

# PIONEER AND INNOVATIVE STUDIES IN ARCHITECTURE, PLANNING AND DESIGN



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***PIONEER AND INNOVATIVE  
STUDIES IN ARCHITECTURE,  
PLANNING AND DESIGN***

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**Assoc. Prof. Dr. Enver KENDAL**





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# **An Examination of Cemeteries in the Context of Open Green Spaces in the City of Rize**

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## ABSTRACT

Cemeteries, as part of urban green spaces, serve as elements that integrate nature and culture, the past and the present. They hold a significant place in Turkish-Islamic culture. In Ottoman times, cemeteries were of great importance, forming a living green texture and playing a vital role in the structure of cities. However, in modern times, factors such as population growth, urbanization, construction activities, and unintentional human damage have led to the loss of cemetery spaces. Furthermore, the lack of attention to planning processes in many newly established cemeteries prevents them from fully serving their intended functions.

This study examines the current state of cemeteries in Rize, which are part of the city's urban open green spaces, through literature reviews, photographs, and on-site observations.

*Keywords – Urban Open-Green Spaces, Urban Cemeteries, Urbanization, Biodiversity.*

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## INTRODUCTION

Cities are continuously developing settlements where basic needs such as living, working, resting, and recreation are met, and where population density is higher compared to rural areas (Karakurt, 2006; Uğurlu, 2010; Alacahan, 2021). Urban spaces have evolved into distinctive identities shaped by the collective life and socialization tendencies of societies over time, reflecting their needs. The physical structure of cities mirrors the social, economic, and cultural characteristics of their inhabitants as well as their interactions. In this context, urban spaces can be categorized by their functions, including residential, commercial, industrial, transportation, social facilities, recreational, and natural areas (Gül and Küçük, 2001).

Urban open spaces are defined as unbuilt or unused areas excluding architectural structures and traffic zones, while urban green spaces refer to open areas covered with vegetation or integrated with it. According to this definition, every green space is also an open space; however, not every open space qualifies as a green space (Özbilen, 1991; Önder and Polat, 2012; Gül et al., 2020). The significance of urban open-green spaces, both aesthetically and functionally, for the physical and mental well-being of individuals has been highlighted in numerous studies (Bekci et al., 2013; Yılmaz et al., 2017; Ögçe et al., 2022; Dinçer et al., 2022).

Gül (2001) suggests that urban open-green spaces can be grouped into three categories based on their usage: general, semi-private, and private areas (Gül and Küçük, 2001). Yıldızcı (1987), on the other hand, categorizes



urban open-green spaces into four groups based on the scale of the urban unit they serve, their activities, and functions: building level, neighborhood level, district level, and city level. City-level green spaces, which include cemeteries, are listed alongside zoos, fairgrounds, exhibition areas, urban parks, urban roads and boulevards, pedestrian pathways, sports complexes, recreational areas, botanical gardens, groves, forests, and green belts (Gül and Küçük, 2001).

Cemeteries, as urban green spaces, are ancient landscapes that vary depending on societal cultural structures. Found in every settlement, from the smallest villages to cities, cemeteries hold spiritual significance and play a critical role in public health by safely managing deceased bodies without harming the environment. Seen as part of the urban green infrastructure, cemeteries are integral to the social and ecological systems of cities (Akten and Özkartal, 2016; Özhancı and Aklıbaşında, 2017). In many developed countries, cemeteries are considered alternative green spaces in urban landscapes, with planning and design approaches addressing recreational needs and green space requirements due to their functional and aesthetic characteristics (Tuna and Göker, 2018).

### **Urbanization And Cemeteries**

In the Turkish-Islamic world, concepts such as “cemetery,” “graveyard,” and “hazire” (small cemetery plots near mosques or religious structures) are used to describe areas where collective graves are located. Cemeteries, graveyards, and tombstones represent some of the most striking examples of a city’s historical and cultural fabric, reflecting its past, faith, and lived experiences within the urban structure. These spaces have traditionally been highly respected, valued, and carefully maintained by communities, emphasizing their protection, cleanliness, and preservation of green elements, tombstones, and grave spaces (Hanoğlu, 2024).

The burial culture, which emerges from the fusion of unique traditions and customs with religious beliefs, has given rise to burial structures that reflect distinct architectural styles in every society. The development and shaping of cemeteries are influenced by societal beliefs, traditions, habits, population growth, hygiene, and social needs, and they have continued as an important tradition (Aktan, 1999). Cemeteries, as unique places within urban structures, reflect cultural changes in urban societies and play a significant role in unifying cultural communities (Francis et al., 2000). Cemeteries and other burial grounds, which are considered sacred places worldwide, are closely connected to the history of their societies (Rugg, 2000).

Rapid urbanization and the resulting construction, renovations, and infrastructure projects must avoid damaging, overshadowing, or destroying historical artifacts. However, such activities often harm or even obliterate

historical sites. Old cemeteries and hazire areas are among the most affected by these developments (Hanoğlu, 2024).

The rapid changes and developments driven by urbanization exert pressure on protected areas, causing damage and destruction while impoverishing humanity's cultural heritage. Instead of preserving the historical urban fabric as if it were a museum, efforts should focus on integrating it as a living part of the city and thoroughly evaluating its spaces and way of life. Preservation should not only aim to protect the physical structures but also ensure that the conditions for their sustainable existence are provided. Every built environment is a product of social relationships, economic structures, and value systems, and its preservation must reflect this complexity. A city cannot be reduced to its physical structures alone; it is an inseparable whole with its cultural, social, and economic framework (Mazı, 2009).

### **The Role of Cemeteries Within Urban Green Infrastructure**

Cemeteries often serve as "repositories of natural and cultural diversity" (Barrett and Barrett, 2001). The combination of nature, culture, history, and cemeteries makes these spaces uniquely distinct from other urban areas (Rae, 2021). In urban settings, cemeteries act as natural oases and play a crucial role in conserving biodiversity, serving as significant reservoirs of plant biodiversity apart from reserves and parks (Löki et al., 2020; Cengiz et al., 2014). These spaces exhibit unique ecosystems, distinct from others in terms of soil characteristics, flora and fauna, microclimate, and ecological parameters they support. Due to reduced human intervention, rare and protected plant species can thrive in cemeteries, resulting in unparalleled floral diversity in these areas (Sallay et al., 2023).

Studies conducted by Kowarik et al. (2016) indicate that cemeteries provide significant cultural ecosystem services within urban green infrastructure. As ubiquitous elements of green infrastructure in cities, cemeteries are becoming increasingly valuable for biodiversity conservation as urbanization intensifies globally.

Cemeteries located within urban areas offer numerous ecological functions, including acting as buffers between different land uses, influencing urban microclimates, mitigating the urban heat island effect, providing habitats for urban fauna, preserving the natural flora of cities, reducing air pollution, balancing temperature increases, enhancing atmospheric humidity, and serving as unchanging reserves of natural soil (Karaoğlu, 2007).

### **Cemeteries of Rize City**

In the city of Rize, the three largest collective cemeteries and one family cemetery were examined. These include the Municipal Cemetery (Belediye Asri Mezarlığı), Kaplıca Family Cemetery, Hayrat Cemetery, and a family cemetery located in the Fener neighborhood. Apart from these three

collective cemeteries, many residents have established cemetery spaces on their private lands.

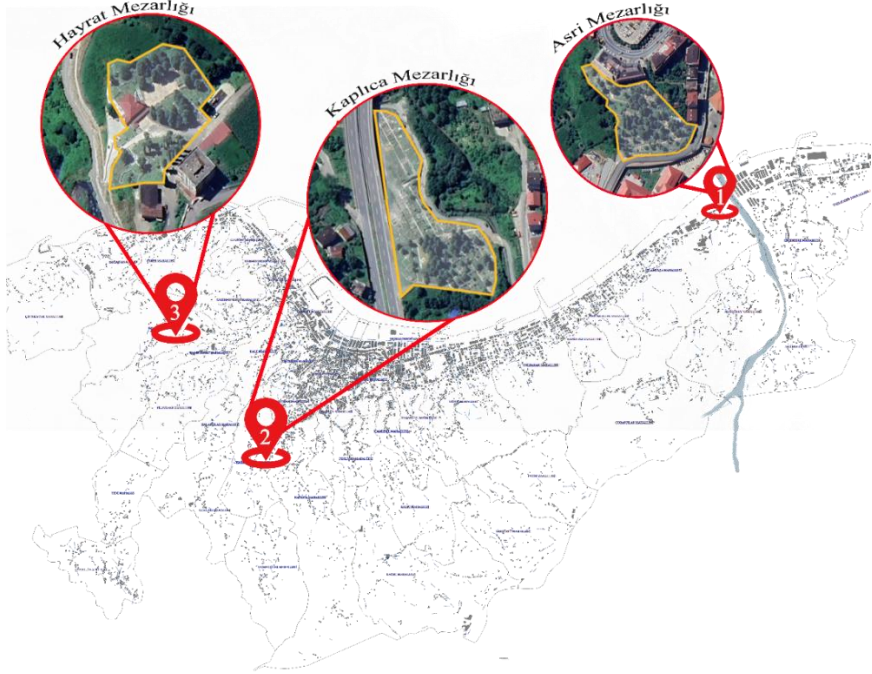


Figure 1. The Location of Existing Collective Cemeteries in Rize City

According to Google Earth measurements, Hayrat Cemetery covers an area of 5,324.74 m<sup>2</sup>, Kaplıca Cemetery 8,049.19 m<sup>2</sup>, and the Municipal Cemetery 7,856.59 m<sup>2</sup>. The facilities, parking availability, and prominent plant diversity within these cemeteries were evaluated through on-site observations and photographs. The notable examples of plant diversity within the cemeteries are summarized in tables.

#### **Municipal Cemetery (Belediye Asri Mezarlığı)**

The cemetery includes amenities such as an entrance area, a pergola, a library, trash bins, fountains, and benches for seating (Figures 1, 2, and 3). However, it lacks parking spaces, restrooms, and an ablution facility.



Figure 2. Entrance to the Municipal Cemetery



Figure 3. Amenities and Circulation Areas in the Municipal Cemetery

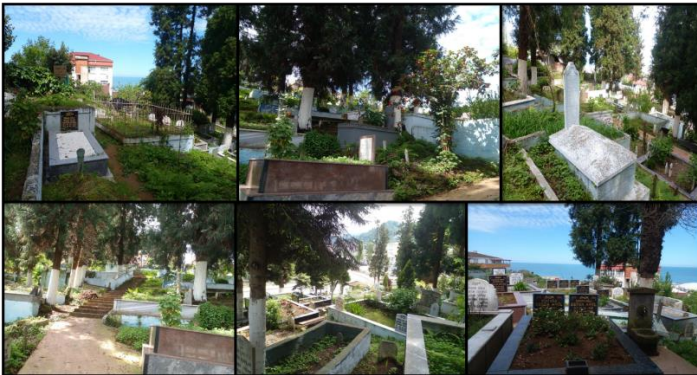


Figure 4. Views from Within the Municipal Cemetery

In terms of vegetation, coniferous trees dominate the tree species, while flowering shrubs (*Cryptomeria japonica*, *Picea pungens*, *Pinus sp.*, *Thuja orientalis*, *Thuja occidentalis*, *Azalea japonica*, *Datura stramonium*, *Camellia sinensis*, *Rosa sp.*, *Amaryllis belladonna*, *Gardenia jasminoides*, *Hydrangea macrophylla*, *Anthemis altissima*, *Camellia japonica*, *Hibiscus syriacus*, *Euryops*, *Pectinatus*, *Callianthe picta*, *Pelargonium zonale*) and climbers such as *Hedera helix* are prevalent.

## Kaplica Family Cemetery

This cemetery lacks facilities such as parking spaces, restrooms, and ablution facilities (Figures 5 and 6). The primary plant species identified in this area consist of flowering shrubs, while tree species are more limited (*Fraxinus excelsior*, *Alnus glutinosa*, *Cryptomeria japonica*, *Pinus sp.*, *Ailanthus altissima*, *Thuja orientalis*, *Azalea japonica*, *Dianthus plumarius* 'Maischnee', *Rosa sp.*, *Amaryllis belladonna*, *Gardenia jasminoides*, *Euonymus japonica*, *Hydrangea macrophylla*, *Euonymus japonica* 'Aurea', *Callianthe picta*, *Camellia japonica*, *Nerium oleander*, *Cornus sanguinea* L., *Hibiscus syriacus*, *Euryops Pectinatus*, *Spiraea × vanhoutteii*).



Figure 5. Entrance and Circulation Areas in the Kaplica Family Cemetery

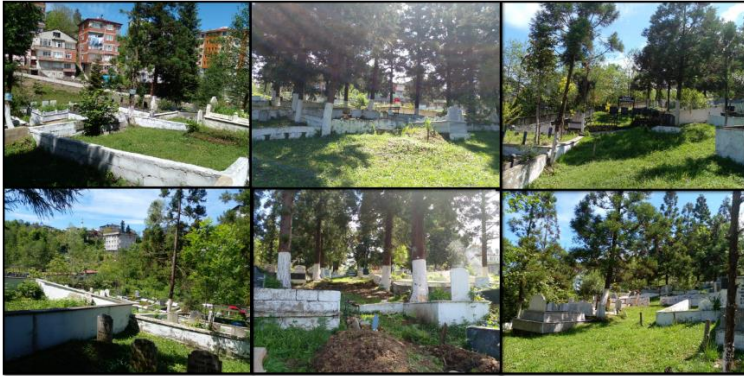


Figure 6. Views from Within the Kaplica Family Cemetery

## Hayrat Cemetery

The Hayrat Cemetery includes a mosque, an ablution facility, restrooms, gathering areas, benches, and trash bins (Figures 7 and 8). However, there is no designated parking area for vehicles. Surrounding the cemetery are tea

gardens and children's play areas. Some of the notable tree and shrub species observed include *Magnolia grandiflora*, *Cedrus deodora*, *Cryptomeria japonica*, *Laurocerasus officinalis*, *Cupressus macrocarpa*, *Azalea japonica*, *Laurus nobilis*, *Rosa sp.*, *Gardenia jasminoides*, *Hydrangea macrophylla*, *Yucca sp.*, *Euonymus japonica 'Aurea'*, *Callianthe picta*, *Hibiscus syriacus*, and *Spiraea × vanhoutteii*.



Figure 7. Entrance and Circulation Areas in the Hayrat Cemetery

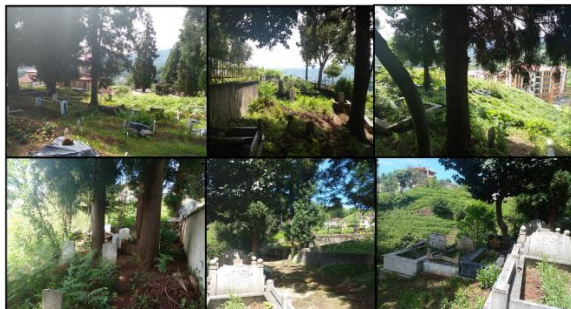


Figure 8. Views from Within the Hayrat Cemetery

### Family Cemeteries

Rize has a significant number of family cemeteries. As an example, the family cemetery in the Fener neighborhood was analyzed (Figure 9). This cemetery is surrounded by Recep Tayyip Erdoğan University, residential buildings, and a mosque. The primary plant species identified around this cemetery include *Picea orientalis*, *Laurocerasus officinalis*, *Magnolia grandiflora*, *Cedrus deodora*, *Robinia pseudoacacia*, *Pinus sp.*, *Chamaecyparis lawsoniana*, *Eriobotrya japonica*, *Juniperus chinensis*, *Azalea japonica*, *Camellia sinensis*, *Rosa sp.*, *Gardenia jasminoides*, *Anthemis altissima*, *Hedera helix*, *Wisteria sinensis*, and *Vinca minor*.



Figure 9. Views from Within the Fener Neighborhood Cemetery

## RESULTS AND DISCUSSION

Hanođlu (2024) highlights the presence of numerous historical cemeteries, hazire areas, and tombstones in the center, districts, and villages of Rize. Additionally, the sources indicate that many cemeteries and hazire areas, particularly in the city center, no longer exist today.

Although cemeteries are significant indicators of urban identity and serve as tangible representations of a city's history and culture, the collective cemeteries in Rize do not adequately reflect a deep historical heritage. This can be explained by Güveliođlu's (2017) statement that following the Ottoman conquest of Rize, the first mosques and their adjacent cemeteries were established in what is now the city center. However, due to the need to relocate these cemeteries, they were moved to other areas, and Rize families transported their burial sites to private lands. Thus, today, Rize's historical cemeteries are more prominently found in family cemeteries rather than collective ones.

Considering the increasing population and urbanization activities (such as construction and road building) in Rize, historical cemeteries in the city center were moved to private family lands, which has contributed to the ongoing tradition of family cemeteries in personal plots.

In general, the cemetery layouts in Rize are irregular, with minimal spacing between graves due to limited space. This lack of spacing often results in insufficient internal circulation within the cemeteries. The cemeteries are located near traffic arteries and are accessible by public transportation.

However, some deficiencies, particularly the lack of parking spaces, stand out.

In terms of vegetation diversity, flowering shrubs are more commonly preferred, while tree species are less represented.

Karaoğlu (2007) notes that Ottoman cemeteries were established in locations with the most scenic views and functioned as vibrant green spaces integrated into daily life, playing significant roles in urban structures. In contrast, modern cemeteries are more confined within urban fabric, with grave layouts becoming disordered due to space constraints, and green elements partially covering these areas. Rize's cemeteries are no exception to this observation. This issue may stem from the disregard for planning processes in cemetery spaces. Akten and Özkartal (2016) emphasize that the values considered in the lower and upper planning processes of urban planning should also be applied to cemetery spaces.

