessing a relatively high sense of spatial identity. The analyses conducted in this study are specific to the city of Ankara and highlight the social and psychological dimensions of spatial perception. Identifying the fundamental components that shape perceptions of the capital and preserving this perception is crucial for the development of sustainable urban spaces.

In this study, the concept of sustainability in relation to spaces emphasizes that capital city structures should not only be evaluated based on their physical attributes but also within a framework that encompasses their environmental, economic, and social dimensions. This perspective highlights the emotional and social connections individuals establish with these structures. Yi-Fu Tuan's concept of *topophilia* underscores the significance of emotional attachment to specific places, arguing that such attachments should be considered in the design of sustainable spaces. The design of a sustainable capital city structure begins with the efficient use of environmental resources. However, sustainability is not merely about employing eco-friendly materials; it is also contingent upon how these structures serve society on a social level. The ways in which individuals perceive and interpret spaces contribute to the broader understanding of sustainability in the built environment. In this context, sustainability is not solely assessed through the physical characteristics of structures but also through their role in fostering social connections and shaping individual experiences.

1. The Concept of Capital City and the Process of Spatial Perception Formation

Capital cities are defined as the political, administrative, and diplomatic centers of a country. However, in literature, the concept of the capital is not confined solely to its administrative function; rather, it is also considered a space where national identity, collective memory, and cultural belonging are shaped. In addition to serving as symbolic spaces that reflect a country's representative power, capital cities bear the traces of historical events, political decisions, and social transformations. Spatial theorists such as Boyer (1994) and Lefebvre (1991) conceptualize capitals as sites where collective memory is constructed and public memory is anchored in spatial contexts. Within this framework, the notion of

the capital city is examined at the intersection of spatial practices and ideological representations, emphasizing its psychological and sociological impacts on individuals. Furthermore, the concept of the capital city is explored through the lenses of international relations and geopolitics. Agnew et al. (2010) argue that capitals serve as centers of political and economic power within the international system, while also functioning as "symbolic spaces" that embody national identity. These diverse perspectives in the literature highlight that capital cities are both tangible and intangible constructs, carrying multilayered meanings within their spatial context.

The spatial manifestation of the concept of a capital city can be examined through its physical environment, the symbolic structures within this environment, and the societal roles these structures assume. The physical environment and symbolic landmarks are crucial elements in shaping individuals' perceptions of the capital. According to Lefebvre's theory of the production of space, capitals emerge as spaces where both tangible structures and the abstract values they represent converge. Within this framework, symbolic structures in capital cities are not merely physical entities but also ideological and cultural symbols. In the case of Ankara, the Kızılay-Ulus axis stands out as a significant area where the identity of the capital is materialized. The spatial configuration of the capital in this manner reinforces individuals' sense of belonging and strengthens national identity. As Ankara's spatial development has been shaped by its capital status, cognitive mapping serves as a critical tool for comprehensively understanding this process. The study *Ankara'nın Kentsel Gelişimine Haritalarla Bakış (A Cartographic Perspective on Ankara's Urban Development)*, published by the General Directorate of Mapping, provides a detailed account of the city's spatial transformations across different periods and highlights the relationship between these transformations and the city's capital structures (Figure 1).