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# **Looking at the Disappearing Line Between Rural and Urban With the Law No. 6360: the Example of Trabzon Province**

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## ABSTRACT

The change in planning practices in urban and rural areas causes spatial and social changes in such areas. Especially spatial changes in urban areas cause pressure in rural areas and cause the disappearance of the buffer zone that we call rural urban perimeter. The effects of the Metropolitan Law No. 6360 on rural areas will be examined within the scope of the study. First of all, general information will be given about the law No. 6360, the spatial and social changes experienced in rural areas after the enactment of the law will be emphasized and an examination will be made on Söğütlü and Yıldızlı Neighborhoods located in Akçaabat district of Trabzon province. The purpose of this study is to examine the effects of the law No. 6360 especially on rural areas and to determine how the line between urban and rural areas has become undefined and disappeared. It is discussed that the spatial changes in rural areas have occurred especially after the law and what should be done for these changes to be positive.

*Keywords – Urban Area, Rural Area, 6360, Spatial Change, Trabzon.*

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## INTRODUCTION

In Turkey, since 2004, some local government laws (5216, 5302, 5355, 5393) have made important arrangements in terms of the content and spatial changes of the concepts of rural and urban. With the laws numbered 5747 and 6360 enacted in 2008 and 2012, significant changes were made in the field of local governments and this situation caused changes in the content of the rural-urban concepts. These concepts, which have two opposite meanings, started to intertwine spatially after a while and caused the emergence of the definition of rural-urban periphery defined as gray area. Initially defined as two opposite concepts, rural and urban, especially after the 1970s, became two complex and variable concepts with the need for the city to transform and grow spatially. The sharp border line between urban and rural has started to become vague and undefined and has recently started to disappear. This complexity, variability and lack of definition has started to occur not only in the spatial sense but also in the socio-cultural field. Especially with the law numbered 6360 enacted in 2012, rural areas where villages transformed from neighborhoods to city status overnight began to be defined as urban areas, and all kinds of services they would receive were transferred to the metropolitan municipality with the closure of town municipalities. The perimeter formed by the disappearance of the line between rural and urban, which is defined as change, diversity and uncertainty in many sources, should be evaluated and discussed under various headings that actually constitute the city and the countryside. In this

context, the study will include definitions of rural and urban perimeters within the context of the theoretical framework, the content of the law numbered 6360 within the context of the concept of rural city will be examined and the question of what its effect on these concepts will be sought, and determinations will be made through Söğütlü and Yıldızlı Neighborhoods in the Akçaabat district of Trabzon province as a concrete spatial example of the effects revealed.

After this section, the definitions of rural-urban concepts will be continued through the definition of rural-urban perimeter. Levent (2017) has also made a definition for undefined areas between rural and urban areas as “Rural-urban perimeters, in the most general sense, are like interfaces where the city and the countryside touch each other. These areas, where it is very difficult to determine where it starts (the border with the urban built environment) and where it ends (the border with the rural area), are one of the distinctive parts of the metropolitan region because they are the carriers of the spatial relationship between the countryside and the city.”

Conzen (1969) defined it as the area located next to the city formed by different land uses that cannot find a place for themselves in the city center, while Barke (1982) defined it as areas directly produced by the city with the needs of the city but not included in the city. Pryor (1968) states that the concept of rural-urban perimeter is variable, complex and complicated because its content varies from city to city (Levent, 2017). Scott (2013) states that this variability and complexity in the concept of rural-urban periphery stems from the fact that the relations between rural and urban constantly change in each period and the flow between rural and urban is shaped according to the needs of that day. When we look at conceptual approaches, it is seen that there is no clear definition for the gray areas or periphery between rural and urban.

It is revealed that this situation is made even more complicated by the fact that it does not have the characteristics of either rural or urban. In this context, it should be examined what the Law No. 6360, which triggers the spread to rural areas with the pressure existing in the center of cities and overnight brings the village status regions to urban status, destroying this clear line between rural and urban, includes and what it changes in the socio-cultural structure of urban and rural areas and communities.

## **A GENERAL LOOK AT LAW NO. 6360**

With the Law No. 6360 dated 12/11/2012 on the Amendment of Certain Laws and Decree Laws with the Establishment of Metropolitan Municipalities and Twenty-six Districts in Thirteen Provinces, many changes have been brought to the agenda regarding both population, authority limits and administration. With the regulation corresponding to

important changes in terms of local administration, the number of municipalities in Turkey has decreased significantly, the legal personality of 1591 town municipalities and 16082 villages has ended, and 29 provincial special administrations have been closed. While 559 of the closed town municipalities were town municipalities in non-metropolitan provinces, 1032 were in provinces with metropolitan municipalities. While the number of municipalities in Turkey was 3,228 in 2000, this number decreased to 2,950 in 2010 after the closures that occurred as a result of the changes made to the Metropolitan Law and the Municipality Law, following the 2009 local elections. This time, with the changes made, this number decreased to 1,359 with the closure of 1,591 municipalities. This number increased to 1,384 with the addition of newly established district municipalities. Such a regulation, which means a decrease of approximately 60% in the number of municipalities throughout the country in the last 10 years, also means a significant change in terms of our country's local government system (TMMOB Chamber of Urban Planners, 2012).

With the law numbered 6360, the provision "metropolitan and district municipalities can provide all kinds of activities and services to support agriculture and animal husbandry" was added to the Metropolitan Municipality Law numbered 5216. With this change, the duty of providing services to rural areas in provinces with metropolitan municipalities was transferred to metropolitan municipalities (Yıldırım and Bıçakçı 2019). In the study conducted by Zengin (2014), it was stated that with the law numbered 6360, agricultural production will be damaged, production capacity will decrease, rural areas will have difficulty in sustaining their rural life as a result of legal, administrative and financial losses, and commercialized agricultural production system will become widespread instead of traditional and natural agricultural production (Yıldırım and Bıçakçı 2019). In this context, the research will seek answers to the questions of how rural areas were affected spatially and socioculturally by this law that eliminated the urban-rural distinction, what kind of variables were seen in the rural-urban periphery, which we can define as the buffer zone due to the removal of borders.

## **MATERIAL and METHOD**

The material of the study will be focused on the spatial and social changes experienced by Söğütlü and Yıldızlı Neighborhoods located in Akçaabat district of Trabzon province after the transition from village status to neighborhood status after Law No. 6360.

## FINDINGS

### *Examining the Effect of Law No. 6360 on Rural-Urban Line in the Example of Söğütlü and Yıldızlı Neighborhood*

Söğütlü and Yıldızlı neighborhoods, which are the study area, are located in the east of Akçaabat district. Yıldızlı neighborhood borders Akyazı neighborhood of Ortahisar district, and Söğütlü neighborhood borders Yaylacık neighborhood in the west. While Söğütlü is a neighborhood with a population of 23,842 as of 2023 and a surface area of 4.43 km<sup>2</sup>, Yıldızlı is a neighborhood with a population of 13,146 as of 2023 and a surface area of 6.02 km<sup>2</sup>.

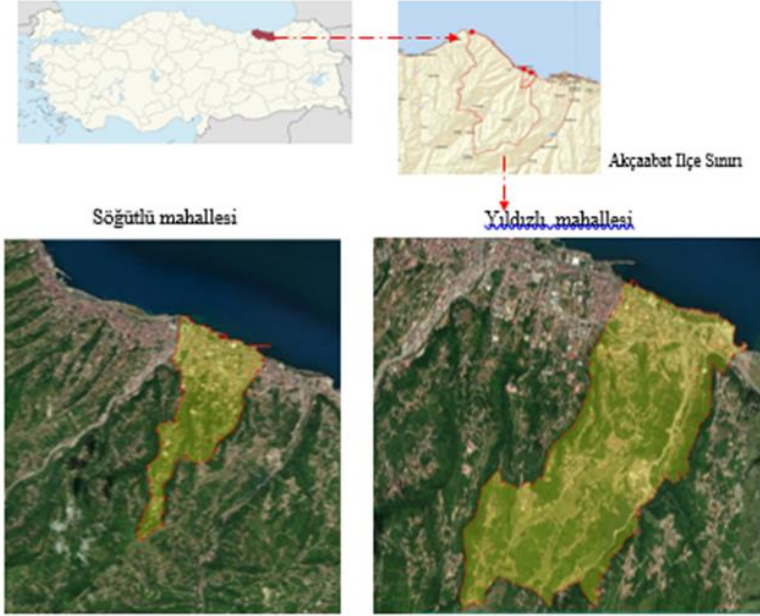


Figure 1: Work Area

Common features of Söğütlü and Yıldızlı neighborhoods;

- hosting both urban and rural settlements,
- frequently being under urban pressure due to its proximity to the city center,
- the presence of a university campus and the population it brings,
- the fact that some of the housing problems that emerged with urban growth are being tried to be solved with mass housing projects carried out by TOKİ in these neighborhoods on a provincial scale,
- having various geographical features; valley, stream, sea, beach etc.
- hosting different uses such as university, hotels, sports facilities, agricultural areas, settlement, coast etc.,



- the presence of Sera Lake in Yıldızlı neighborhood, which has the status of Natural Site-Sustainable Protection and Controlled Use Area,
- being one of the oldest settlements on a provincial scale and having different areas of use, and the changes in the socio-cultural structure that have occurred over time.

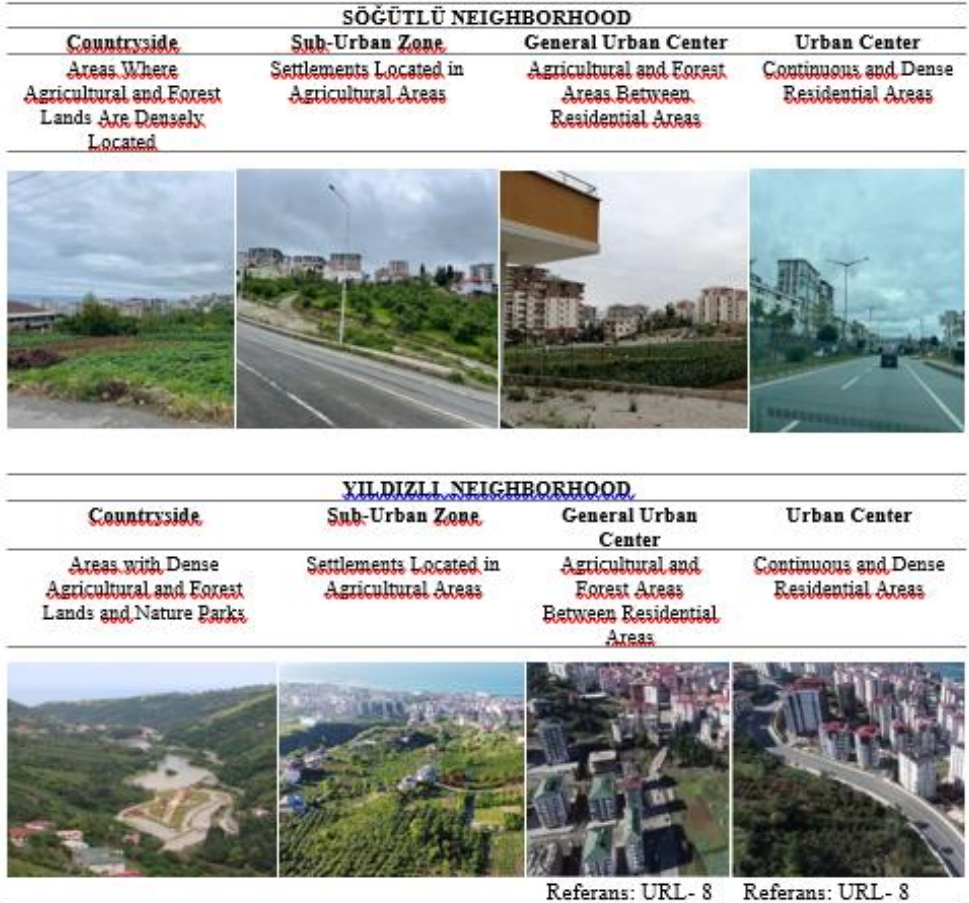


Figure 2: Work area and available area usage types

The spatial change in Söğütlü and Yıldızlı neighborhoods The pressure of the city on the rural areas has started to increase noticeably with the law numbered 6360 enacted in 2012. In order to present the change concretely, the Environmental Development Plans, Master Zoning Plans and Implementary Zoning Plan and reports of the district where the neighborhoods are located have been examined. It is seen that the decisions taken in the plans were effective after the law numbered 6360 after 2012,

and the increase in the authority of the Municipalities to create and change plans has started to disappear, and the rural-urban distinction has started to disappear. Within the scope of the change in the study area in the context of plans and regulations;

In the 1/50000 scale Provincial Environmental Development Plan(PEDP), which was approved and put into effect by the Trabzon Metropolitan Municipality and made based on the Metropolitan Law numbered 5216, 5 planning sub-regions were proposed by evaluating the basin borders, demographic structure and development opportunities of the province together.

The 1st Planning Sub-region of these consists of Ortahisar, Akçaabat, Yomra and Arsin districts. Based on the Provincial Environmental Plan, a 1/25000 scale Master Zoning Plan was prepared for the 1st Planning Sub-Region (Kuyumcuoğlu, 2023). In the approved 1/25000 Master Zoning Plans(MZP) , the urban population in the environmental plan is used as the planning population, the same population will be settled in a smaller area compared to the environmental plan, and this causes an increase in the settlement density rate in urban areas, thus increasing the pressure on rural areas. This situation is clearly seen in Söğütlü and Yıldızlı neighborhoods. Currently, the number of people per km<sup>2</sup> in Yıldızlı, which has a population of 13,347, is 4,404, while in Söğütlü, this situation is 3,617. Since the 1/25,000 scale Master Zoning Plan is a spatial decision-making plan, there are no decisions regarding use, protection and development for settlements with rural characteristics.

However, while the Master Zoning Plan (MZP) should produce main decisions for these purposes and make decisions such as rural development scenarios in accordance with upper-scale environmental plans, the fact that these decisions are to be made in lower-scale zoning and implementation plans actually shows that the necessary decisions are not made in a plan at the sub-regional level. In the context of protection purposes, although the protection of pasture-meadow status plateau areas, stream basins, coastal areas, agricultural areas, biodiversity, forest areas, protected areas and other areas that need protection are defined in the environmental plans, no decision was made by leaving the areas within this scope outside the plan approval borders in the 1/25000 scale Master Zoning Plan and the integrity of the plan was disrupted. This situation negatively affects Sera Lake and its surroundings, which are within our study borders and are shown as a protected area.

Another problem identified is the increase in uncontrolled urban density and the point where the pressure on the countryside increases with growth as a result, the lack of consistency between upper and lower scale plans. While there is no information about tourism targets in the 1/50,000 PEDP s for Söğütlü and Yıldızlı, the fact that the locations of facilities that

will support tourism activities are marked in the 1/5000 MZPs both shows the inconsistency between the plans and the fact that the tourism activity areas are determined not in urban areas but rather in the southern borders of the neighborhoods, increases the pressure on the rural areas, the landscape becomes undefined at the neighborhood scale and even fragments, and as the pressure increases, the landscape structure can disappear. Another problem in the plans covering the study area is the difference between the plan decisions and the information written in the report content. In particular, there are differences between the report and the plan base in the population calculations and projections in the 1/5000 MZPs and 1/1000 MZPs of Söğütlü and Yıldızlı neighborhoods. Another striking situation is the difference in the land use decisions in the 1/5000 MZPs and 1/1000 MZPs. The areas seen as green areas in the MZPs were planned as IZP city service areas or residential areas.

Thus, the areas thought to be protected at the upper scale were opened to construction without attracting attention and urban settlement areas became even more crowded. In Yıldızlı, it was determined that some green areas, residential areas, and commercial areas between the 1/5000 scale MZP and the 1/1000 scale MZP turned into afforestation areas, commercial areas and tourism areas, respectively; In Söğütlü, it was determined that especially the areas that were parks and green areas in the 1/5000 scale MZPs turned into residential areas in the 1/1000 scale MZPs. This situation is especially seen in the Söğütlü neighborhood. While the comparable heights were not included in the upper plan, the increased comparables in the MZPs caused the formation of high-rise sites and agricultural lands and the historical texture of the neighborhood were lost in time (Kuyumcuoğlu, 2023).

If the above situation is summarized; 4 main plan reports were examined, namely 1/50,000 Environmental Development Plan (PEDP), 1/25,000 Trabzon Provincial Environmental Development Plan on the upper scale, 1/5000 Söğütlü Zoning Plan (MZP), 1/5000 Yıldızlı Zoning Plan (NİP), 1/1000 Söğütlü Implementation Zoning Plan (IZP), 1/1000 Yıldızlı Implementation Zoning Plans (IZP) on the lower scale.

When the reports are examined, the first thing to be seen is that decisions are being taken that will encourage the growth in the population rate every passing day and therefore increase the urbanization rate. It is stated that the population rate determined in the 1/50,000 scale Environmental Development Plan will be accommodated in a settlement area smaller than the area size specified in the Environmental Development Plan on the 1/25,000 scale Master Zoning Plan. It is seen that this situation caused the density in the urban area to increase, the changes in social and economic dimensions to grow, and after a while, the pressure to be directed towards the countryside again. Similarly, it was stated in the 1/25,000 Master Zoning Plan that the region has both rural and urban characteristics, but it was

determined that there was no spatial or administrative decision in the context of the protection-use balance. Another important point is; while there is no decision on the tourism function in rural areas in the 1/50.000 Environmental Development Plans, these decisions are encountered in the 1/5.000 Implementary Zoning Plans.

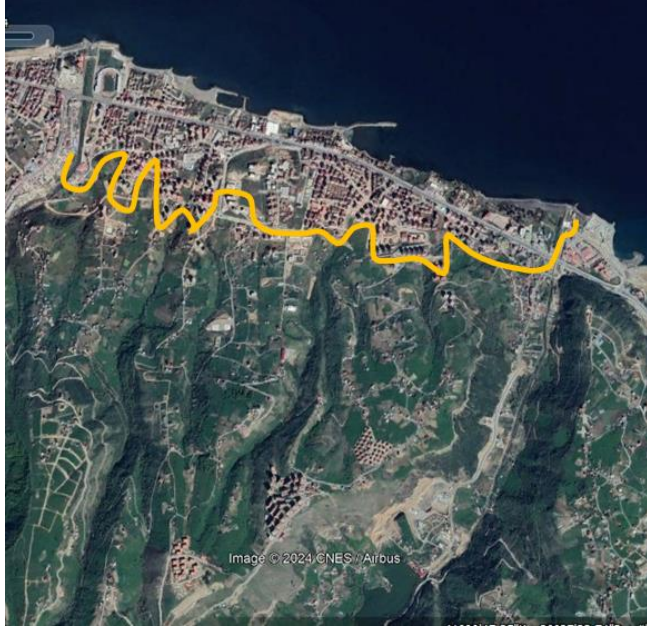


Figure2:Settlement boundaries in Sögütlü and Yıldızlı neighborhoods in 2004



Figure3: Settlement boundaries in Sögütlü and Yıldızlı neighborhoods in 2022

Table1: Total land use size and rate of Sögütlü and Yıldızlı neighborhoods for the years 2004 and 2022

Arazi Kullanımı	2004		2022	
	Alan (km <sup>2</sup> )	%	Alan (km <sup>2</sup> )	%
Açık Alanlar	0,67	6,22	0,74	6,82
Çayırlar	0,52	4,86	0,54	4,98
Maden Ocağı	0,014	0,13	0,05	0,54
Meralar	0,04	0,45	0,05	0,54
Tarım Alanları	6,01	55,18	5,09	46,76
Orman	1,16	10,65	0,62	5,73
Eğitim Tesisi	0,34	3,17	0,64	5,64
Su Kütleleri	0,37	3,40	0,25	2,32
Yerleşme	1,61	14,85	2,81	25,86
Yeşil Alanlar	0,11	1,08	0,08	0,80
<b>Toplam</b>	<b>10,45</b>	<b>100,00</b>	<b>10,45</b>	<b>100,0</b>

With the changes made in the context of plans and regulations, the total land use sizes of Söğütlü and Yıldızlı neighborhoods before and after the law numbered 6360 have changed as follows (Table 1). In both neighborhoods that changed from village status to neighborhood status, the pressure of the city on the countryside is clearly seen and the absence of the rural-urban periphery is revealed (Figure 2,3).

## **RESULTS AND DISCUSSION**

In the world where the population living in cities is increasing day by day, the pressure of cities on rural areas is becoming a growing problem. The loss of the urban and rural balance and the return to a similar structure image all over the world brings with it ecological, economic and social problems. Thus, over time, urbanized areas turn into problem areas, which causes a demand to leave problematic areas and move towards new settlement areas, causing the urbanization pressure to spread to all parts of the world. As seen in the literature and visual analysis studies conducted, the Law No. 6360, which is the subject of the study, has negatively affected Söğütlü and Yıldızlı neighborhoods. With the many changes brought by the Metropolitan Municipality Law No. 6360 examined within the scope of the study, the jurisdiction has expanded to the provincial borders, and villages have become a neighborhood of the city. The rural areas that were most affected by this situation were especially the places that were closed while they were town municipalities.

The most basic negative aspect is that while accessing the service from the closest, local, centralization has made it difficult to access the service. However, in the places that change from village status to neighborhood status within the scope of the law, the authority to make plans and approve them is also left to the metropolitan municipalities. This situation causes the rural areas to be opened to settlement with the pressure of the density experienced in the city center and the rural-urban periphery that provides the rural-urban balance to disappear or become undefined. The most concrete examples are the changes in land use in the Söğütlü and Yıldızlı neighborhoods examined within the scope of the study, which take the pre-2012 and post-2023 references, and the progress of the rural-urban line indicated on the satellite image to the rural area. Rural settlements that are under such pressure not only undergo spatial change but also are negatively affected socio-culturally.

The fact that those who had a certain local lifestyle and relations while being a rural settlement are suddenly surrounded by site-style settlements, the fact that the rural area has different land use patterns (production,

storage, etc.), and that they live together with people of different economic levels also cause negative changes in demographic and socio-cultural terms. When all these results are considered, it becomes clear that legal and administrative changes should be reviewed, master zoning plans should be reconsidered in the context of rural-urban balance, and plans that guide spatial development and define the rural-urban line well should be produced. Because rural areas should be protected and kept alive with their natural and ongoing socio-cultural characteristics.

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# **Examination of The Urban Planning Concept Offered By The Concept of Landscape Urbanization**

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## ABSTRACT

The context of the city and landscape describes a very broad, multi component, multi-cultural environment. For this reason, landscape is a very probable concept within the city.

Landscape, which was perceived as an urban park in the past, is today defined with a system understanding that includes the city. The same understanding of change and transformation is also experienced in the context of urban planning. In urban planning, instead of only the traditional physical planning understanding, there is an on-site analytical and system planning understanding. Landscape, which is thought to be integrated into the city in planning, is now considered as a system that needs to be solved in the entire planning process and in its entirety. The new concept supporting this understanding is landscape urbanism. In the study, the urban planning understanding offered by the concept of landscape urbanism will be discussed.

*Keywords – Urban, Landscape, Urban Planning, Landscape Urbanism.*

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## INTRODUCTION

Today, the introduction of concepts such as climate change, sustainability, and biodiversity into the living environment has begun to force many needs to be encouraged in people's lives and the current state of cities. This has necessitated the emergence of new dimensions in both urban planning and urban design. This means that the cities we live in are not enough for those who live in them, and the quality of life gradually decreases day by day. This situation has caused cities to transform into a region-city form together with their surroundings, and the formation that emerged with the blurring of rural area boundaries has reduced cities full of natural areas on one side and buildings on the other to a patchwork state. A new urbanization model has been mentioned in Europe and especially North America for the last decade. This concept, which is 'Landscape Urbanism', has entered the urban studies literature as 'landscape urbanism'. The basic claim of landscape urbanism, which brings together two relatively opposite concepts such as landscape and urbanism, is; It can be explained as the management of urbanization and urban organization by the existing landscape, and the priority and determination of the landscape of the area in the structure-environment relations. Landscape urbanism is a discipline that aims to integrate natural, cultural and spatial values into urban planning by considering them important. This concept offers innovative solutions for cities to have a sustainable structure by preserving the balance between nature and humans. What distinguishes the concept from the traditional

urban planning approach is that it considers the landscape as a system and evaluates all the natural and artificial components that shape this system together in urban planning. This situation can actually be seen as a starting point for cities that have become patchy with the fragmented urban planning approach. The study aims to examine the effects of the concept of landscape urbanism on urban planning and to examine how it will be a starting point.

## **TRADITIONAL PLANNING APPROACHES**

### **Physical Planning Approach**

Physical planning is an approach based on the principle that natural environment features are guiding in planning studies. The difference of the Physical Planning approach is that it has the decision-support adequacy that will ensure the sustainable use of plans made for all kinds of goals (Turoğlu, 2005).

Therefore, Physical Planning applications have the guiding feature in all plans made for different purposes. Because plans are made on a physical space, in line with certain goals, and the Physical Planning approach is based on the principle of ensuring that decision-making and type preferences are compatible with the natural features of the physical space to be applied. The importance of this approach is that it ensures that the decisions made for planning and the type preferences made are compatible with the natural environment conditions, do not cause resource losses, and have the characteristics of sustainable use (Turoğlu, 2005).

With these features, Physical Planning is an application that should not be ignored, in a sense, has an ecological planning logic and can be applied to all kinds of targets (Turoğlu, 2005). Features of physical planning Physical Planning basically covers the approach of realizing plans prepared for specific purposes by taking into account the physical environment conditions. This scope includes the following goals;

- Ensuring the sustainable use of natural resources,
- Ensuring that investments are economical,
- Not experiencing material and moral losses,
- Ensuring that plans and projects can be developed and alternatives can be produced,
- Ensuring equality in the use of social, economic and natural resources,
- Ensuring the protection-use balance of natural, cultural and historical heritage,
- Protection of natural life, flora and fauna species, population and distribution characteristics, (Turoğlu, 2005).

All of the data used in Physical Planning are types of data related to physical space, primarily geographical features of that space, as well as cultural values and other natural features.

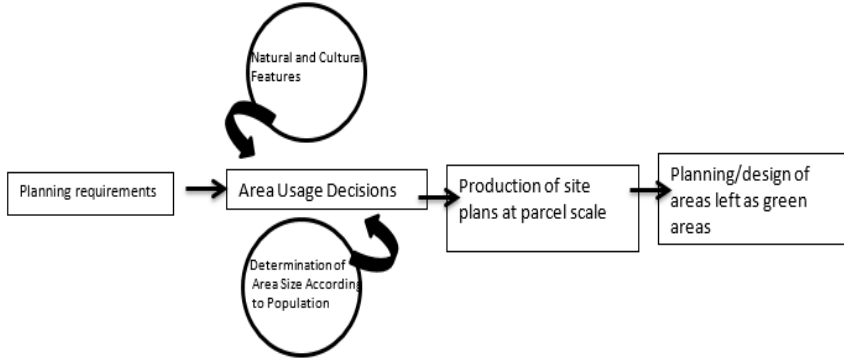


Figure 1: Physical Planning Process

### Landscape Planning

It refers to the whole of decisions taken for the future on the basis of organizing and arranging the space in order to ensure the sustainability of the landscape (Ahern, 1997; Motloch, 2001). In other words, landscape planning is the process of land use preference created on the basis of natural resources and social data (Steiner and Osterman, 1998). Landscape planning is an integral part of spatial planning together with land use and strategic socio-economic planning (Kozova and Finka, 2010). Landscape planning contributes to the integration of ecological principles into spatial planning. In this context, the suitability of the land for certain uses is questioned with landscape planning and the most appropriate land uses are determined (Çetinkaya et al, 2014). Landscape planning is an important planning tool that serves the protection of nature and the sustainable development of the resources that form the landscape at all planning scales.

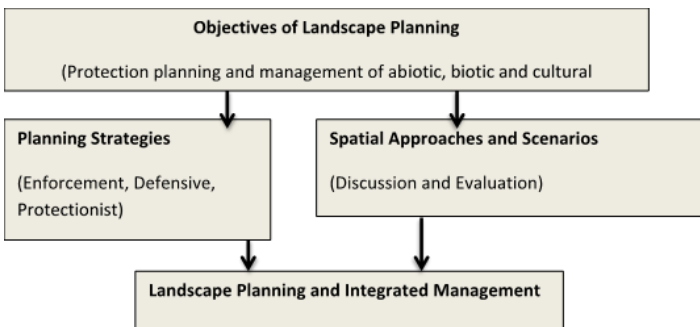


Figure 2: Scope of landscape planning

Within the scope of the landscape planning discipline, the traditional process is carried out as described in Figure 3.

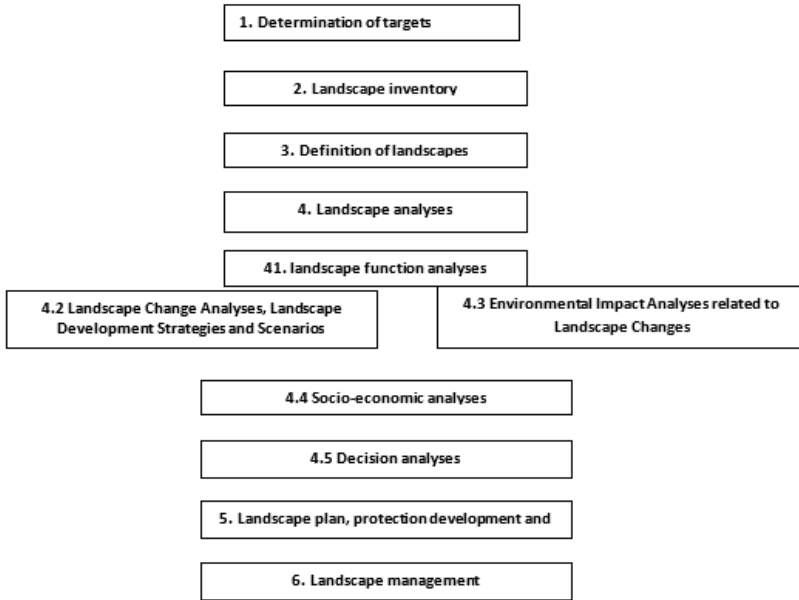


Figure3: Landscape planning process

### **Landscape Urbanism and Its Applicability at National Scale**

There are many urban design approaches developed to respond to the new needs of the changing urban environment as cities have exhibited dynamic movements such as growth, compression, shrinkage and even extinction throughout the historical process (Çabuk et al, 2013). Landscape urbanism emerged as a reaction to traditional design and planning that were inadequate in the planning and design of today's cities (Corner, 2003). Therefore, it has different and stronger discourses in many ways than the new urbanism approach that emerged in the early 1980s and is still used as a working approach today. The new urbanism approach, which is based on zoning with a gradually decreasing density from the center to the periphery, has proposed walkability, connectivity, mixed use, urban aesthetics, smart transportation and a sustainable environment (Scott, 2015).

In the theory of landscape urbanism, it is claimed that landscape architects' use of traditional tools while perceiving and analyzing the expanding city will provide a better reading of urban dynamics compared to architectural-based approaches and flexibility in responding to changing landscape and urban design programs in the process. This approach, which is

a criticism of postmodern urbanism that imposes certain rules and patterns on the city; aims to provide a strategic response that allows program changes in cities by associating landscape with key concepts such as 'uncertainty, open-endedness, flow, flexibility, complex and open systems'. One of the most important discussions about landscape urbanism is that this approach and the idea of creating ecological cities are not a new understanding and are already inherent in the nature of the profession of landscape architecture. It is true that, especially after the Industrial Revolution, contemporary landscape architecture approaches have inherently kept the concepts of ecology and sustainability at the center of landscape design and landscape planning.

Therefore, it is also discussed how accurate it is to present landscape urbanism as a new perspective. Along with these, it is also unclear how this understanding can be applied, and based on which criteria or indicators it can be concluded that a design or planning is created in accordance with the understanding of landscape urbanism. In fact, among the criticisms made, there is no clear definition of the concept of landscape urbanism and it is not understood what the innovation it brings is. According to another criticism, the number of projects described as landscape urbanism is quite low and is generally limited to design examples. In this context, the questions of what the concept of landscape urbanism envisages at the planning scale and how it will be implemented come to the fore (Çabuk et al, 2013).

Landscape urbanism was introduced as a concept by Charles Waldheim, a faculty member at Harvard University's Department of Landscape Architecture, in 1997. Among those who support and implement the concept are important names such as James Corner and Mohsen Mostafavi (Bingöl, 2017). These include the proposed project prepared for the transformation of the city of Detroit, the High Line Project prepared for the transformation of a section of an abandoned subway line in New York, and Fresh Kills, again prepared for the transformation of an old waste storage area in New York. Both the High Line and Fresh Kills projects include approaches that preserve cultural elements in the urban environment, while aiming for the natural system to become the dominant area in the long term.

Table 1: Projects created with the concept of landscape urbanism(URL1)



Along with these examples, the project prepared by Bernard Tschumi and Rem Koolhaas for the international design competition Parc de la Villette, located on an area of 35 hectares in Paris in 1982 and which won first place, is also described as one of the important building blocks in the theory of landscape urbanism.

## RESULTS AND DISCUSSION

In the world where the population living in cities is increasing day by day, the pressure of cities on rural areas is becoming a growing problem. The loss of the urban and rural balance and the return to a similar structure image all over the world brings with it ecological, economic and social problems. Thus, over time, urbanized areas turn into problem areas, which causes a

demand to leave problematic areas and move towards new settlement areas, causing the urbanization pressure to spread to all parts of the world. As seen in the literature and visual analysis studies conducted, the Law No. 6360, which is the subject of the study, has negatively affected Söğütlü and Yıldızlı neighborhoods. With the many changes brought by the Metropolitan Municipality Law No. 6360 examined within the scope of the study, the jurisdiction has expanded to the provincial borders, and villages have become a neighborhood of the city. The rural areas that were most affected by this situation were especially the places that were closed while they were town municipalities.

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The fact that those who had a certain local lifestyle and relations while being a rural settlement are suddenly surrounded by site-style settlements, the fact that the rural area has different land use patterns (production, storage, etc.), and that they live together with people of different economic levels also cause negative changes in demographic and socio-cultural terms. When all these results are considered, it becomes clear that legal and administrative changes should be reviewed, master zoning plans should be reconsidered in the context of rural-urban balance, and plans that guide spatial development and define the rural-urban line well should be produced. Because rural areas should be protected and kept alive with their natural and ongoing socio-cultural characteristics.



Table2: Projects created with the concept of landscape urbanism(URL1)



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# The Concept and Architecture of The Synagogue

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## ABSTRACT

Synagogues are sacred spaces that host Jewish worship and community activities. The Hebrew name for a synagogue translates to "house of assembly," and these spaces serve not only as places of prayer but also as centers for education, learning, and social interaction. Synagogues are not merely places of worship but also cultural and social hubs for Jewish communities. Educational activities, weddings, meetings, and various events are conducted within these spaces. Today, synagogues remain significant structures that preserve Jewish identity and heritage. Furthermore, throughout history, synagogues have interacted with the societies in which they were situated, reflecting the historical traces of these communities.

In Turkey, synagogues are typically located in cities with a dense Jewish population. The Ahrida Synagogue, constructed in the 15th century, is situated in the Balat district, while the Neve Shalom Synagogue, located in the Galata neighborhood, continues to serve as an active center of worship in modern times. Synagogues in Turkey not only function as places of worship but also contribute to the preservation of Jewish heritage and the representation of cultural diversity.

This study examines the synagogues in Turkey within their historical context, analyzing their architectural features and the transformations they have undergone over time, adhering to the chronological order of the periods in which they were established.

*Keywords – Synagogue, Architecture, Turkiye, Jewish, Religion.*

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## INTRODUCTION

Throughout history, Jews, who have existed in various geographies and have faced captivity in some places and exile in others, have also been present in the lands of Anatolia, now within the borders of the Republic of Turkey. Jews who lived in different regions of this geography for a long time built synagogue structures where they went as a reflection of their religious and cultural existence and to meet the needs of their way of life. Depending on their location and society, this architectural formation either aimed to remain hidden or serve as a public center open to the entire region. Jews who existed in Anatolia during the Byzantine period continued their presence during the Ottoman Empire, participating in different segments of society and actively participating in social life.