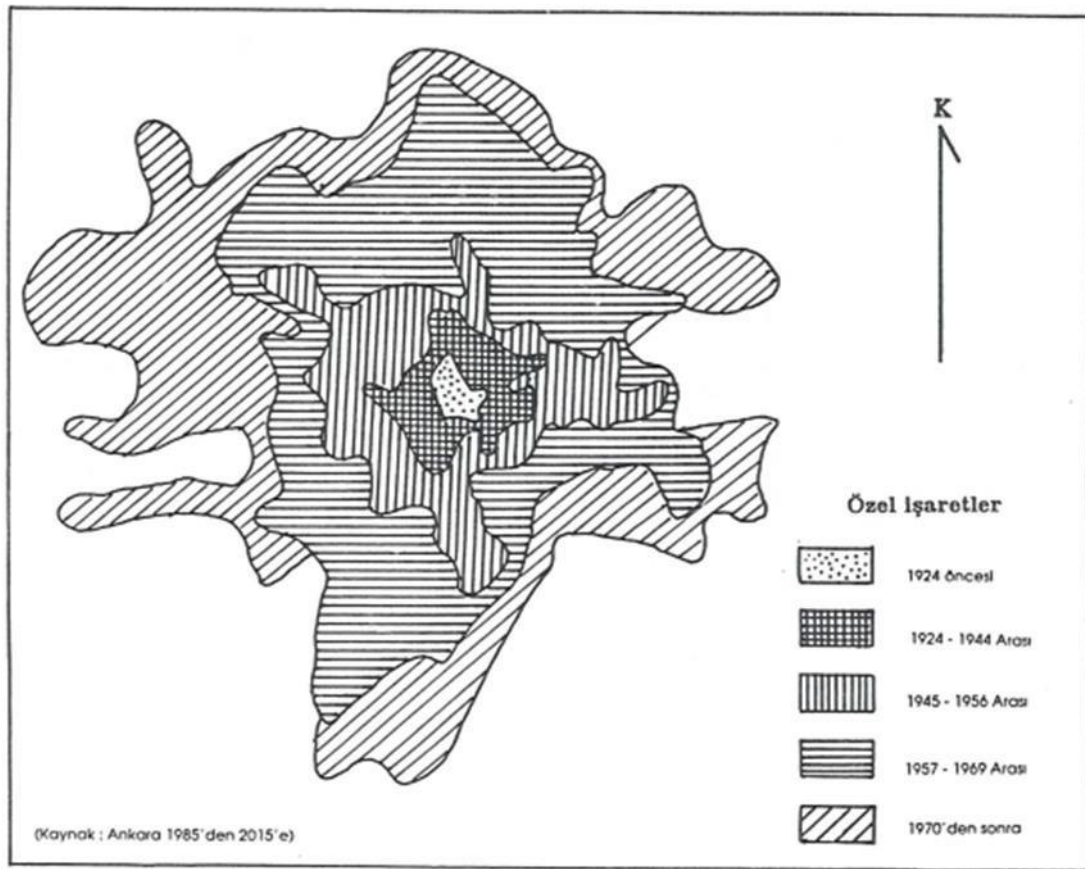


Figure 1. The Development Process of Ankara (Akdeniz, 2020)

The cognitive mapping method employed in this study reveals that the locations identified by participants align with structures and spaces that play a significant role in the construction of capital city identity. Major arteries such as Atatürk Boulevard, along with the symbolic structures situated along these routes, emerge as key elements representing the capital's identity in both social and spatial contexts. The Kızılay-Ulus main axis, illustrated in Figure 2, was taken as the primary reference in this study. Additionally, the *Hükümet Kartiyesi* area, which was designated in Jansen's plan as a specialized zone for the initial capital structures, was selected as a focal study area. The current state of the study area and the locations of symbolic structures have been documented accordingly.

In the literature, the majority of spatial studies remain confined to the analysis of the physical environment, while relatively limited attention has been paid to how individuals perceive space and how these perceptions influence spatial behavior. However, research in environmental psychology, urban design, and human-environment interaction has shown that spatial perception encompasses not only physical dimensions but also social, cultural, and emotional layers (Proshansky et al., 1983; Tuan, 1977; Relph, 1976). In this context, individuals' relationships with specific urban structures, their wayfinding strategies, sense of attachment, and contributions to collective memory are shaped not merely by physical forms, but by the meanings attributed to those forms (Lynch, 1960; Rapoport, 1982). Therefore, by focusing on how capital city structures are situated within individuals' cognitive maps and how these mental representations influence spatial perception and behavior, this article offers a significant conceptual and methodological contribution to the existing literature.

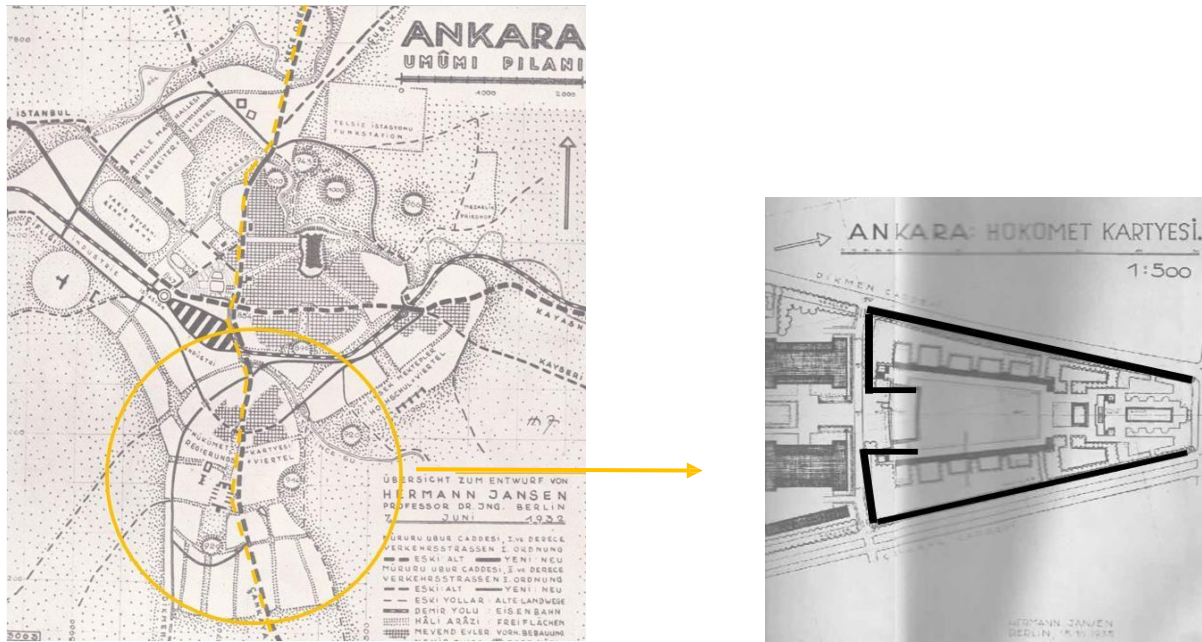


Figure 2. The View of the Selected Area in the Jansen Plan

Figure 3 provides a representative depiction of the spatial distribution and trends of capital city functions in Ankara. The map highlights the area encompassing the traditional center, Ulus, and the newly established Kızılay, identifying them as historical capital centers. The locations of capital city structures are illustrated along the primary axis that has shaped Ankara since its designation as the capital. The study area has been defined as the main axis extending from the *Hükümet Kartiyesi* to Ulus, encompassing structures that are emblematic of the capital. The findings indicate that the built environment along this axis has largely retained its original positioning, reinforcing Ankara's capital identity since the 1920s. In these representations, areas with a high concentration of capital city structures have been symbolized. From this weighted distribution, Kızılay Square (12-13-14) emerges