Although synagogues were initially arranged as places of worship, they evolved into social spaces serving the community—places where meetings

and discussions were held, banquets were given, and special occasions and ceremonies were conducted. This transformation is also reflected in the spatial characteristics of synagogue buildings, their architectural designs, and their positioning within the city.

Synagogue structures within Turkey's borders, belonging to different periods and plan typologies, have been examined chronologically. The changes in synagogue architecture from past to present, along with their design elements and plan typologies, have been analyzed.

## THE CONCEPT OF THE SYNAGOGUE

A synagogue is the name given to Jewish places of worship. Etymologically, it is derived from the Greek word "synagogue" (Türkoğlu, 2001). This word, meaning "gathering place," is formed from the roots "syn" (together) and "ago" (to bring) (Tuna, 2006). Another term used is "prosecute," which means "house of prayer" (Türkoğlu, 2001). When examining its functions, these structures were not only places of worship but were also accepted as spaces where the community's social needs could be met.

The origin of the synagogue dates back to the nomadic community's need to preserve the Ark of the Covenant, which led to the design of a gathering tent called a "tabernacle" (Ertürkmen, 2013). These structures had minimal spatial requirements, with the altar inside being sufficient for the necessary worship (Meek, 2003).

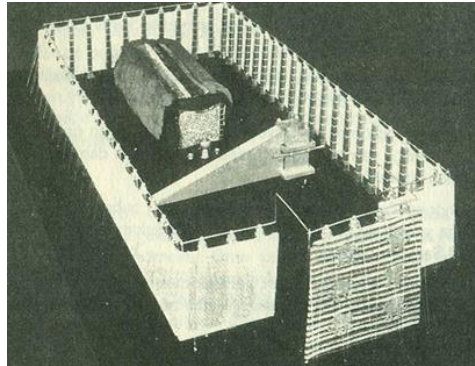


Figure 1. Model of Tabernacle (Tümer, 2004)

These structures became permanent after the transition from a nomadic to a settled lifestyle. When examining the historical process, it is observed that synagogue buildings had different characteristics in different periods. In his

study, Tuna (2006) categorizes these periods as sacred temple architecture, ancient synagogues (Second Temple synagogues), and medieval synagogues.

### ***The Sacred Temple***

Research shows that the first temple, built after the Tabernacle, was built in Jerusalem in the 10th century BCE. This temple, commissioned by Solomon, the son of King David, was like a stone version of the Tabernacle and took seven years to build (Tuna, 2006, Master's Thesis).

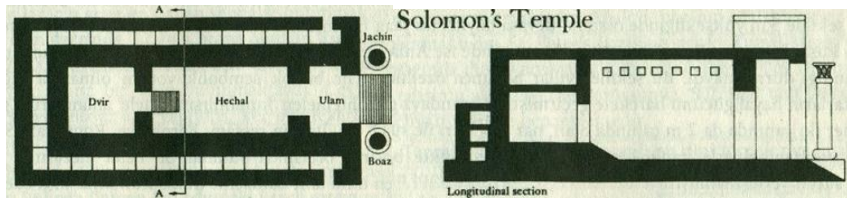


Figure 2. Plan and Section of Solomon's Temple (Goldhill, 2011)

When examining the plan organization of the structure, it is seen that it consists of three spaces: Ulam, Haehal, and Dvir. The Ulam is the outer courtyard accessible to everyone, where sacrifices are made. The columns on either side of the entrance are named Jachin and Boaz (cited from Öner, 2024, as per Scott, 1939). The Haehal, the second section of the structure, is where sacrifices and consecration ceremonies take place, and only the Levi and Kohen priests are allowed to enter (Tuna, 2006). The third section, Dvir, is described as the Holy of Holies, housing the Ark of the Covenant, which contains the tablets of the Ten Commandments, and the temple's treasures (Tuna, 2006).

### ***Sardis Synagogue***

Research indicates that the Sardis (Sart) Synagogue is the oldest synagogue in Anatolia (Schick, 1986). Studies on the structure suggest that its construction dates back to a time before the Common Era (Sönmezer, 2004, Master's Thesis). The synagogue was not built as a standalone structure but was part of the gymnasium complex (Figure 3). The complex measures 180x100 meters and combines various functions (Öner, 2024). The excavation findings are presented in Figures 4 and 5.

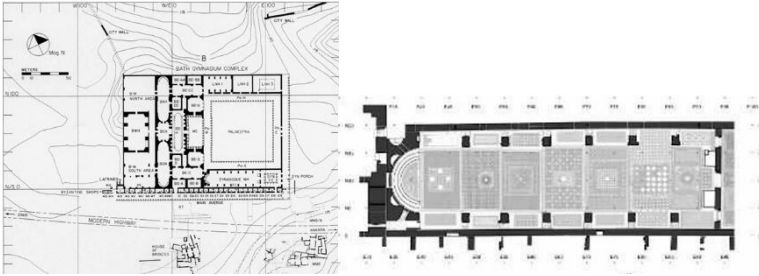


Figure 3. Gymnasium plan (top), Sardis Synagogue plan and floor mosaics (bottom) (Davidoff, 2018)

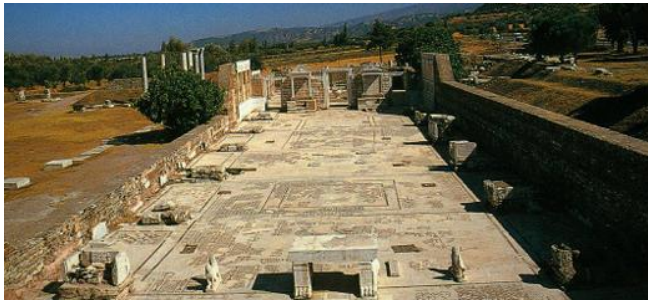


Figure 4. Worship section of the structure (Meek, 2003)

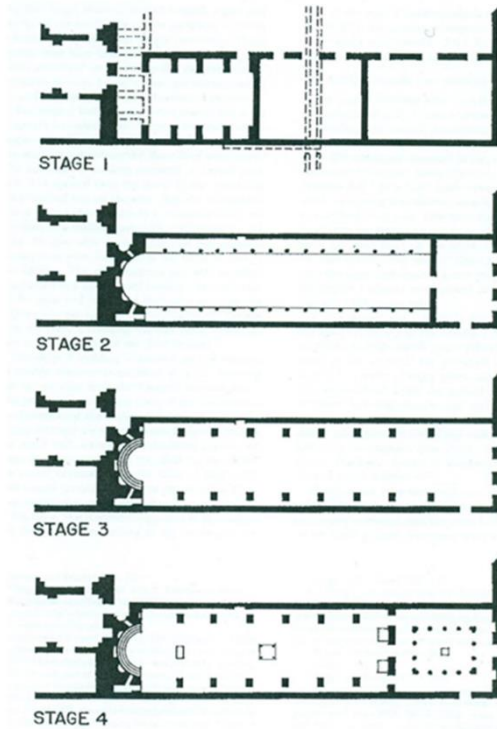


Figure 5. Different Phases of Sardis Synagogue Excavations (Magness, 2005)

When examining the plan characteristics of the structure, it is seen to have a courtyard and a central hall. The dimensions of the building are 85x20 meters (Ertürkmen, 2013). In the center of the courtyard is a fountain, and the area has three different entrances.

One key difference between early synagogues and temples is their purpose. While temples were used for religious rituals and ceremonies, early synagogues had a different function. These structures were used as communal centers where meals were shared and political discussions were held (Levine, 2000).

Despite the acceptance of Christianity during the Imperial period and the growing number of its followers, the synagogue in this region was not destroyed. In fact, it was seen as part of the city's cultural and architectural heritage, playing a significant role in its preservation (Davidoff, 2018). The fact that the structure was used as a place of worship and as a social space accessible to the public contributed to its survival. As a result, the synagogue became one of the largest of its time and was well-received in the area, avoiding destruction (Davidoff, 2018).



## *Ahrida Synagogue*

Located in Istanbul, this structure was founded by Jews who migrated from Ohri, a city in Macedonia, to Istanbul in the 15th century (Ojalyo & Akpınar, 2017). It is believed that the synagogue's name originates from that city (Kasaboğlu & Çiftçi, 2024). According to historical records, the synagogue was built before the conquest of Istanbul (Url 1). Today, it is located within the Balat district and is one of the synagogues that has survived to the present day. When examining the plan's organization, it can be seen that the structure has a centralized plan layout (Ertürkmen, 2013) (Figure 6).



Figure 6. Synagogue Centralized Plan Layout (Ertürkmen, 2013)

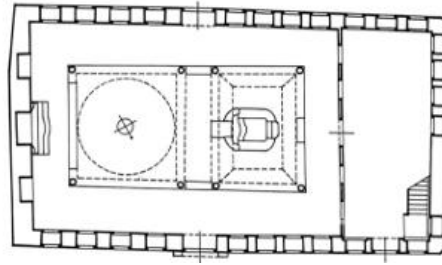


Figure 7. Ahrida Synagogue Plan Layout (Türkoğlu, 2004)

In terms of structural characteristics, the synagogue has masonry and plastered walls (Kasaboğlu & Çiftçi, 2024). During one restoration phase, it was documented that when the plaster was removed, the walls were revealed to be constructed with alternating layers of stone and brick (cited from Türkoğlu, 2001, as per Nitzan-Shifan, 1996). The facades of the building feature two rows of windows, each with a different form. The entrance to the single-story prayer hall is adorned with marble and decorative elements. The building has undergone numerous repairs and restorations over time, including a restoration in 1992, during which decayed wooden elements within the walls were replaced with reinforced concrete (Tayla, 1995). There are claims that the current structure was formed by merging two synagogues that once stood on the site (Url 1).



Figure 8. Images of Ahrida Synagogue (Kasaboğlu and Çiftçi, 2024)

The bimah (the platform from which the Torah is read) in the Ahrida Synagogue is shaped like the prow of a ship. This form is thought to reference either Noah's Ark or the Ottoman galleys that facilitated the migration of Jews from Spain to the Ottoman Empire (Url 1). Three steps to access the platform.



Figure 9. Bimah of Ahrida Synagogue (Url 2)

### ***Haydarpaşa Hemedat Israel Synagogue***

The synagogue, located near Haydarpaşa Station, was completed in 1899. The name "Hemedat Israel" was given to the building in honor of Abdulhamid II, who sought to restore order following social unrest during its construction (Güteryüz, 2014).

The synagogue's layout features a dual-focus plan, with the ark (Ehal) and bimah placed opposite each other (Figure 10).



Figure 10. Dual-focus synagogue plan (Ertürkmen, 2013)

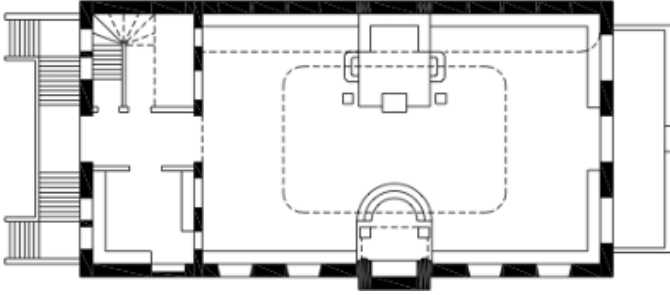


Figure 11. Haydarpaşa Hemdat Israel Synagogue plan (Tuna, 2006)

The synagogue has two entrance doors aligned along the north-south axis, while the Ehal and bimah are positioned along the east-west axis. A staircase on the south side leads to the women's section (Azara). Originally placed along a single wall, the Azara was later altered to form an L-shape (Niyego, 1999). The building is constructed of stone and brick, and archival records show that local neighbors assisted in the construction by supplying materials (Şen, 2006). Though the synagogue has only one main level, due to the terrain's slope, it appears as two stories from the southern side, where a basement houses storage and restrooms (Türkoğlu, 2001).

### *Neve Shalom Synagogue*

Built in the mid-1900s, the synagogues in the area became insufficient due to the increasing Jewish population in Galata and Beyoğlu (Url 3). The name "Neve Shalom" means "Oasis of Peace" (Güleryüz, 2014). The synagogue was designed by Elio Ventura and Bernard Motola, both graduates of Istanbul Technical University, and it opened its doors in 1951 (Url 3). The synagogue follows a basilica-style plan.

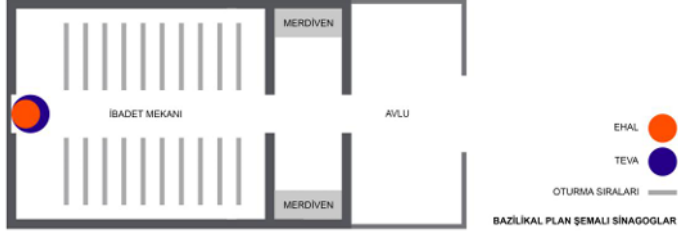


Figure 12. Basilica-style plan (Ertürkmen, 2013)

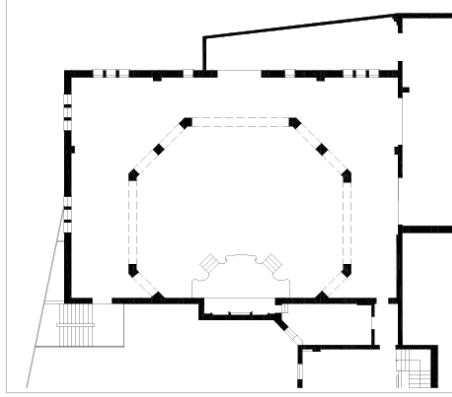


Figure 13. Neve Shalom Synagogue plan (Tuna, 2006)

The main rectangular worship area is centered around an octagonal section topped by a dome. The ark (Ehal) is semicircular and is located in front of the bimah. The women's gallery is also present in this synagogue. Besides the Ehal wall, the building's facade includes rectangular windows with stained glass (Türkoğlu, 2001).



Figure 14. Neve Şalom Sinagogu iç mekân görseli (Url 3)

## RESULTS AND DISCUSSION

Throughout history, Jews have built their places of worship with varying architectural styles, materials, designs, and functions, starting with the Tabernacle, which is considered their first temple. The design of these structures reflected not only the religious needs of the Jewish community but also the sociological and social context of the regions where they lived. When there was a need for discretion, the synagogues were built simply, but in other cases, they evolved into community centers used for worship, social gatherings, feasts, and discussions.

The bimah's ship-like design, the Sardis Synagogue's dual function as a religious and social space, and the changing plan layouts over time all reflect the cultural and historical influences on synagogue architecture. These transformations can be seen in the structural details and even the names of the synagogues, marking their adaptation to the times and places in which they were built.

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# **Environmental Sensitivity and the Effect of Education Levels and Profession <sup>1</sup>**

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## ABSTRACT

It is known that socio-economic status is effective on the concepts of environmental awareness, attitude and sensitivity. For this reason, in this research, the awareness, attitude and sensitivity of the people living in Tekirdağ city centre towards the environment according to their educational status, occupation and age will be revealed numerically. This study constitutes a part of a research project for the measurement of environmental awareness in Thrace. For this purpose, a questionnaire was applied to 502 people by face-to-face interview method in Tekirdağ province. The results were analysed by SSPS and ANOVA programme. The 'environmental awareness', 'environmental attitude' and 'environmental sensitivity' values of the respondents were questioned according to their education, occupation and age. Environmental sensitivity in Tekirdağ province was found to be at 'medium' level.

*Keywords – Environmental Awareness, Education Level, Occupational Effect, Tekirdağ, Environment*

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## INTRODUCTION

The environment has become more important for all living things. The continuity of life has become a concern due to the increase in environmental problems. Since the 21st century, the world has changed and developed rapidly, and the effects of globalisation on human and environment have started to reach serious dimensions. In this changing world, due to the deterioration of environmental problems, the relations between nature and human beings have started to change. It is vitally necessary to develop environmental awareness, which is defined as 'understanding the importance of careful use of the individuals who make up the society in order to cause the least damage to the environment and to make it sustainable'. In line with this consciousness formed in individuals, the reactions they show to prevent or reduce environmental problems, that is, environmental attitudes, should be constantly kept on the agenda. Within the framework of the consciousness formed and the behaviours shown, how the problems with proven or unproven effects on the environment and nature over time are perceived by the public, the discomfort of the public, and the reactions they show can be defined as environmental sensitivity. The concepts of environmental awareness and sensitivity differ according to individuals and socio-economic structures of individuals. Determining the environmental sensitivity of individuals and different socio-economic and cultural groups and taking measures to improve it as a result of this determination will directly or indirectly create some benefits. Environmental awareness, attitudes and sensitivity of individuals are important because they

will prepare the basis for the establishment of environmental policies in which they will gain functionality.

Değirmenci (2020) emphasised that today, problems such as global warming and melting of glaciers, environmental damage caused by wastes, destructive damage to nature by individuals who make up the society, environmental awareness and environmental commitment are important topics in revealing the sensitivity of society on environmental sensitivity.

### **Study Area And Method**

Tekirdağ city centre constitutes the research area. The region where Tekirdağ province is located is under environmental pressure from intensive land use, industrialisation and agriculture. For this reason, it was carried out to determine the sensitivity of the people living in Tekirdağ province to the environment according to their occupation and education status.

For this purpose, 502 questionnaires were applied in Tekirdağ province by face-to-face interview method. The results were analysed by SSPS and ANOVA programme. In the questionnaire, 'environmental awareness', 'environmental attitude' and 'environmental sensitivity' values were questioned according to the occupation and education status of the individuals.

It was applied by asking questions about the environment to the people living in Tekirdağ city centre. The data obtained were evaluated in the SPSS programme and analysed by ANOVA (Yucel et al., 2003; Yucel et al., 2006a; Yucel et al., 2006b; Mansuroglu et al., 2008; Yılmaz & Yılmaz, 2016; Yılmaz & Yılmaz, 2017).

In the study, the questionnaire questions and analysis method used by Yucel et al (2006b).

In determining the sample size, Arkin and Colton's minimum number of 400 subjects with a 5% margin of error for a population over 100,000 was taken into consideration (Pulido San Roman, 1972).

## **FINDINGS**

Characteristics of Tekirdağ people participants in the survey are given in Table 1. In table 1, according to the gender variable, 264 (52.6%) of the people are male and 238 (47.4%) are female. According to the age variable, 20 (4,0%) of the people are 18 years old and younger, 168 (33,5%) are between 18-24 years old, 118 (23,5%) are between 25-30 years old, 112 (22,3%) are between 31-40 years old, 57 (11,4%) are between 41-50 years old, 27 (5,4%) are over 50 years old.

According to the marital status variable, 218 (43,4%) of the people are married and 284 (56,6%) are single. According to the educational level of the people, 36 (7,2%) are literate, 54 (10,8%) are illiterate, 59 (11,8%) are primary school graduates, 24 (4,8%) are secondary school graduates, 79

(15,7%) are high school graduates, 38 (7,6%) are college graduates, 186 (37,1%) are university graduates, 26 (5,2%) are postgraduate graduates (Table 1).

Table 1. Characteristics of survey participants on Tekirdağ

Tables	Groups	Frequency (n)	Percentage (%)
Gender	Male	264	52,6
	Female	238	47,4
	Total	502	100,0
Age	18 Years and Under	20	4,0
	18-24 Years	168	33,5
	25-30 Years	118	23,5
	31-40 Years	112	22,3
	41-50 Years	57	11,4
	50 Years and Over	27	5,4
	Total	502	100,0
Marital Status	Married	218	43,4
	Single	284	56,6
	Total	502	100,0
Education Level	Literate	36	7,2
	Illiterate	54	10,8
	Primary School Graduate	59	11,8
	Middle School Graduate	24	4,8
	High School Graduate	79	15,7
	College Graduate	38	7,6
	University Graduate	186	37,1
	Postgraduate Degree Holder	26	5,2
	Total	502	100,0
Occupation	Unemployed	34	6,8
	Worker	14	2,8
	Civil Servant	48	9,6
	Retired	11	2,2
	Private Sector	106	21,1
	Shopkeeper/Tradesperson	52	10,4
	Student	229	45,6
	Farmer	8	1,6
	Total	502	100,0

The statistical analysis of the environmental awareness, environmental attitude, environmental sensitivity and education level of the people of Tekirdağ is given in Table 2. As a result of one-way analysis of variance (Anova) conducted in order to determine whether the mean environmental attitude scores of the people participating in the research showed a significant difference according to the education level variable, the difference between the group means was found to be statistically significant ( $F=2.518$ ;  $p=0.015<0.05$ ). A complementary post-hoc analysis was conducted in order to determine the sources of the differences. The environmental attitude scores of those with a postgraduate education level ( $66.667 \pm 14.623$ ) were found to be higher than the environmental attitude scores of those with a literate education level ( $57.685 \pm 16.133$ ). The environmental attitude scores of those with a secondary school education level ( $64.167 \pm 13.660$ ) were found to be higher than the environmental attitude scores of those with an illiterate education level ( $54.362 \pm 21.730$ ). The environmental attitude scores of those with a university degree ( $61.888 \pm 16.176$ ) were found to be higher than the environmental attitude scores of those with an illiterate level of education ( $54.362 \pm 21.730$ ). The environmental attitude scores of those with a postgraduate degree ( $66.667 \pm 14.623$ ) were found to be higher than the environmental attitude scores of those with an illiterate level of education ( $54.362 \pm 21.730$ ). The environmental attitude scores of those with a postgraduate degree ( $66.667 \pm 14.623$ ) were found to be higher than the environmental attitude scores of those with a primary school degree ( $57.194 \pm 16.437$ ). The environmental attitude scores of those with a postgraduate degree ( $66.667 \pm 14.623$ ) were found to be higher than the environmental attitude scores of those with a high school degree ( $59.269 \pm 15.383$ ). The environmental attitude scores of those with a postgraduate education level ( $66.667 \pm 14.623$ ) were found to be higher than the environmental attitude scores of those with a higher education level ( $58.333 \pm 13.608$ ).

As a result of the one-way analysis of variance (Anova) conducted to determine whether the average environmental awareness and environmental sensitivity scores of the people participating in the study showed a significant difference according to the education level variable, the difference between the group averages was not found to be statistically significant ( $p>0.05$ ).

Tablo 2. Statistical analysis of the education level of environmental awareness, environmental attitude, environmental sensitivity levels of Tekirdağ people

	Education status	N	Centre	Ss	F	p	Difference
Environmental consciousness	Literate	36	0,333	7,089	0,399	0,903	
	Illiterate	54	0,376	7,510			
	Primary School Graduate	59	9,119	6,621			
	Secondary School Graduate	24	9,578	5,366			
	High School Graduate	79	9,463	7,248			
	High School Graduate	38	8,162	9,405			
	University Graduate	186	9,827	7,876			
	Postgraduate Graduate	26	9,471	5,218			
EEnvironmental Attitude	Literate	36	7,685	16,133	2,518	0,015	> 1 > 2 > 2 > 2 > 3 > 5 > 6
	Illiterate	54	4,362	21,730			
	Primary School Graduate	59	7,194	16,437			
	Secondary School Graduate	24	4,167	13,660			
	High School Graduate	79	9,269	15,383			
	High School Graduate	38	8,333	13,608			
	University Graduate	186	1,888	16,176			
	Postgraduate Graduate	26	6,667	14,623			
Environmental Awareness	Literate	36	4,009	9,330	2,006	0,053	
	Illiterate	54	2,369	11,911			
	Primary School Graduate	59	3,156	9,152			
	Secondary School Graduate	24	6,872	7,578			
	High School Graduate	79	4,366	9,256			
	High School Graduate	38	3,247	8,698			
	University Graduate	186	5,857	8,709			
	Postgraduate Graduate	26	8,069	8,513			

The averages of environmental awareness, environmental attitude and environmental sensitivity levels of Tekirdağ people according to occupation are given in Table 3. As a result of the one-way analysis of variance (Anova) conducted to determine whether the mean environmental attitude scores of the people participating in the study showed a significant difference according to the occupation variable, the difference between the group averages was found statistically significant ( $F=5,388$ ;  $p=0,000<0.05$ ).

Tablo 3. Statistical analysis of the occupation level of environmental awareness, environmental attitude, environmental sensitivity levels of Tekirdağ people

	<b>Occupation</b>	<b>N</b>	<b>Ort</b>	<b>Ss</b>	<b>F</b>	<b>p</b>	<b>difference</b>
Environmental Awareness	Unemployed	34	69,871	7,136	0,468	0,858	
	Workers	14	66,422	7,904			
	Officer	48	69,617	7,580			
	Retired	11	69,306	3,390			
	Private Sector	106	69,497	7,811			
	Trades	52	70,075	6,550			
	Student	229	69,808	7,592			
	Farmer	8	68,241	7,632			
Environmental Attitude	Unemployed	34	58,399	17,891	5,388	<b>0,000</b>	<b>3 &gt; 2</b> <b>7 &gt; 2</b> <b>1 &gt; 4</b> <b>3 &gt; 4</b> <b>6 &gt; 4</b> <b>7 &gt; 4</b> <b>3 &gt; 5</b> <b>7 &gt; 5</b>
	Workers	14	53,175	16,480			
	Officer	48	64,699	13,387			
	Retired	11	44,950	30,862			
	Private Sector	106	54,308	16,922			
	Trades	52	59,551	13,689			
	Student	229	62,974	15,664			
	Farmer	8	58,194	8,646			
Environmental Sensitivity	Unemployed	34	64,135	11,415	4,825	<b>0,000</b>	<b>3 &gt; 2</b> <b>7 &gt; 2</b> <b>1 &gt; 4</b> <b>3 &gt; 4</b> <b>6 &gt; 4</b> <b>7 &gt; 4</b> <b>3 &gt; 5</b> <b>7 &gt; 5</b>
	Workers	14	59,798	9,569			
	Officer	48	67,158	7,639			
	Retired	11	57,128	15,251			
	Private Sector	106	61,903	9,620			
	Trades	52	64,813	7,911			
	Student	229	66,391	8,549			
	Farmer	8	63,218	7,212			

Complementary post-hoc analysis was performed to determine the sources of differences. The environmental attitude scores of those whose occupation was civil servant ( $64,699 \pm 13,387$ ) were higher than the environmental attitude scores of those whose occupation was labourer ( $53,175 \pm 16,480$ ). The environmental attitude scores of those whose occupation was student ( $62,974 \pm 15,664$ ) were higher than the environmental attitude scores of those whose occupation was worker ( $53,175 \pm 16,480$ ). Environmental attitude scores of the unemployed ( $58,399$

$\pm 17,891$ ) than the environmental attitude scores of the retired ones ( $44,950 \pm 30,862$ ) The environmental attitude scores of those whose occupation was civil servant ( $64,699 \pm 13,387$ ) than the environmental attitude scores of the retired ones ( $44,950 \pm 30,862$ ) were found to be high. Environmental attitude scores of tradesmen ( $59,551 \pm 13,689$ ) than the environmental attitude scores of the retired ones ( $44,950 \pm 30,862$ ) was found to be high. Environmental attitude scores of those whose occupation is student ( $62,974 \pm 15,664$ ) than the environmental attitude scores of the retired ones ( $44,950 \pm 30,862$ ).

### **Conclusion And Evaluation**

It is vitally necessary to develop environmental awareness, which is defined as the understanding of the importance of careful use of the individuals who make up the society in order to cause the least damage to the environment and to make it sustainable. In this study, the environmental attitudes of Tekirdağ people, especially according to their occupation and education, were evaluated in line with this consciousness, that is, their reactions to prevent or reduce environmental problems. Environmental problems should be kept on the agenda continuously. Within the framework of the consciousness formed and the behaviours shown, how the problems with proven or unproven effects on the environment and nature over time are perceived by the public, the discomfort of the public, and the reactions they show can be defined as environmental sensitivity. The concepts of environmental awareness and sensitivity differ according to individuals and socio-economic structures of individuals. In particular, it will be useful to determine the environmental sensitivity of individuals according to their occupation and education status and to take measures as a result of this determination. The environmental awareness, attitude and sensitivity of individuals is important as it will prepare the basis for the establishment of environmental policies that will gain functionality. As a result, it was determined that Tekirdağ people are at a medium level in terms of environmental awareness, attitude and sensitivity in terms of education and occupation.

Socio-economic characteristics also affect environmental behaviours. These effects are given in detail in the findings section. According to these results, strategies related to environmental awareness, attitude and sensitivity should be developed. Targets should be set for each education level, for example, students should be given practical courses on environmental issues.

Professions are also a topic that affects environmental awareness. Professions may have different levels of knowledge on environmental issues. Especially women can be given more duties in the studies to be carried out for zero waste.

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# **Determining the Sufficiency Levels of Urban Equipment Elements: "The Case of Rize"<sup>1</sup>**

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<sup>1</sup> This study is derived from the thesis entitled 'Determining the sufficiency levels of urban equipment elements'. The case study of Rize.

## ABSTRACT

The principal objective of this study is to ascertain the extent to which urban reinforcement elements contribute to the integrity of squares and streets, which are pivotal components of urban environments, and to elucidate their relationship with urban identity. The necessity of employing multiple approaches has been established, and it has been determined that a single approach will not suffice for the research to be conducted. In this context, the objective was twofold: firstly, to examine the urban reinforcement elements through on-site field studies; and secondly, to evaluate the adequacy of the reinforcement elements and those reflecting the identity in line with the deficiencies in the research area through a survey.

*Keywords – Urban Equipment Elements, City Identity, Rize City Center*

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## INTRODUCTION

In any landscape area or urban setting, the elements comprising products designated as service equipment and structures deployed for various open space functions to meet the evolving and changing needs of users, including comfort, information, circulation control, protection and entertainment, are collectively termed 'equipment elements' or 'urban furniture' (Anonymous, 1992; Erdoğan et al., 2011). The lack of requisite equipment in many cities is a significant impediment to their development. In our country, the facilities, which are divided into two categories—social and technical infrastructure—in the zoning legislation, are limited to specific sub-values according to various population groups by the same legislation. In the legislation, facilities pertaining to education, health, religion, socio-culture, administration and green areas are categorised within the social infrastructure group. Conversely, facilities associated with utilities such as electricity, gas, drinking and utility water, sewerage, transportation, communication and treatment, and open and closed car parks are classified within the technical infrastructure group (Mert and Yılmaz, 2009).

The various reinforcement elements that contribute to the city's liveability and perceptibility hold distinct meanings and importance for users and the locations in which they are situated. The visual and physical relationship that users establish with urban spaces is primarily facilitated by the aforementioned reinforcement elements. These elements are significant in defining spaces due to their defining, determining and customising qualities in relation to the environments in which they are located. When the reinforcement elements are handled in a specific sequence, they become among the most crucial instruments for shaping the city's identity, integrating with their surrounding context and establishing a coherent language through their interrelationships. It is therefore necessary to adopt

an approach that enables urban reinforcement elements to be treated as a design product, thus facilitating the establishment of appropriate relationships with each other and with the spaces in which they are located (Bayraktar et al., 2008; Erdoğan et al., 2011; Tarakçı Eren, 2018).

In addition to the cultural dimension of the reinforcement elements that can be associated with the identity of the city, there is also a physical dimension to these elements, including features such as scale, colour, material and form. It is essential that equipment elements with social, cultural and economic characteristics are designed in accordance with established standards and have functions that respond to the diverse needs of users. It is essential that equipment elements are compatible with the location, size and meaning of the place where they are situated, reflect the character of the surrounding environment and provide psychological comfort to users (Yücel, 2006; Kesim and Eroğlu, 2001; Yıldırım et al., 2014; Düzenli et al., 2017). There is a lack of visual coherence in the urban furniture landscape, from refuse bins to seating groups, across both open green spaces and densely populated urban equipment. The unconscious selection of colour, material and system usage, as well as inconsistent designs, result in a significant waste of time (Erdoğan et al., 2011; Karaşah & Çelik, 2021).

A city can be defined as a set of social relations that reflect the totality of established relations in a society. Some urban locations can be defined as sites where cultural diversity coexists, where natural processes are engaged, where memories are preserved, where strangers are encountered, and where individuals can either overcome the crowd or choose solitude. The city's various locations offer a plethora of recreational opportunities, catering to the physical needs of individuals across all age groups. Such spaces permit participation in a range of activities, including physical pursuits, cultural activities such as artistic endeavours and community activities, as well as social activities that facilitate interaction with others. The character of the city is shaped by a multitude of factors, including its architectural structures, urban spaces, open green areas, and urban equipment elements, as well as the ways in which these elements interact with each other. The utilisation of urban equipment elements has a significant impact on the enhancement of urban quality of life. Accordingly, the quality and quantity of urban furniture are regarded as an indicator of quality of life in developed countries (Thompson, 2002; Emür & Onsekiz, 2007; Harvey, 2013; Karlner, 2017; Sarı, 2019; Baykurt & Kara, 2021).

For users to derive benefit from a place, it is essential that they derive satisfaction from the experiences they have there. The satisfaction of users is contingent upon the environmental conditions, which encompass the facilities that facilitate the efficient pursuit of recreational activities without inflicting social, psychological, or physiological disturbances within the designated recreation area. Furthermore, user satisfaction is influenced by

the personal characteristics of the users themselves, the characteristics of the recreation area in question, and the type of activities that are conducted within that area. It is therefore important to understand the reasons behind user satisfaction and dissatisfaction with the experiences they have in urban spaces, as this knowledge can inform strategies to enhance the benefits derived from these spaces and support more sustainable management practices (Uzun, 2005; Çetinkaya et al., 2015; Karaşah & Var, 2016; Baykurt & Kara, 2021).

In general, there are no controls or inspections in place to ensure the suitability and usefulness of the equipment used in the city. The equipment in the space impedes the efficient utilisation of the space by the users, and in some cases even dissuades them from utilising the space. From the perspective of the designer, the lack of controls and inspections makes it challenging to distinguish between successful and unsuccessful design elements. Without the ability to identify and correct shortcomings, designers may repeat mistakes, hindering the evolution of their designs. The underutilisation of spaces and facilities represents a financial loss for the local and central administration. Nevertheless, establishing the expectations and demands prior to utilisation and conducting post-use evaluation studies in these areas within the city can confer numerous benefits for users and designers alike. The identification and resolution of issues pertaining to the utilisation of the space, the enhancement of its efficiency through the determination of elements that will optimise its usage, the provision of informed decision-making through the evaluation of user perspectives, and the establishment of the relationship between budgetary constraints and the performance of the space will ensure that future space planning is informed by a user-oriented approach.

The principal objective of this study is to ascertain the extent to which urban reinforcement elements contribute to the integrity of squares and streets, which are pivotal components of urban environments, and to elucidate their relationship with urban identity. The necessity of employing multiple approaches has been established, and it has been determined that a single approach will not suffice for the research to be conducted. In this context, the objective was twofold: firstly, to examine the urban reinforcement elements through on-site field studies; and secondly, to evaluate the adequacy of the reinforcement elements and those reflecting the identity in line with the deficiencies in the research area through a survey. The objective of the research was to ascertain the adequacy levels of urban reinforcement elements (seating, covering, lighting, garbage bins, flower crates, signage, water features, public transport stops and artistic objects) in Rize city centre (squares and streets) and to determine whether these elements reflect the identity of the city of Rize.

## MATERIAL AND METHOD

The objective of the study was to ascertain the adequacy levels of urban reinforcement elements (seating elements, upper cover elements, lighting elements, garbage bins, flower/plant crates, sign and information signs, water elements, public transport stops, artistic objects) in the sampling areas (Rize Square, Kuyumcular Street, Square Park and two main streets integrated with the square) (Figure 1) in Rize city centre and to investigate the effect on urban identity. In accordance with the aforementioned objective, the principal focus of the study is on urban equipment and furniture deployed in urban outdoor spaces, specifically on the squares, streets, parks and avenues within the city centre of Rize. The supplementary material of the study comprises on-site photographs, maps and literature research conducted in the context of the data collected from a range of articles, books, magazines, theses, internet sources and other materials related to the theme of the study.