as a prominent focal point on the map, representing the modern capital identity. Historical landmarks such as Ankara Railway Station, Ulus Square, and the First and Second Turkish Grand National Assembly Buildings (5-6-7-8), as well as the current Turkish Grand National Assembly Building (17), are marked as symbols reflecting the legacy of the early Republican period. Additionally, government institutions concentrated in the Bakanlıklar district—such as the Ministry of Justice, the Ministry of Foreign Affairs, and the Ministry of Treasury and Finance (17-18-19)—are emphasized as administrative centers. Cultural landmarks, including the Ethnography Museum and the Republic Museum (9-10-11), are distinguished, while recreational areas like Gençlik Parkı are identified as integral to the city's social fabric since the Republican era. Similarly, Saraçoğlu Neighborhood (15-16), as one of the earliest residential developments, contributes to this urban identity. Certain studies propose the classification of structures along this axis based on their functions, utilizing thematic maps to visualize their roles in Ankara's social, political, and cultural evolution. This representation, in particular, serves as a unique cognitive mapping exercise that captures the spatial distribution of capital city structures. Such maps offer valuable insights into how Ankara has been shaped as a capital city and provide a compelling tool for tracing the development of spatial planning over time.

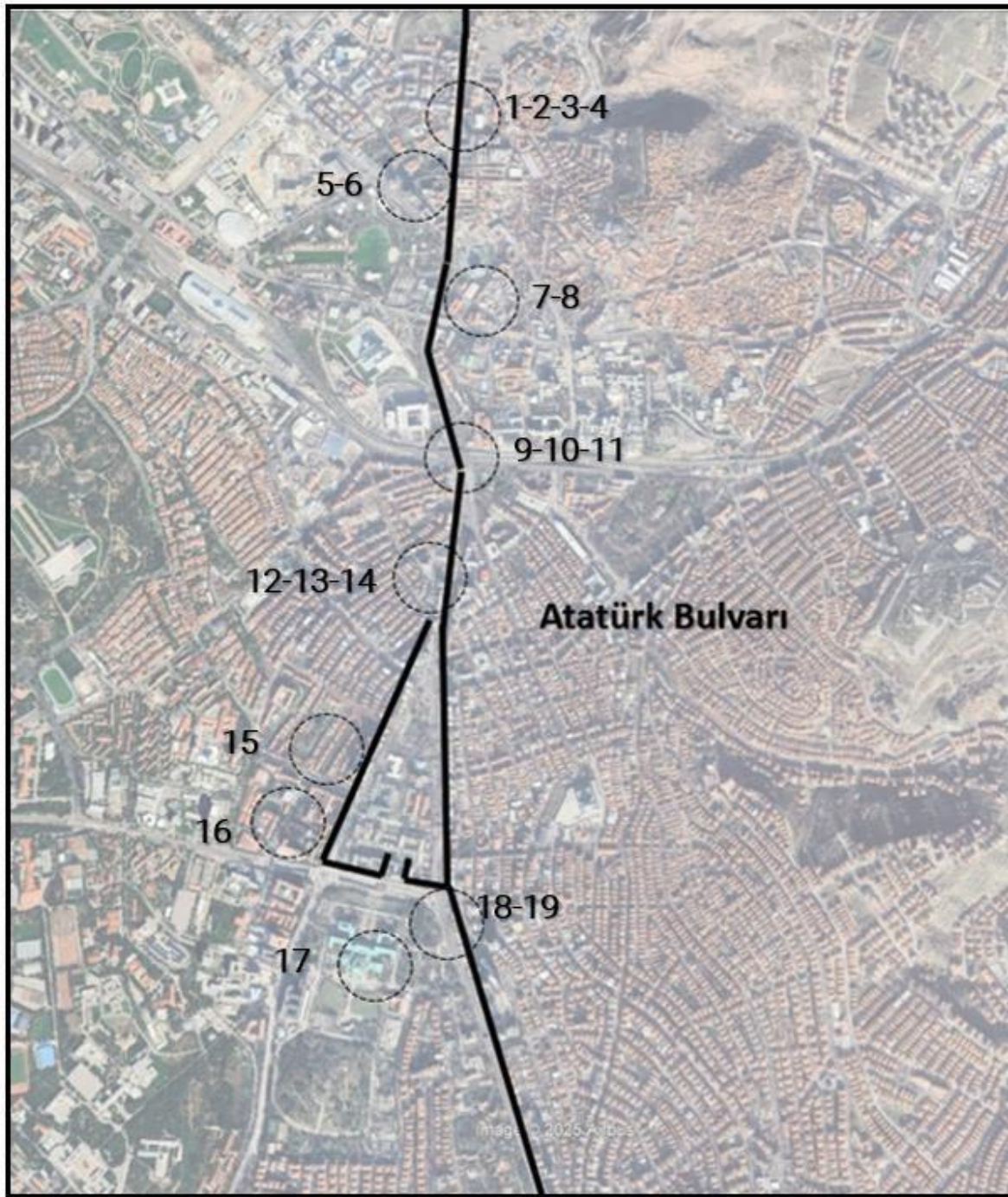


Figure 3. The Study Area and the Locations of Symbolic Structures

1.1 Methodology of the Study

This study employs in-depth interviews and cognitive mapping methods to examine how capital city structures are embedded in individuals' minds and collective memory. The research involved interviews with 63 professionals and executives working in various public institutions, including the Ministry of Environment, Urbanization, and Climate Change; the Ministry of the Interior; the General Staff of the Republic of Turkey; and the Ministry of Culture and Tourism, as well as embassies and the headquarters of major banks. During these interviews, participants were asked about their perceptions of institutional identity, their conceptualization of the capital city, the significance they attribute to capital city structures, the relationship between these structures and urban space, and their views on the ownership status of these buildings. Additionally, cognitive mapping exercises were conducted with 23 of these participants, focusing on the Atatürk Boulevard corridor within the Kızılay-Ulus axis.

In this exercise, participants identified significant places that remained in their memory and discussed the associations they formed between these locations and the concept of the capital city.

In this study, in-depth interviews were conducted between March and April 2024, with each session lasting approximately 45 to 60 minutes. The interviews were carried out in-person at the workplaces of the participants or, in some cases, via online platforms due to scheduling constraints. The selection of expert participants was carried out through purposive sampling, targeting professionals and executives employed in central public institutions. These institutions—including the Ministry of Environment, Urbanization, and Climate Change; the Ministry of the Interior; the General Staff of the Republic of Turkey; and the Ministry of Culture and Tourism—were identified due to their pivotal role in shaping Ankara’s administrative and symbolic urban fabric. By including individuals with direct professional engagement in these organizations, the study ensured that participants were both familiar with the spatial configuration of capital city structures and actively involved in their everyday functions. To strengthen the validity of perspectives, the selection criterion required participants to have at least 5 to 10 years of work experience within the same institution, thereby reflecting a well-established sense of spatial identity and institutional belonging. The interviewees’ professional expertise spanned urban planning, architecture, public administration, defense, finance, and