Photographic documentation was undertaken of the urban reinforcement elements identified within the study area. In order to ascertain the extent to which these reinforcement elements contribute to the urban identity and to evaluate their overall adequacy, a review was conducted of existing questionnaire forms, question patterns, and similar studies on the subject. Based on this review, a questionnaire form was prepared. In this context, survey questions were devised and presented to the public in order to obtain and evaluate their opinions about the urban reinforcement elements in Rize city centre. The questionnaire comprises 19 questions and four sections. The first section of the questionnaire is designed to ascertain the demographic characteristics of the respondents, including gender, age, and occupation. The second section is intended to evaluate the adequacy of the urban reinforcement elements in the research area by examining them separately. The third section comprises evaluation questions pertaining to Rize Square, Square Park (Tuzcuoğlu Memişağa Park), Main Street (Cumhuriyet and Atatürk Streets) and Jewellers Street (Historical Rize Bazaar) within the research area, as well as the reinforcement elements therein. These questions are based on user participation. In the second and third sections, respondents were invited to indicate their level of participation and sufficiency on a 5-point Likert-type scale, with scores ranging from 1 to 5. In accordance with the findings of the questionnaire, the existing urban equipment elements in the research area are to be examined in order to ascertain their adequacy, adopt their identity characteristics and compare them. The findings of the research were evaluated using computer software. Furthermore, the input of experts on the subject of the study was obtained through one-to-one interviews. In accordance with the findings, recommendations have been put forth to enhance the identity and urban character of the research area, thereby facilitating its prioritisation.

In preparing the questionnaire for the research, it was determined that approximately 400 questionnaires should be conducted in cases where the main mass size is 147,411, with a  $\pm 5\%$  margin of error and 95% confidence interval, in accordance with the method developed by Akten (2000). The surveys were initially planned to be conducted in person; however, due to the outbreak of the Coronavirus (Covid-19) in our country, it was necessary to employ both in-person and online survey methods. The online surveys were conducted using the Google Forms platform. A total of 420 individuals were surveyed using this method; however, subsequent evaluation led to the exclusion of the responses of 38 individuals, leaving a total of 382 responses included in the study.

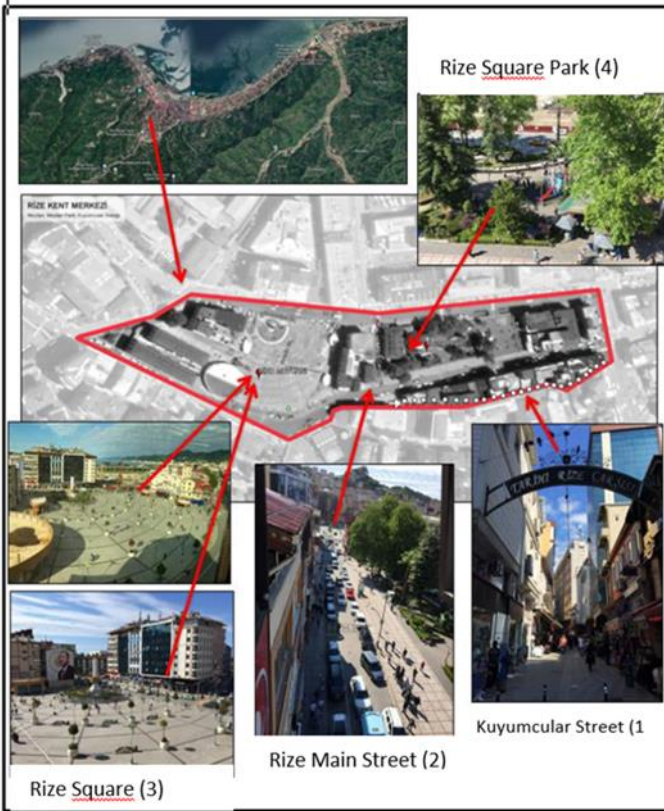


Figure 1. Study area

## FINDINGS

The objective of this study was to ascertain the adequacy levels of urban reinforcement elements situated in four locations in the city of Rize: Rize Square, Kuyumcular Sokağı (Historical Rize Bazaar), Meydan Park (Tuzcuoğlu MemiŞağa Park) and two main streets (Cumhuriyet and Atatürk

Streets). These locations are connected to the aforementioned city square, situated in the city centre of Rize and on the main artery. This survey was conducted in two formats: face-to-face and online. Participants were randomly selected and provided with numerical information regarding their gender, age, education level, occupational types, and duration of residence in Rize. The survey revealed that 3.8% of respondents were between the ages of 15 and 20, 45.6% were between 21 and 35, 36.8% were between 36 and 49, 12.1% were between 50 and 64, and 1.1% were 65 or older. Of these age groups, 54.4% are female and 45.6% are male. Upon analysis of the survey participants in terms of their educational attainment and occupational categories, it becomes evident that a considerable proportion of them have obtained a university degree (65.4%). In terms of occupational types, the majority of participants were identified as civil servants (28%) and teachers (25.3%). Furthermore, 67% of the respondents indicated that they have been residing in Rize for a period exceeding 20 years (Table 1).

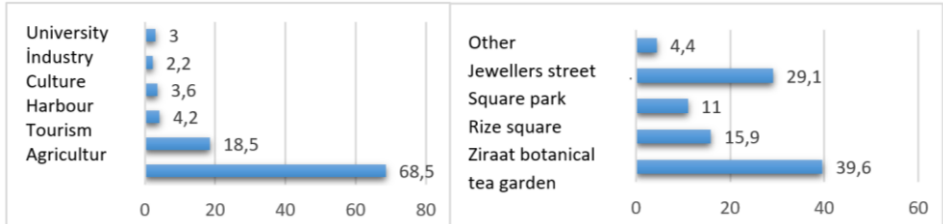
Table 1: The demographic status of the respondents is as follows

Gender	Percentage (%)	Percentage (%)	Percentage (%)	Age Range Percentage (%)	Education level Percentage (%)
Woman	54,4	0-14	0,5	Primary School	1,1
Male	45,6	15-20	3,8	Middle School	1,1
Profession		21-35	45,6	Lise	High School
Student	12,1	36-49	36,8	Üniversite	University
Unemployed	4,9	50-64	12,1	Postgraduate	17,6
Housewife	7,1	64+	1,1		
Pensioner	0,5	Life expectancy in Rize			
Labourer	5,5	0-5yıl	9,9		
Self-employment	8,8	6-10yıl	4,4		
Architect-Engineer	7,7	11-15yıl	9,3		
Officer	28	16-20yıl	9,3		
Teacher	25,3	20+ yıl	67		

In response to the question "What kind of urban character does Rize show?", 68.5% of participants indicated that Rize is an agricultural city, 18.5% stated that it is a tourism city, and 4.2% asserted that it is a port city (Figure 2). A further question was posed to ascertain the participants' perceptions of the city centre of Rize. This question invited them to identify the first place that came to mind when thinking of the city centre of Rize. The responses indicated that Ziraat Botanik Tea Garden was the most frequently mentioned location, with 39.6% of participants selecting it as their top choice. Jewellers Street (Historical Rize Bazaar) was the second



most popular choice, selected by 29.1% of participants. Rize Square was the third most frequently mentioned location, with 15.9% of participants selecting it as their top choice. Finally, Meydan Park was the fourth most frequently mentioned location, with 11% of participants selecting it as their top choice. These findings are illustrated in Figure 3.



Figures 2-3. This section presents the respondents' perceptions of the urban character of Rize and their views on the city centre.

Upon inquiry regarding the most common methods of reaching the city centre, 39.6% of participants indicated the use of private vehicles, 36.3% cited pedestrian transport, and 23.6% referenced public transportation. A review of the literature reveals that individuals tend to favour the use of private vehicles for transportation, with the choice of mode varying depending on the distance to be travelled. In situations where distances are relatively short, individuals may opt for walking or utilising public transport. The utilisation of private vehicles for transportation results in elevated vehicle density, congestion, and parking issues, particularly in urban areas. As a consequence of these factors, visual pollution and chaos arise in the city centre due to vehicle density. Upon inquiry regarding the purpose and frequency of visits to the selected areas within the city centre, 42.3% of participants indicated that they visited for the purpose of dining, shopping and leisure activities. 29.7% of respondents stated that they visited the city centre for other reasons. The participants were asked to indicate their place of residence in relation to the city centre. Of the respondents, 42.3% stated that they lived in residences located in the vicinity of the city centre. A further 17% indicated that they came to the city centre to meet with friends. The majority of respondents (41.8%) stated that they visited the city centre on a daily basis, while 35.7% stated that they came once a week (Figure 4).

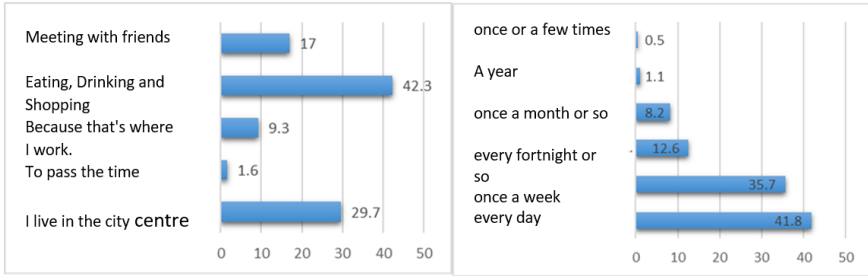


Figure 4. The respondents were asked to indicate the purposes and frequency of their visits to the city centre.

In response to the question 'What is the most intensively used area (with the highest human density) in the city centre?', 49.5% of the participants identified Main Street as the area with the highest human density, while 33% selected Jewellers Street (Historic Rize Bazaar) (Figure 5). The prevalence of food and beverage establishments, retail outlets, and shopping centres along Main Street contributes to the elevated human density in this area.

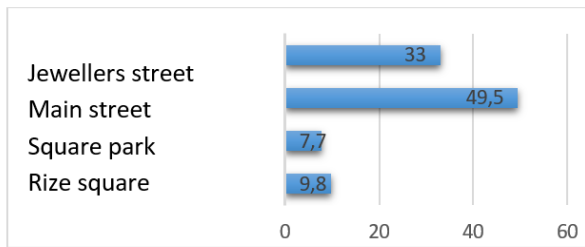


Figure 5. The most intensively used areas in the city centre

In response to the question 'Which area in the city centre has the highest level of pavement occupation in the use of open space?', 69.2% of respondents indicated Main Street, while 20.3% identified Kuyumcular Street. Conversely, respondents also identified Kuyumcular Street (0.5%) and Main Street (2.7%) as the areas with the lowest level of green space adequacy (Figure 6).

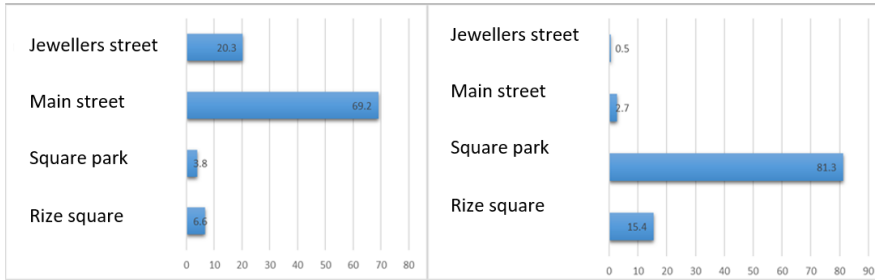


Figure 6. The participants expressed their opinions on the issue of 'Areas with high levels of pavement occupation and insufficient amounts of green areas in the use of open spaces in the city centre'.

The presence of food and beverage venues, shopping shops and shopping centres on the main street has created significant challenges for pedestrians, as vehicles are often parked on the pavements, obstructing their use. Concurrently, the integration of shop fronts with the pavement and the occupation of these areas without consideration for pedestrian use result in pavements being used for purposes other than their intended purpose, thereby rendering them inaccessible to users. The evaluations conducted by the participants regarding the adequacy of the equipment in the sample areas revealed that seating units, plant boxes, cover elements, water surfaces, and plastic objects/sculptures are present, albeit partially sufficient. However, the presence of insufficient plants, kiosks, stall units, boundary elements, garbage cans, sign/direction signs, and lighting elements was also noted.

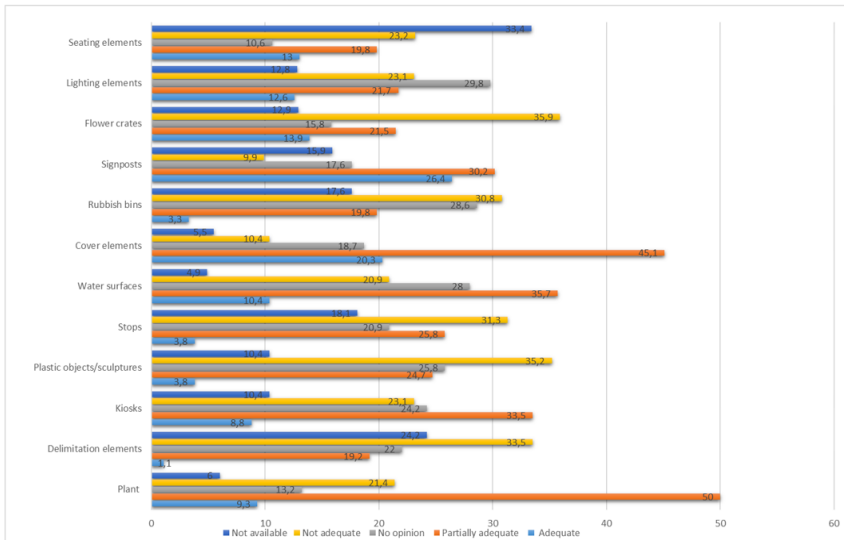


Figure 7. The participants were asked to evaluate the adequacy of the reinforcement elements in the sampling areas.

In their responses, they indicated that the lighting elements on Kuyumcular Street were insufficient, the flooring materials were poorly maintained, and the exterior facades of the buildings on the main street were poorly maintained. Furthermore, respondents identified deficiencies in the lighting elements on Kuyumcular Street, which they perceived as insufficient. Additionally, they highlighted the poor maintenance of flooring materials and the need for façade improvements on buildings along the main street. In terms of infrastructure, respondents noted the inadequate number of lighting units and garbage bins, the limited green space, the excessive amount of hard ground in Rize Square, and the insufficient number and size of plant boxes. Moreover, respondents identified a lack of reinforcement elements that align with the city's identity. Among the study areas, only the reinforcement elements in the square park are at a level that can meet the identified needs. This area is at the desired level with respect to the amount of green space (Figure 8). The study conducted by Sağlık et al. (2021) determined that the reinforcement elements and plant areas on Çarşı Street in Çanakkale city were inadequate in terms of both quality and quantity, and that the materials were poorly maintained. In their study, Kulekçi and Irmak (2019) posited that certain reinforcement elements have become inoperable due to comprehensive or partial destruction. Additionally, they asserted that some of these elements are incompatible with human health due to a multitude of ergonomic considerations, and that the quantity of these elements is inadequate.

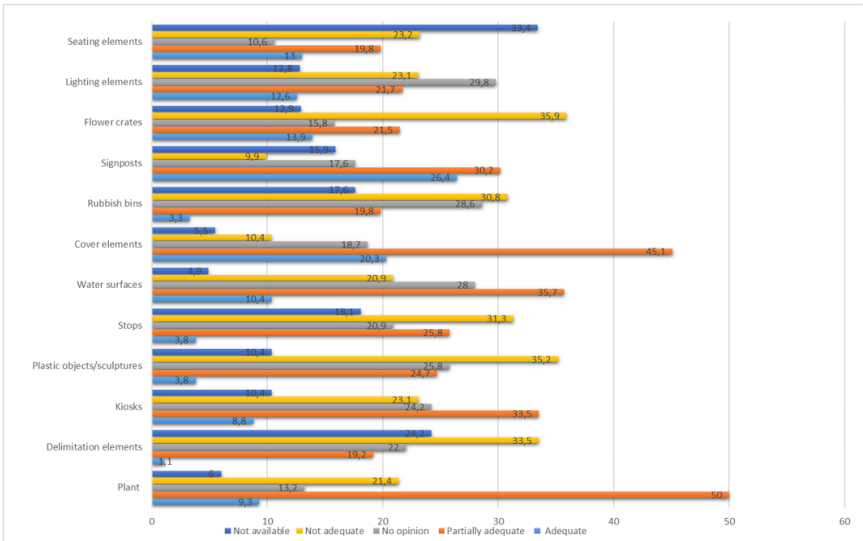


Figure 8. The participants' evaluations of the areas in the city centre revealed a number of concerns.

In particular, they highlighted that the reinforcement elements in the sample areas are not ergonomic, lack original designs, and are unable to reflect the identity of the city. Additionally, the reinforcements are not complementary in terms of material. The preference for these reinforcements is evident in their use of materials that deviate from natural materials. Their incompatibility with their surroundings, lack of aesthetic appeal, failure to consider anthropometric dimensions, imbalance in terms of size and proportion, and inability to accommodate disabled individuals highlight the shortcomings of these reinforcements. Moreover, the limited range of suitable reinforcement materials is insufficient to meet the diverse needs of urban environments. In their studies, Kuşkun and Yılmaz (2003), Bayramoğlu and Özdemir (2012), and Özgeriş (2018) found that urban reinforcement elements contribute to visual pollution on a busy street in the city. Furthermore, despite intensive use, some reinforcement elements are insufficient. The visual angle is not considered when placing reinforcement elements in the area, and the elements are unable to fully meet the identified needs. Additionally, the reinforcements lack a unified visual language, both in terms of material and design. Consequently, the city's identity is not effectively reflected.