diplomacy, which provided a multidimensional interpretive lens for analyzing capital city structures. The comparison criteria presented in *Table 1: Comparison of In-Depth Interview and Cognitive Mapping Results* were developed through thematic coding of interview responses, complemented by a literature review on spatial perception and urban symbolism (Lynch, 1960; Tuan, 1977; Proshansky et al., 1983). Four recurring categories emerged—definition of capital city structures, key spatial characteristics, ownership and usage requirements, and place in collective memory. These categories were deliberately chosen to provide a coherent analytical framework that integrates spatial cognition, memory, and governance. Their inclusion facilitated a comprehensive and comparative interpretation of both qualitative insights and spatial data.

This study investigates how capital city structures are embedded within both individual cognition and collective memory. To this end, in-depth interviews were conducted with professionals and executives employed in central public institutions in Ankara. The rationale for this selection rests on the participants’ capacity to interpret and experience the notion of the capital through their institutional identities as well as their everyday spatial practices. Many of the participants either work in buildings that constitute the institutional core of the capital or engage with these spaces on a regular basis. Consequently, they remain in direct contact with the physical embodiments of capital city functions, which enables them to develop a more nuanced and institutionally rooted spatial perception of these structures. This methodological approach is consistent with the objectives of the study, as it allows for the collection of richer and more meaningful insights into the symbolic significance of capital city buildings, their spatial relations within the urban fabric, and their role in collective memory.

The in-depth interviews were structured around four main themes:

1. **Institutional Identity:** This section explored participants' perceptions of the institutions they work for and the connections they establish with them. Institutional identity is shaped by individuals' professional backgrounds, and the study aimed to assess how such identities reinforce spatial belonging. Particular attention was given to employees with long tenures in the same institution, examining the bonds they formed with their workplace and its surrounding environment.
2. **The Concept of the Capital City:** Participants were asked how they define the concept of a "capital city," with the goal of assessing not only its administrative function but also its influence on collective memory and identity.
3. **Capital City Structures:** Participants were asked to categorize the significance of capital city structures into primary, secondary, and tertiary levels. This ranking provides insights into individuals' spatial perceptions and priorities regarding urban spaces.
4. **Ownership Structure:** This section explored the ownership status of capital city structures and its relationship with their public accessibility, examining the extent to which ownership influences their function as public spaces.

Through cognitive mapping exercises, the study sought to reveal the places that are most prominent in participants' memories and the meanings attributed to these locations. Participants identified key structures along the Kızılay-Ulus axis on maps and discussed how these buildings contribute to the formation of the capital city's identity.

1.2 Field Study, Analysis and Findings of the Cognitive Mapping Study

In-Depth Interview Study

Within the scope of this study, in-depth interviews and cognitive analysis methods were employed to assess individuals' perceptions, their level of spatial awareness, the identification of key elements within the urban environment, and the ways in which space is defined. As detailed in the methodology section, the results of in-depth interviews conducted with 63 participants were analyzed under four main themes. This section presents the analyses conducted within these thematic categories and the key findings derived from them.

Institutional Identity

Participants were asked about the minimum period required for the formation of institutional belonging and identity within an organization. A significant majority (77.8%) stated that a period of at least 5–10 years was necessary. For a detailed assessment of capital city structures and their spatial significance, it is essential that individuals have spent a considerable period within the same institution and location. The findings from in-depth interviews indicate that 93.7% of respondents had worked in the same institution for at least 5–10 years.

These findings emphasize the necessity of long-term presence in an institution and its associated environment for the development of spatial identity and belonging. The role of time in the formation of spatial identity and belonging has been widely discussed in the literature. Spatial identity is closely linked to the continuity and depth of individuals' interactions with their physical surroundings. Kevin Lynch (1960), in *The Image of the City*, highlights that individuals sustained and meaningful interactions with their environment are critical in shaping their spatial perceptions and identity. Similarly, Edward Relph (1976) and Yi-Fu Tuan (1977) assert that the temporal dimension is a crucial factor in the development of spatial identity and belonging.

The Concept of the Capital City

To define the concept of a capital city, key descriptors were identified, including *political center*,

historical heritage, transportation infrastructure, urban development, and architectural history. A substantial majority of participants (90.5%) associated the concept of a capital city with its role as a political center. The prominence of this definition suggests that individuals hold a strong perception of the capital primarily as a center of governance.

The relatively young age of the capital appears to influence how its historical significance is perceived, as only 28.6% of participants associated the capital city with the historical heritage of the country. Meanwhile, transportation infrastructure—an essential component of urban spatial organization—was linked to the capital city status by 71.4% of respondents. Similarly, 65.1% of participants found a strong correlation between the spatial development of the city and its capital city status. The relationship between the historical architecture of the city and its role as a capital was perceived as meaningful by 52.4% of respondents.

Capital City Structures

Participants were also asked to categorize the structures of the capital city, and in parallel with the political center association, administrative buildings emerged as the most significant category, with a response rate of 95.2%. This was followed by embassies at 74.2% and the central bank at 59.7%. This ranking is considered a coherent representation of the significance of these structures in the perception of space within a capital city. The prominent characteristics of capital-specific structures include their role as leading entities within the country, as indicated by 67.2% of respondents; their role as administrative centers, supported by 82.3%; and their role as symbolic centers, highlighted by 78.4%. When requested to rank the priorities of capital city structures and categorize them into primary, secondary, and tertiary structures, administrative buildings were identified as primary capital structures (86.7%), followed by the headquarters of banks as secondary structures (76.6%), and embassies as tertiary structures (68.3%) (Figure 2). These results reveal a parallel between the definition of the concept of a capital city and the prioritization of its structures. In other words, the characteristic of being a political center aligns with the expected presence of administrative buildings in this center. The headquarters of banks and embassies also emerge as significant structures that support the political center identity.

Property Ownership

Based on the areas where capital city structures are located, the primary areas identified include Kızılay (81%), Ulus (69.8%), and Atatürk Boulevard (27%). The necessity for public ownership of these capital city structures, along with the density of public spaces in these regions, was expressed by an overwhelming 96.8% of respondents. In terms of public ownership, spaces such as the Parliament Campus (83.3%), the General Staff Headquarters (89.2%), Güvenpark (93.4%), and Ziraat Bank (67.7%) were among the structures most frequently confirmed as publicly owned. These findings indicate that structures embedded in the collective memory have a significant impact on individual and social identity, and the necessity for these structures to be publicly owned is valued by the interviewed individuals.

Cognitive Map Analysis

In addition to all of this, a cognitive mapping study was conducted with 23 separate participants. The aim of this study was to investigate which structures and/or areas the participants identified within the specified space, which elements they emphasized, and how the structures or areas retained in memory relate to the concept of the capital city. For this purpose, participants were asked to mark symbolic structures on a semi-structured map (Figure 5). This research employed qualitative methods, specifically in-depth interviews and cognitive mapping, to examine the mental perceptions of capital city structures and their place in collective memory. In-depth interviews served as a crucial data collection tool to understand participants' institutional identities, their perceptions of the capital city concept, and their relationships with capital city structures. This method allowed for a more detailed exploration of participants' experiences, thoughts, and emotions, enabling us to understand the

meanings they ascribed to capital city structures and the impact of these structures on social identity. The cognitive mapping method was utilized to materialize individuals' spatial perceptions and visualize their mental maps. This approach enabled participants to mark the structures they deemed significant along the Kızılay-Ulus axis, helping us analyze how these spaces shape the identity of the capital city. Cognitive maps provide rich data associated with personal and collective memory, reflecting the traces of individuals' social and spatial experiences. In this context, the originality of the research lies in considering capital city structures not only as physical entities but also as emotional and social connections established by individuals with these structures, thus addressing the space-individual interaction from a multidimensional perspective. Consequently, the research has the potential to develop a deep understanding of individuals' relationships with space and to reveal the effects of these relationships on the sustainability of cities.



Figure 5. Semi-Structured Map as the Basis for Cognitive Map Formation

In the study prepared as a foundation in two separate areas, the positioning of structures, their ability to remain sustainably in the space, their presence along transportation routes, and their historical significance have guided the shaping of the research (Figures 5-6). The ability of structures to remain sustainably in the space has emerged as a significant criterion in this study. This sustainability criterion encompasses multifaceted elements of physical, functional, and social sustainability. The ability of structures to remain sustainable in the space is a process that requires a holistic approach to addressing not only the preservation of their physical presence but also functional, social, environmental, and historical elements. The prominence of this criterion in the study indicates the adoption of an approach that considers the multidimensional values of the space and provides a significant reference for future urban planning and preservation efforts.