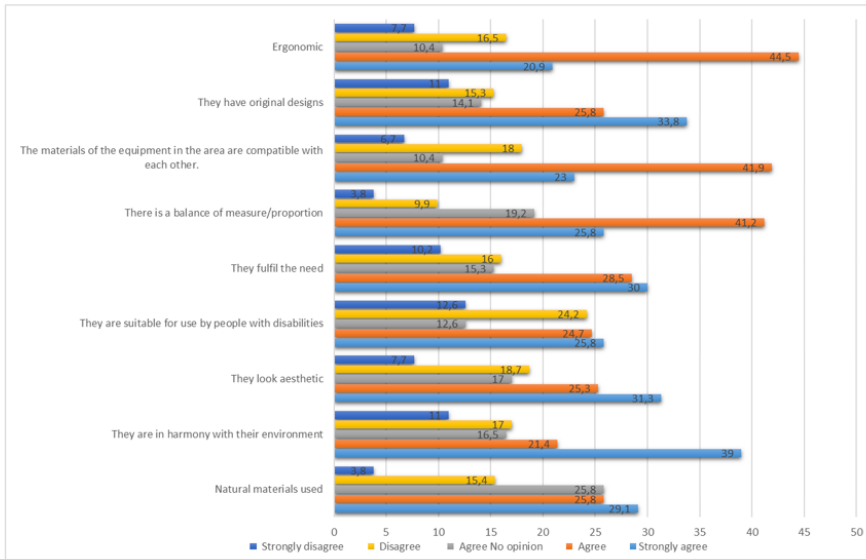


Figure 9. The participants were asked to evaluate the various equipment elements in the city centre.

With regard to their opinions on which of the equipment elements they liked, the respondents stated that they liked the lighting elements the most, with a rate of 59.3%. It is hypothesised that the effective factor in the emergence of this result is due to the use of designs that reflect the city identity more in the lighting elements used. Subsequently, the respondents

indicated their preference for garbage bins (28%), seating units (26.4%), signage and information signs (22%), flower crates (19.8%), water surfaces (11.5%), cover elements (10.4%), and plastic objects/sculptures (6%) (Figure 10) . A comparable outcome was reported by Bekar et al. (2017).

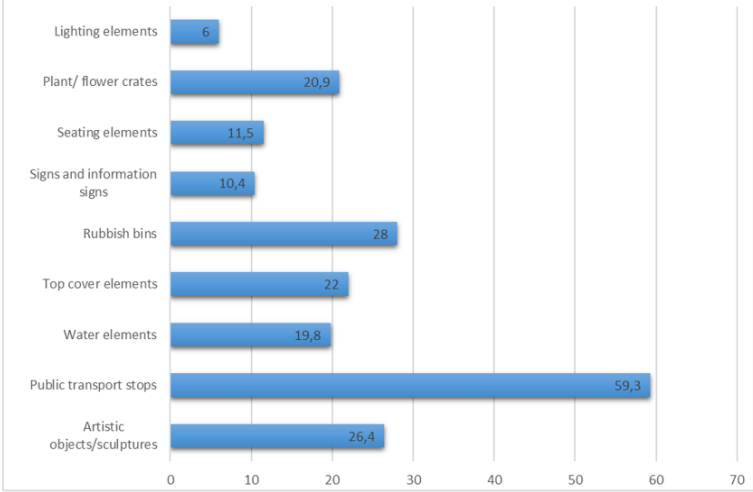


Figure 10. The participants' evaluations of their appreciation of the equipment elements in the city centre are presented herewith.

## RESULTS AND DISCUSSION

Furthermore, they are acknowledged as a constituent part of the human-vehicle-environment system and a cultural element. Conversely, as a component of the constructed environment, each element is characterised by a defining feature, a visual element for users and a symbolic meaning for the city. They constitute one of the most significant components of urban spaces, serving to imbue these with meaning, define their character, complement their form and enhance their utility in terms of both aesthetic appeal and functionality within the context of urban area usage. It is therefore essential that the reinforcement elements are sufficiently numerous, resistant to external factors, capable of fulfilling their intended function correctly, meet user expectations, and exhibit features that contribute to the urban identity, integrate and harmonise with the environment. This is the only way to create liveable environments. Furthermore, the reinforcement elements, which are susceptible to a multitude of external factors, must be situated correctly, in adequate quantities, and in a state of optimal maintenance. It is necessary that urban reinforcement elements exhibit a common language feature due to the functional similarities that they possess. As a consequence of this common language, the reinforcement elements are regarded as a means of continuity and integrity within the city, as well as identity elements that contribute to the liveability and perceivability of the city. As Özer et al. (2010) and Kuşkun and Yılmaz (2011) have previously asserted in their respective studies, the incorporation of reinforcement elements within urban design should be guided by a set of core principles. These include the necessity for such elements to possess both visual and symbolic features, in order to ensure the integrity of the city and enhance the perceptibility of spaces. Furthermore, the economic, ergonomic and environmentally conscious utilisation of these elements is of paramount importance. Urban reinforcements, which are one of the essential and defining elements of the city, should be clearly defined, utilized in appropriate locations, safeguarded against vandalism, meticulously maintained, and their beneficial impact on the urban environment should not be overlooked (Akyol, 2006).

The design of public and physical spaces within urban environments should be aligned with the physical dimensions and proportions of the human body. Ergonomic deficiencies in design result in the diminished functionality of public spaces and urban infrastructure. The most crucial aspect of urban equipment is that it is both visually and functionally appealing. It is recommended that these two features be present in all urban equipment elements. In this regard, the objective of utilising urban reinforcement elements is to ensure the provision of visual richness, durability, textural richness on surfaces, ease of maintenance and aesthetic values. Another crucial aspect of urban reinforcement element design is the elimination of discrepancies or the implementation of a unified solution to

potential issues stemming from these differences or habits. Consequently, these elements, which have been designed for general use, can serve the entire city in accordance with their intended purpose. The reinforcement elements, which play a significant role in the development, organisation and renewal of cities, also contribute to the spatial identity of urban areas. In order to enhance the liveability of our urban environment, it is essential that urban reinforcement elements are designed in accordance with the relevant standards, installed in suitable locations and maintained with due diligence.

In light of the data obtained from the questionnaire study conducted to determine the level of user satisfaction in the sample areas within the scope of the study, it was observed that seating units, plant boxes, cover elements, water surfaces, and plastic objects/sculptures are present and partially sufficient. However, it was noted that there is a lack of plant presence in these areas. Additionally, the presence of kiosks, stall units, boundary elements, garbage bins, sign/direction signs, and lighting elements was noted, but their quantity was deemed insufficient. It can be concluded that the lighting elements on Kuyumcular Street are insufficient and that the flooring materials are poorly maintained. It has been determined that the facades of the buildings on the main street do not align with the desired identity of the city and thus require improvement. Furthermore, the current provision of lighting units, garbage bins and green space is insufficient. In Rize Square, it was determined that the quantity of hard surfaces is considerable, the existing plant boxes are inadequate in both number and size, and there is a dearth of reinforcement elements that reflect the city's identity. The study identified that the equipment elements in the square park are at a level that can meet the needs, while the amount of green space in this area is at the desired level. It has been demonstrated that the equipment elements in the park lack both ergonomic design and an original aesthetic, and thus fail to reflect the identity of the city. Furthermore, it has been established that the equipment in the park lacks complementarity in terms of material. Instead of utilising natural materials, preference is given to alternative materials, which ultimately leads to confusion due to incompatibility with the surrounding environment. Furthermore, the aesthetic appeal of the fittings has been deemed unsatisfactory. Additionally, anthropometric considerations have not been incorporated into the design, resulting in an imbalance in terms of size and proportion. The fittings are not suitable for individuals with disabilities, and the limited number of suitable fittings cannot meet the required needs.

Upon consideration of all the reinforcements, it can be concluded that the most highly regarded in terms of usage is the lighting element, followed by garbage bins, seating elements, direction signs, stops and plant/flower crates. Nevertheless, it can be stated that these elements of equipment are not perceived as aesthetically pleasing. It is hypothesised that this is due to the



utilisation of standardised designs in contexts where such considerations are absent.

In his 2001 study on urban furniture in Istanbul, Bayazıt emphasised the necessity for urban furniture with diverse characteristics to reflect the unique identity of Istanbul and the importance of developing equipment that is specifically tailored to its distinctive character. Similarly, the findings of this study indicate a necessity for the implementation of urban furniture in Rize city centre that is in accordance with the existing environmental identity. The strategic deployment of specialised equipment, including plastic objects, sculptures, lighting, seating units, directional signage and plant/flower boxes, can serve to enhance the aesthetic appeal and cultural ambience of a given space. In order to ensure that a striking piece of equipment is properly integrated into its surroundings, it is essential that the surrounding area is also well-maintained and cared for.

In the study conducted by Sarı (2019), it was emphasised that the relationship between the need for activity and the space available in urban areas should be designed correctly, as this is a factor affecting user satisfaction. Concurrently, the studies conducted by Karaşah and Aşık (2021), Tarakçi et al. (2018) and Güneroğlu et al. (2024) indicated that the reinforcement elements in the research areas were inadequate, resulting in user discomfort. The study posited that the maintenance of structural landscape elements would contribute to the city in an ecological sense and enhance the degree of preference for the area. In this research, it was stated that the lighting elements were insufficient, the flooring materials were poorly maintained, the facades of the buildings on the main street did not align with the city's identity and required improvement, the lighting units and garbage bins were insufficient, the amount of green space was inadequate, the proportion of hard ground in Rize square was excessive, the existing plant cases were insufficient in number and size, and there were no reinforcement elements that reflected the city's identity. As a result of these unfavourable perceptions, the level of preference for these spaces was also found to be negatively impacted.

It is recommended that the reinforcement element be regarded as an art object in its own right. The aesthetic characteristics of the equipment element have the potential to define the character of the area. The choice of materials and design of equipment elements in city centres can contribute to the creation of a modern or rural ambience in the surrounding area. The style of an area is directly determined by the equipment elements that are present. The reinforcement elements in the city centre of Rize are of a kind that is ubiquitous, lacking in originality and failing to exhibit the characteristics of art objects. It can be observed that the reinforcement elements in the city centre have the effect of creating the impression of a rural area within the context of a modern city atmosphere. This is contrary to the effect that one might expect from a city, which should reflect the identity of the city in

question. It is essential that urban equipment is in accordance with the relevant standards, compatible with the surrounding environment and with other elements in terms of material and colour, providing integrity and a unique design. It is essential that the urban equipment interacts with the identity and integrity of the design, adds functionality to the area by supporting the activities carried out there, and is positioned in a way that makes the spaces created for people to rest, meet and chat meaningful. Furthermore, attention should be paid to the harmony of these spaces with the environment in terms of material, colour and design principles.

The following locations are worthy of note: Rize Square, Square Park (Tuzcuoğlu Memişağa Park), Main Street (Cumhuriyet and Atatürk Streets) and Jewellers Street (Historical Rize Bazaar).

- The seating units are not compatible with the materials used in terms of design, as they are not aligned with the desired aesthetic. From an aesthetic perspective, the designs lack city-specific characteristics that are harmonious with one another and the surrounding environment. In order to ensure an aesthetically pleasing and functional design, it is essential to consider criteria such as rhythm, balance and harmony when positioning seating elements. These elements should be placed in a way that does not impede pedestrian and vehicle circulation. It is essential that maintenance is conducted on a regular basis. It is essential that any broken or rusted components are duly repaired or replaced with new ones. This is significant in terms of maintenance, aesthetics and hygiene.
- While the lighting elements are in compliance with the design criteria set forth in the sample areas, they fail to establish a unified visual identity with the other reinforcement elements. The creation of design unity will result in a positive contribution to urban aesthetics.
- The current provision of garbage bins is inadequate in terms of both quantity and design. The presence of a variety of designs creates visual disunity and confusion, negatively impacting the perception of the city. It is essential that an adequate number of garbage bins are placed throughout the city, and that a city-specific design model is created to ensure visual unity and coherence. Furthermore, arrangements must be made to ensure the timely collection of garbage. In order to maintain the health and visual integrity of the city, it is necessary to renew garbage bins that have been neglected and affected by vandalism.
- It is recommended that bus stops be designed with the following features: a ticket sales point, an information desk, a waste bin and sales units. Such infrastructure should be designed in accordance with the specific urban context. It is essential that there is an adequate number of bus stops, which must be of an appropriate size.

Furthermore, the absence of comprehensive information signage at bus stops also impairs functionality. It is recommended that a signboard displaying the name of the bus stop and the timetable of the buses be placed at each bus stop. It is essential that sales units reflect the urban texture and identity of the area in question and that they are designed in harmony with the surrounding environment. It is recommended that seating benches and rubbish bins be integrated into the design of the sales units in a harmonious manner. The billboards lack a unifying design aesthetic, exhibiting a diverse array of colours, materials, dimensions, and textures. It is feasible to enhance the identification of all urban thoroughfares through the implementation of strategic planning and design measures within these infrastructure elements.

- It is important to ensure that the advertisement boards on the facades are arranged in an orderly manner. Furthermore, it would be prudent to implement legal regulations that impose a limit on the number of advertisement boards on building facades. It is recommended that only the advertisement boards of shops and sales stores be permitted on the facades, provided that they comply with the specified standards. It is recommended that advertisement boards on facades be positioned at the entrances of buildings.
- It is recommended that robust and durable materials with visual and aesthetic value be selected for use as floor coverings. It is imperative that any areas exhibiting signs of deterioration are duly repaired in a manner that does not endanger the safety of urban users or detract from the overall aesthetic appeal of the urban environment. The design should take into account the needs of disabled citizens.
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- In the context of urban design, the choice of appropriate details and materials is of paramount importance in the creation of aesthetically pleasing and functional commercial areas and plazas. Furthermore, consideration should be given to the aesthetic appeal of the equipment, which should be designed to be visually pleasing before it is used. It is essential that applications facilitate comfortable movement, respiration, visual perception, ambulation, halting, a secure relationship with traffic, straightforward navigation and the ease of reading signage within urban environments. These functional requirements should take precedence over aesthetic considerations, which may be of lesser importance. However, the perception of aesthetics in urban settings is not static and is influenced by the characteristics of the user group. This has a significant impact on the quality and character of the city. The character of urban areas and their reinforcement elements is shaped by a combination of natural and socio-cultural factors.

Consequently, urban reinforcements have a significant impact on urban aesthetics and identity. It is essential to consider the aesthetic and functional value, as well as the originality, of urban reinforcements throughout the entire design, use, maintenance and repair process. In order to ensure the aesthetic value and identity of urban reinforcements, it is essential that local governments collaborate and adopt a unified language with public institutions. However, in the context of the human-environment relationship in this area, it is necessary to create suitable spaces for people to perceive their surrounding environment and to meet their needs as a result of this perception. This study has highlighted the importance of urban facilities being designed not only to meet functional requirements, but also to support and harmonise the urban identity.

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# **Determination of Social Carrying Capacity in Protected Areas; “Sıklık Nature Park” Example<sup>1</sup>**

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<sup>1</sup> This study is derived from the thesis entitled Determination Of Carrying Capacity In Protected Areas; Sıklık Nature Park Example.

## ABSTRACT

The objective of this study is to ascertain the social carrying capacity of Sıklık Nature Park, which is situated in Çorum province and designated as a Nature Park in 2009. The study aims to establish a visit management model that will ensure the preservation and transmission of the natural and cultural values of the nature park to future generations, while considering the balance between protection and utilisation. A survey was conducted with 402 individuals to determine the Social Carrying Capacity (CSC). The questionnaire study sought answers to questions regarding the impact of activities on visitor perceptions of the park, the maximum capacity for visitors without compromising service quality, and the management's action plan for safeguarding the area's experience and sustainability. The study yielded data that informed the formulation of a sustainable visit management model and recommendations for rectifying the deficiencies identified in the nature park.

*Keywords – Natural Park, Physical Carrying Capacity, Social Carrying Capacity, Sıklık Natural Park, Çorum*

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## INTRODUCTION

In contemporary cities where the quality of life and diversity of design have increased, the economy has strengthened, sustainability and environmentalism have disappeared, and social balance has been effectively established, the management approach that does not lose its regional rather than global characteristic with the planning approach has increased day by day (Polat & Gül, 2007; Demir et al., 2011; Şolt, 2019).

The accelerating pace of these processes has led to heightened awareness of human-induced environmental degradation and the need for proactive protection measures (Şahbaz & Altınay, 2015). As these damages have increased, the importance of the concept of protected areas has continued to increase. The adverse environmental impacts occurring within and in the immediate vicinity of metropolitan city centres have hindered the effective functioning of the relationship between humanity and its environment. However, these developments have accentuated the necessity for the availability of open green areas and the importance of regional recreation (Akten, 2003; Eren, 2021).

The importance of areas where people can engage in recreational activities in open spaces during their leisure time underscores the significance of natural parks, national parks, and natural monuments. These areas, encompassing national parks and protected natural monuments, are conducive to recreational activities due to their cultural, historical, and topographical significance. (Sayan & Ortaçşme, 2005).

The enhancement of the economic status of nations, the augmentation and diversification of transportation infrastructure, and the preponderance of recreational and tourism pursuits in natural areas, parks, and protected environments have collectively resulted in a steady escalation in the number of domestic visitors. Intensive recreational activities and the diversification of tourism have had a detrimental effect on the quality of recreational resources. The changing texture is no longer able to respond to the demands, and there is a decline in the experience. However, the fundamental purpose of protected areas remains to protect natural and cultural resources, and to ensure their preservation for future generations (Göktuğ et al., 2013; Çorbacı et al., 2020).

The mounting pressure on protected areas, coupled with the inability to meet the demands of visitors, has given rise to challenges in the utilisation of these areas and the activities they support. There has been an increase in the number of visitors to natural places in recent years. The diversity of expectations is a dynamic phenomenon that is subject to change and must be taken into account in future planning. In the interim, human behaviour and preferences are also very important. In order to ensure a continuous and sustainable benefit in natural areas, it is necessary to examine the causes of the impact of human behaviour on the environment (Cengiz et al., 2008; Gül & Akten, 2005).

### ***The carrying capacity***

The concept of carrying capacity is defined as the resources available in a given region, which are then utilised to the fullest extent while taking into account the preservation and utilisation of these resources (Rüzgar, 2022). The term 'carrying capacity' is generally explained as a concept that expresses the limit of resistance, tolerance or endurance of an object, living thing or an environment against external factors by maintaining its functionality or quality (Göktuğ et al., 2013). In this context, the ongoing development of existing activities assumes significant importance for maintaining continuity. Recreational carrying capacity is defined as the level of use that users consider appropriate for a location without causing unacceptable damage to the biological and cultural assets of a recreation (Manning and Lawson 2002; Göktuğ et al 2013; Caner, 2018; Rüzgâr, 2022). The concept of carrying capacity in natural areas was first mentioned in 1922 with the Hadwen and Palmer Pasture Management Study (Manning and Lawson, 2002). This term is not limited to wildlife management, but has started to be used in recreation and tourism (McCool and Lime, 2001; Göktuğ et al., 2013; Caner, 2018).