Additionally, the methodological design of the study offers a unique contribution to understanding individuals' spatial perceptions and examining the effects of these perceptions on capital city structures. The field studies conducted using the cognitive mapping method concretize the locations and meanings of spaces in participants' minds, revealing the interaction between space and individuals. In this context, through individuals' mental maps, it becomes possible to better understand the place of specific structures and areas within collective memory and their relationship with the identity of the capital city. Furthermore, this method stands out as an effective tool for understanding how spaces are perceived in their historical and cultural contexts, as well as the feelings and thoughts individuals have toward these spaces (Figure 6-7).

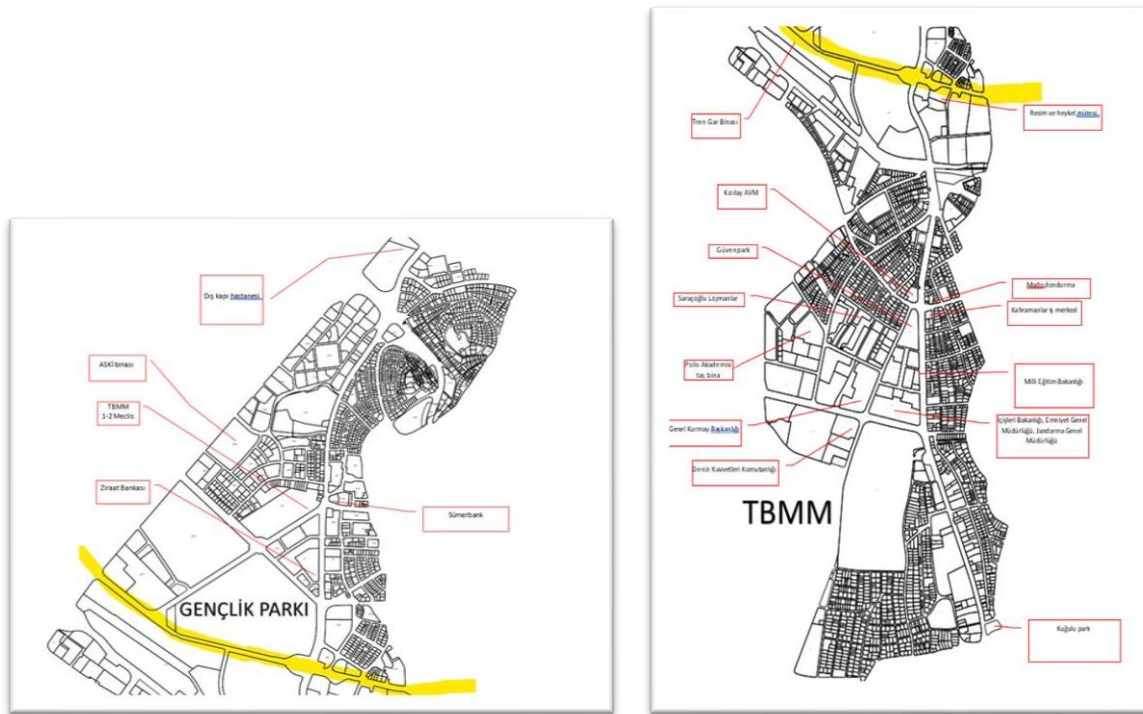


Figure 6. Example Base Layer of the Cognitive Perception Study 1

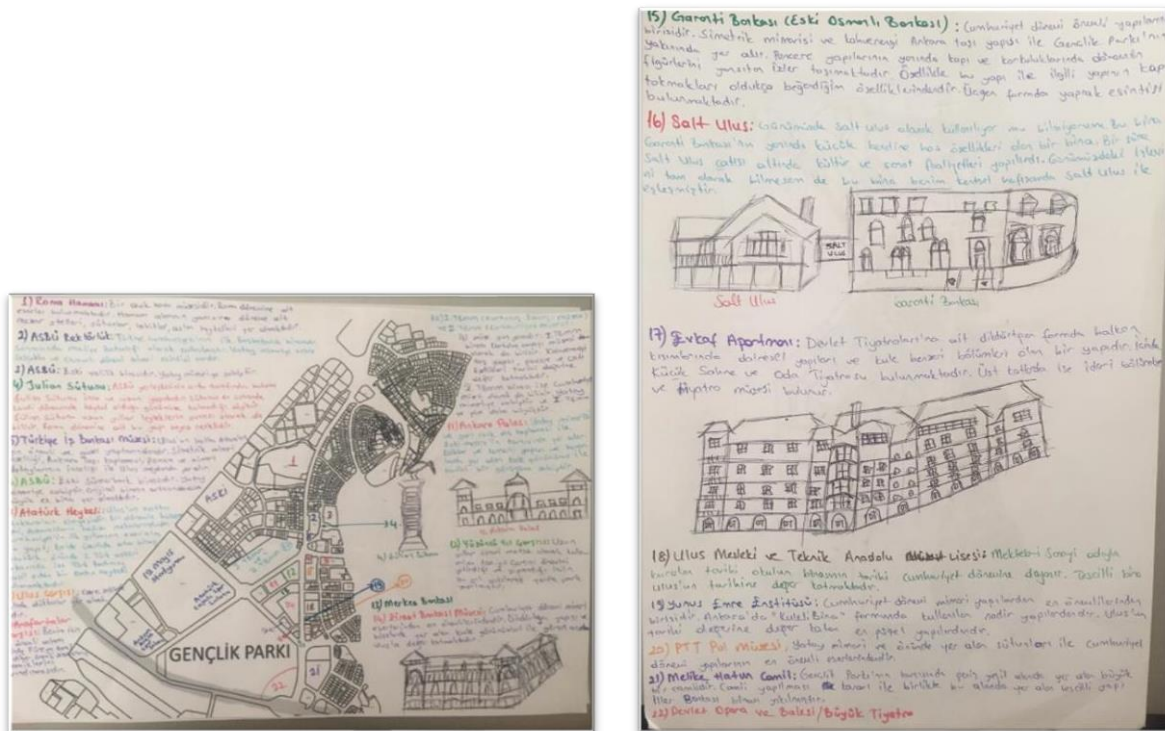


Figure 7. Example Base Layer of the Cognitive Perception Study 1

The cognitive mapping results obtained in the study indicate that individuals' spatial perception is shaped by distinct architectural elements, with spaces of historical, administrative, and public significance coming to the forefront. The maps highlight the locations of structures, their sustainable presence, integration with transportation routes, and historical context as the primary determining

factors. These findings reveal a parallel between cognitive mapping and in-depth interview results, further emphasizing the perceptual significance of capital city structures.

Table 1: Comparison of In-Depth Interview and Cognitive Mapping Results

Criterion	In-Depth Interview Results	Cognitive Mapping Results	Common Points
Definition of Capital City Structures	Government buildings (95.2%), Embassies (74.2%), Central Banks (59.7%)	Parliamentary buildings (83.3%), General Staff Headquarters (89.2%), Güvenpark (93.4%)	Structures with administrative and public functions play a central role in the perception of the capital city.
Primary Characteristics of Space	Political center (90.5%), transportation infrastructure (71.4%), historical structures (52.4%)	Location, transportation routes, historical and sustainable structures	Transportation and historical context emerge as key determinants of spatial perception.
Ownership and Usage Requirements	Public spaces should be under public ownership (96.8%)	Publicly owned and historically significant structures hold a central role.	Public ownership and historical/public values are essential for capital city structures.
Place in Collective Memory	Structures embedded in social memory (Parliament, Ziraat Bank, Güvenpark)	Elements retained in memory: location, history, and functionality	Elements that persist in collective memory strengthen individuals' perception of the capital city.

The analyses conducted strongly demonstrate the impact of the capital city phenomenon on spatial perception and individuals' sense of belonging. The results of in-depth interviews indicate that the fundamental elements shaping individuals' perception of the capital city are the historical and political identity of the space, as well as the functionality of its transportation system and administrative structures. While space fosters a deep sense of belonging through its political and historical context, the presence of structures with administrative and diplomatic functions plays a crucial role in concretizing this perception.

Cognitive mapping analyses, on the other hand, reflect individuals' perceptual priorities derived from their spatial experiences. Individuals tend to associate the structures embedded in their memory with elements such as location, functionality, and historical context. This underscores the influence of collective memory and individual belonging on spatial configurations. Both in-depth interviews and cognitive mapping results reveal that the perception of the capital city is reinforced through its connection with administrative and historical spaces, highlighting the significant meaning that public spaces and spatial organization hold for individuals (Table 1). These findings affirm that space is not merely a physical entity but also a crucial factor in shaping social and individual identity. The key findings of this study make significant contributions to understanding the impact of capital city structures on spatial perception and their place in collective memory. Data obtained through in-depth interviews and cognitive mapping methods reveal the complexity and multidimensionality of the factors shaping individuals' perception of Ankara's urban space. The location of structures, transportation routes, and historical significance have been identified as the most critical determinants of capital city perception. Notably, the relationships between these structures and the connections individuals establish with them demonstrate that space is not merely a collection of physical entities but also a crucial component in the construction of social and individual identity. This highlights the importance of incorporating spatial memory into future urban planning and conservation efforts.

Conclusion and Recommendations

The sustainability of capital city structures is of environmental, social, and economic significance for the future of cities. Individuals' processes of perceiving and making sense of spaces are directly linked

to the implementation of policies that ensure the long-term preservation of these spaces' value. This study, supported by cognitive mapping analyses, reveals that the meanings individuals attribute to spaces are strongly connected to elements containing historical and cultural traces. Areas closely associated with the capital city identity, such as Kızılay and Ulus, as well as Atatürk Boulevard, which connects these two districts, continue to be perceived as central locations. Therefore, it is crucial to preserve these spaces to maintain their historical identity in the future. One of the key contributions of this study is the emphasis on evaluating capital city structures not merely as isolated entities but in relation to their surrounding environment, underscoring the necessity of reconsidering these spaces in a manner that facilitates social interactions. The effective design of transportation networks and the preservation of historical textures will further enhance individuals' spatial perception by improving accessibility. The level of meaning attributed to spaces is directly related to individuals' time spent in the space, their experiences, as well as the transportation infrastructure and the degree of surrounding urban development.

The results of cognitive mapping further illustrate that individuals' spatial perception is shaped by historical, administrative, and public values, shedding light on how significant structures are embedded in their memory. Cognitive maps, supported by in-depth interviews, facilitate a deeper understanding of how participants interpret and relate to the spaces that remain in their memory. The central role of administrative buildings and public spaces in shaping the perception of the capital city reinforces individuals' sense of belonging. This study provides both theoretical and practical insights into the influence of the capital city concept on spatial perception. The findings establish a foundation for further exploration of Ankara's capital city identity and its impact on individuals while offering valuable insights into the role of urban space in personal and collective memory. Future research is encouraged to expand on these findings by examining similarities and differences in spatial perceptions across different capital cities. Such an approach would contribute to a more comprehensive understanding of the dynamics of the capital city concept and its relationship with urban space.

The fieldwork conducted under the themes of institutional identity, the concept of the capital city, capital city structures, and public ownership, along with the generated cognitive maps, demonstrates that individuals with high institutional identity in Ankara exhibit a strong relationship between space and identity in expressing the concept of the capital city, identifying its key structures, and emphasizing the necessity of these structures remaining under public ownership. However, the same level of awareness was not fully reflected in the cognitive map production, as only one participant was able to provide detailed markings and explanations on the semi-structured map. Among capital city structures, administrative buildings, the central bank, and embassies play a critical role in shaping individuals' spatial perception and their association with the capital city identity. This critical role further underscores the necessity of evaluating these structures not as isolated units but within their broader spatial context and reconsidering them in a way that promotes social interactions. In this process, the effective planning of transportation networks and the preservation of historical textures will facilitate spatial accessibility, thereby reinforcing individuals' spatial perception. The degree to which spaces are given meaning is directly linked not only to individuals' time spent and experiences in the space but also to transportation infrastructure, the level of surrounding urban development, and the conservation of historical urban fabric.

Social participation emerges as a crucial element in the processes of sustainability and meaning-making of spaces. As emphasized by Gehl, public spaces designed to enhance social interactions strengthen individuals' sense of belonging to their environment. In this context, it is essential to implement policies that encourage active citizen participation in the planning processes of capital city spaces. In the case of Ankara, areas such as Kızılay and Ulus serve as key carriers of the capital city identity, and any interventions in these spaces should preserve their unique character while integrating them into modern urban life. The preservation of historical traces within these spaces, supported by contemporary urban forms, will reinforce individuals' emotional attachment to the environment and enhance the long-term sustainability of these spaces.

In this regard, future studies should conduct a more detailed examination of the relationship between individuals and space, providing a solid foundation for understanding the individual and societal impacts of spatial design. The findings obtained from Ankara serve as a reference point for comparative studies in other capital cities. The sustainability of capital city spaces should not be limited to the preservation of the physical environment but should also encompass the transmission of social and cultural values to future generations. Enriching spaces with historical and cultural heritage elements fosters an emotional connection between city dwellers, visitors, and their surroundings. In particular, Yi-Fu Tuan's concept of topophilia (the love of place) highlights how individuals' emotional attachment to a specific location shapes its perceived value and meaning. Tuan's perspective underscores the significance of environmental design in influencing how residents of capital cities interpret and assign value to their surroundings. Therefore, the design of capital city spaces should not solely prioritize aesthetic concerns but should also incorporate elements that enhance individuals' experiences and perceptions of the space, thereby fostering a deeper connection to their urban environment.

This study highlights the sustainability of capital city structures, the perception of space by individuals, and the significance of social participation, providing key insights into strengthening the identity of capital cities. The findings demonstrate that individuals' attribution of meaning to spaces is closely linked to historical and cultural elements. Specifically, areas such as Kızılay and Ulus emerge as key carriers of the capital city identity, underscoring the necessity of their preservation to maintain their historical and cultural continuity. The research reveals that individuals' spatial perceptions are shaped not only by the presence of physical structures but also by their environmental, social, and cultural contexts. In-depth interviews supported by cognitive mapping techniques indicate that spatial perception is influenced by factors such as the location of capital city structures, transportation routes, and historical context, all of which contribute to a strong sense of belonging among individuals. This confirms that spaces are not merely physical entities but also fundamental components in shaping individuals' social and cultural identities.

The sustainable development of cities contributes not only to individuals' spatial perceptions but also to the formation of collective identity. Drawing on Lynch's concept of urban legibility, the clear and comprehensible design of capital city spaces enhances individuals' ability to recognize and connect with these spaces. For instance, areas such as Kızılay Square in Ankara have established a central place in collective memory through their symbolic structures and environmental arrangements. Moreover, ensuring active public participation in the preservation and development of such spaces can enhance their potential for social interaction. This approach aligns with Gehl's perspectives on the role of public spaces in strengthening social ties. Supporting capital city spaces with technological and environmental innovations will ensure their sustainability not only in a physical sense but also in a social and cultural context. Therefore, a holistic approach should be adopted to preserve the distinctive structures and spaces of capital cities for future generations. This approach should integrate spatial design, public participation, and environmental conservation principles, ensuring the long-term sustainability of urban environments.

Compliance with the Ethical Standard

Conflict of Interest: The author declare that he does not have a conflict of interest with other third parties and institutions, or if so, how this conflict of interest arose and will be resolved, and author contribution declaration forms are added to the article process files with wet signatures.

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