The primary objective of recreational carrying capacity is to manage the maximum number of visitors, as determined by the management, in order to protect the physical environment and cultural values of a protected area by preserving its recreational opportunities. Recreational carrying capacity is a

multifaceted concept with a wide range of physical, social and ecological aspects (Sayan and Ortaçşme, 2005; Göktuğ and Arpa, 2016).

The evaluation of recreational carrying capacity is typically undertaken within the following four domains: Physical capacity, social capacity, ecological capacity and management capacity.

Social carrying capacity is a critical concept, representing the maximum visitor density that can be accommodated in a recreational area without compromising visitor satisfaction (Göktuğ et al., 2013). This capacity is instrumental in determining the level of crowd density and satisfaction levels that visitors can tolerate. When analysed in more depth (Göktuğ et al., 2013; Caner, 2018);

The present study seeks to establish the relationship between visitors' level of activity in the region and their perceptions of crowding.

Secondly, it is important to ascertain the effect that specific events have on visitors' perceptions of crowd density.

Furthermore, it is crucial to ascertain the maximum level of crowding that visitors can adapt to without experiencing any deficiency in the service quality offered by the region.

It is also crucial to consider the individual tolerances and preferences of visitors when formulating management strategies.

Furthermore, the optimal crowd level at which management should intervene is a crucial consideration.

Furthermore, the question of the management strategy to be implemented to ensure the preservation of both the visitor experience and the sustainability of the area remains to be addressed. The answers to these questions are vital for managing the social carrying capacity and maintaining visitor satisfaction.

The concept of physical carrying capacity is defined as the maximum number of visitors that can be accommodated within a designated area over a specified period, taking into account the existing infrastructure and facilities of a recreation area. This is of critical importance for the sustainability of a recreation area. A comprehensive assessment of the area's physical structure, facilities, and available amenities is therefore essential to determine this capacity. Determining this capacity is pivotal for management to enhance safety, comfort and visitor experience (Caner, 2018).

Ecological capacity represents a significant instrument utilised for the evaluation of the potential ramifications of activities undertaken within a designated recreation area on the natural ecosystem, in addition to the determination of the requisite measures for the sustenance of its management. Among the factors that should be examined under the concept of ecological carrying capacity, factors such as soil, vegetation, biodiversity, noise, etc. are of primary importance, and all of these factors are important parameters affecting the long-term environmental sustainability of recreation areas (Caner, 2018).

The concept of management capacity is evaluated within two key dimensions that are instrumental in the sustainable management of recreation areas. Administrative capacity is defined as the maximum number of guests or visitors that can be managed in a given space, and this refers to the ability to effectively manage the infrastructure, security measures, personnel and resources of the recreation area (Caner, 2018). The overarching objective of management capacity is to optimise the cost-benefit ratio through the most effective utilisation of a recreation area's resources. This necessitates a balanced management of income and expenditure, ensuring long-term financial sustainability. This two-dimensional approach provides a fundamental framework for the efficient management of recreation areas. High administrative capacity enhances the ability to provide a safe and organised visitor experience, while effective use of economic capacity helps to maintain sustainable financial resources. The harmonious integration of these two capacities fosters the positive contribution of recreation areas to the natural environment and society (Caner, 2018).

The objective of this study is to ascertain the social carrying capacity of the natural, cultural and recreational potentials of Sıklık Nature Park, which was designated a Nature Park on 08.07.2009 on the Çorum-Samsun highway in Çorum province. In the developing global framework, the conscious use and management of protected areas is becoming increasingly important on a daily basis. This situation plays a major role in strengthening not only the quality of life of the current generation, but also the living standards of future generations. The present study aspires to contribute to the existing body of knowledge by offering a comprehensive understanding of the value of protected areas from both an individual and societal standpoint. It is also envisaged that the study will serve as a valuable reference point for future academic research in this field.

## **MATERIAL AND METHOD**

The primary material of this study was constituted by Sıklık Nature Park, which is located within the geographical confines of Çorum province. The park, situated between 35°03'03.78"- 35°01'30.44' east longitude and 40°35'39.23"- 40°34'46.56' north latitude, is located 7 km from the city centre of Çorum and covers an area of 318 hectares (Figure 1). The park features two designated wildlife areas, which are designed to provide a habitat for diverse fauna, and a botanical area exhibiting 165 different plant species. A total area of 294.5 hectares of the 318 hectares of the Natural Park is composed of larch (*Pinus nigra*) and natural oak (*Quercus pubescens*) forests (DKMP, 2017 URL-12; Çelik, 2024).

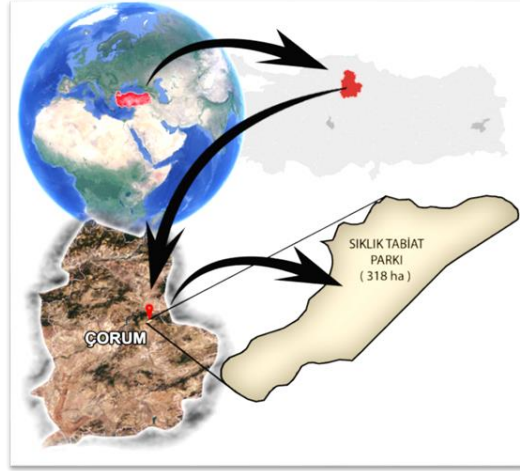


Figure 1. Location of the Natural Park (Çelik, 2024)

### ***Characteristics of Frequent Nature Park***

Sıklık Nature Park is located on the D795 motorway, which serves as the primary access route for visitors to the area. The motorway traverses the park's border in a direct manner. The topography of the region is characterised by a high degree of ruggedness. The average altitude of the Natural Park is 1063 metres, with Hırsız Tepe, situated in the northeast, reaching a maximum altitude of 1170 metres. The nearest and largest water source is Çorum Dam, which is located approximately 1 km west of the Natural Park, and the short, medium and long distance protection borders of the dam pass through the Natural Park. Çomudunözü Stream, a water source flowing towards Çorum Dam, traverses the northern section of the Natural Park. An analysis of the major groups of soils in the Natural Park reveals that Brown Forest Soils constitute 84.76 per cent of the area, while Brown Soils comprise only 15.24 per cent. The Natural Park is distinguished by the presence of soils classified as IInd, IVth, VIth and VIIth classes. Class II soils occupy 26.50 hectares (8.33%), Class IV soils extend to 52.85 hectares (16.62%), and Class VI soils encompass 52.31 hectares (16.45%). Conversely, class VII soils occupy a significantly larger area, encompassing 186.34 hectares (58.60%). The classification of ecosystem types was conducted using a hierarchical system based on the physical and floristic structure, climatic and topographical characteristics of the vegetation. According to this classification, the Nature Park is home to a single terrestrial ecosystem, which is further divided into two distinct components: open areas and a forest ecosystem. The area distribution of the Natural Park shows that 92.61% of the area is covered by the forest ecosystem, while 7.39% is covered by open areas. Within the study area, the forest ecosystem is dominant and hosts Larch and Degraded Oak species as vegetation cover.

The surveys revealed a total of 76 plant families, 214 plant genera, and 241 taxa within the area. In addition to this, the research carried out determined one endemic plant taxon of the study area and its immediate surroundings, known as *Muscari aucheri* (Boiss.) Baker (Arabian Hyacinth), to have a high probability of survival in the area and its immediate surroundings as a result of the analysis of habitat characteristics and past literature data. Consequently, the plant was incorporated into the endemic plant list of the region. The analysis of climatic characteristics revealed that the region experiences an average annual temperature of 10.9°C. The lowest recorded temperature was observed in January, while the highest was measured in August. The Çorum Meteorological Station has recorded an average rainfall of 35.84 mm and an average wind speed of 32.5 m/s. The Nature Park offers a variety of recreational activities, including cycling, tent camping, wildlife observation, nature walks, photography, orienteering and picnics. The park also features amenities such as garden seating groups, pergolas, a lakeside restaurant, a children's playground, sports fields, a mosque, and a washbasin (DKMP, 2017; Çelik 2024).

The study involved the administration of a survey to ascertain the social carrying capacity of the Sıklık Nature Park. To this end, participants were invited to respond to a series of questionnaire forms, which were distributed via digital channels. Additionally, questionnaire forms were meticulously designed to facilitate in-person interviews during the period in which the nature park was accessible to visitors. The target population for the questionnaire comprised individuals residing in the city of Çorum who were familiar with the park, as well as those residing in other cities for various reasons who visited Çorum and the aforementioned nature park at different times. According to data published by TURKSTAT in 2022, the population of Çorum is 524,130.

The formula developed by Akbulut (2021) was employed to determine the sample size.

The formula for sample size,  $n$ , is derived as follows:

$$n = (N \cdot P \cdot Q \cdot Z_a^2) / ((N-1) \cdot d^2)$$

$n$ : The sample size,

$N$ , is defined as the universe number of units.

$P$  is the observation rate of  $X$  in the universe.

$Q$  ( $P-1$ ) is defined as follows: Unobserved Rate of  $X$

$Z_a$ : 1.96 for  $\alpha=0.05$

$d$ : Sampling Error Accordingly;

$$n = 524.130 \cdot (0.5) \cdot (0.5) \cdot (1.96)^2 / 524.129 \cdot (0.05)^2 = 384,16$$

In the survey conducted to determine the social carrying capacity in the study, answers to the following questions were sought.

- What is the effect of certain events on visitors' perception of the crowd?

- What is the maximum crowd level that visitors can adapt to without experiencing any deficiency in the service quality offered by the region?

The question therefore arises as to how the individual tolerances and preferences of visitors can be taken into account.

Furthermore, it is crucial to ascertain the optimal level of crowding at which management should intervene.

Furthermore, the question arises as to what action plan the management should implement in order to protect the visitor experience and the sustainability of the site.

In order to ascertain the social carrying capacity of the area, responses to questions aimed at determining the adequacy of service quality and infrastructure, and visitor satisfaction are sought. It is hypothesised that the answers to these questions will be important in determining strategies related to the carrying capacity in terms of managing the social carrying capacity and maintaining visitor satisfaction.

The IBM SPSS Statistics 19 programme was utilised in the study to assess the reliability of the survey outcomes. Among the multiple reliability analysis methods applied, the most common one is Cronbach's Alpha test. The study's methodology stipulated the utilisation of a 95% confidence interval and a margin of error of  $\pm 5\%$ , necessitating the administration of 384 questionnaires. However, the study's findings are based on data collected from 402 individuals. The Cronbach's Alpha test was employed to analyse the reliability of the questionnaire, and the resultant value was determined to be 0.88. This finding indicates that the data obtained from the questionnaire is highly reliable. The questionnaire designed to assess social carrying capacity comprises five distinct sections. The sections under consideration comprise demographic information, recreation preferences, the adequacy of the spaces and equipment elements in the Natural Park, with a view to increasing the quality of recreation. In addition, the thoughts of visitors to the park about the park itself, their satisfaction, their experiences in the park and why they prefer this park are considered. The statistical analysis of the questionnaires was conducted using frequency analysis and  $\chi^2$  (Chi-Square) analysis, with SPSS 19 software being utilised for this purpose.

## FINDINGS

### *The present study set out to determine visitor satisfaction levels at Frequency Nature Park.*

Following the acquisition of the requisite permissions, the surveys were conducted to ascertain visitor satisfaction and the recreational facilities of the Sıklık Nature Park. These surveys were conducted on both busy and less busy days, with participants surveyed on days when they used the area (weekdays and weekends). The demographic data of the visitors was first obtained in the questionnaire study (Table 1). The results, as presented in



Table 1, reveal that 53.2% of the visitors identified as female, while 46.8% identified as male. Additionally, 52.2% of the visitors were single, while 47.8% were married. The age demographic of the visitors was further delineated, with 47.5% falling within the 26-39 age range, 24.6% within the 40-59 age range, 22.4% within the 18-25 age range, and 5% within the 60 and over age group. The data indicates that 3% of the sample are high school graduates, 23.1% are university graduates, 10.7% are secondary school graduates, 8% are college graduates, 7.5% are primary school graduates, 4.7% are postgraduate graduates, and 2.7% are literate. Table 1 also provides statistical data on the occupational distribution of the visitors, their income levels, where they reside, and the answers to the questions about how they became aware of the nature park.

Table 1: Demographic Data of the Participants

	<b>Variables</b>	<b>Percentage (%)</b>
<b>Gender</b>	Male	46,8
	Female	53,2
<b>Marital Status</b>	Single	52,2
	Married	47,8
<b>Age Group</b>	16-25	22,4
	26-39	47,5
	40-59	24,6
	60 -over	5,5
<b>Education Level</b>	Only literate	2,7
	Primary school graduate	7,5
	Secondary school graduate	10,7
	High school graduate	43,3
	Higher Education Graduate	8,0
	University graduate	23,1
	Postgraduate	4,7
<b>Profession</b>	Public	12,2
	Private sector	22,6
	Health	10,4
	Construction	8,7
	Housewife	21,6
	Pensioner	5,2
	Student	12,2
	Looking for a job	5,2
	Other	1,7
<b>Gelir Düzeyi</b>	0-6.000 TL	37,8
	6.001-10.000 TL	31,8
	10.001 TL -over	20,3
<b>Çorum'damı</b>	Yes	70,1

<b>yaşıyorsunuz?</b>	No	29,9
	Ankara	0,7
	Amasya	5,0
<b>Çorum'da yaşamıyorsanız hangi ilde yaşıyorsunuz?</b>	Samsun	3,0
	Tokat	2,5
	İstanbul	8,7
	Other	12,4
	Social Media	17,9
	Television	4,5
<b>Sıklık Tabiat parkından nasıl haberdar oldunuz?</b>	Friend Circle	39,8
	Brochure	3,5
	Other	34,3

The survey study revealed that 52.2% of visitors had previously visited the nature park. Furthermore, it was determined that 26.4% of visitors attend the nature park once a year, 25.9% once a month, and 21.6% once every three months, primarily during the summer (57%) and spring (29.4%) seasons, especially on weekends (66.2%) and public holidays (20.4%). The data indicates that the majority of visitors (49.5%) access the nature park in the company of family members, while a significant proportion (39.6%) opt for a visit with friends. Furthermore, the data reveals that the park attracts a considerable number of visitors (10 people or more, constituting 57.2% of the total) and a smaller yet notable segment (5-9 people, representing 35.1% of the total). The analysis further uncovers that the majority of visitors (63.9%) opt for private cars as their preferred mode of transportation, while a notable proportion (20.4%) opt for minibuses and similar public transportation options.

It is acknowledged that one of the pivotal factors in assessing the carrying capacity of a region or area is the duration of visits. In his study, Rüzgâr (2022) calculated the average time spent by visitors in the National Park to be 3.78 hours. In order to ascertain the duration of visits to the Sıklık Nature Park, participants were asked how many hours they spent on average there. The responses are outlined below: 45.8% responded 3-4 hours, 23.1% responded 5-6 hours, 7.7% responded 1-2 hours, and 4.2% responded 7 hours or more. The mean duration of these visits was calculated to be 4.05 hours. A comparison of these two studies indicates that the average visit duration for protected areas falls within the range of 3.5-4 hours (see Table 2).

Table 2: Sıklık Nature Park Recreational Status

	Variables	Percentage %	
Is this your first visit to the Nature Park?	Yes	47,8	
	No	52,2	
How often do you visit this nature park?	Once a week	4,0	
	Every 15 days	10,0	
	Once a month	25,9	
	Every 3 months	21,6	
	Every 6 months	12,2	
	Once a year	26,4	
On which days do you prefer to visit this nature park?	Weekdays	13,4	
	Weekend	66,2	
	Holidays and special occasions	20,4	
In which season do you prefer to visit this nature park?	Autumn	8,7	
	Winter	5,0	
	Spring	29,4	
How many hours do you visit on average?	Summer	57,0	
	1-2 hour	26,9	
	3-4 hour	45,8	
How many hours do you visit on average?	5-6 hour	23,1	
	7 hour over	4,2	
	Who do you prefer to visit the Nature Park with?	Family members	49,5
		Friends	39,6
Who do you prefer to visit the Nature Park with?	Tours and similar organizations	8,2	
	Alone	2,7	
	How many people visit this nature park, including you?	1-4	7,7
5-9		35,1	
10 over		57,2	

In the survey, visitors were asked to state the reasons for their preference for spending time in a natural area. The results indicated that 60.0% of visitors stated that they like to spend time in natural areas to explore nature, 46.3% to escape from the noise and stress of city life, 41.8% to spend time with friends and family, 39.1% for health, 30.2% for camping and 29.9% for adventure. A survey was conducted in order to ascertain the motivations of visitors to the nature park. The results revealed that the primary reason for visiting was to spend time with family or friends (61.2%), followed by picnicking (52%), getting fresh air and resting (46.3%), spending time in nature and walking (42.9%), observing fauna and flora (31.9%), camping (30.6%), and spending time with children (30.6%). A closer look at these results reveals that the reasons for spending time in

natural areas and the reasons for visiting the nature park are largely congruent. When respondents were asked to state the primary reasons for visiting the nature park, the most commonly cited factor was its proximity to their place of residence (38.8%). This was followed by picnic areas (19.2%), the presence of tranquillity and calm (16.9%), extensive forest areas (15.2%), camping areas (6.5%), and a zoo (3.5%). During their stay, the subjects reported that the park was quite crowded, but that this did not bother them (63.9%). Conversely, users who reported being disturbed by the crowd advocated for the implementation of user restrictions, citing various reasons. These included the need for ensuring silence (25.7%), the protection of natural habitats and species (24.9%), the prevention of environmental pollution (22.7%), the restriction of fair use rights regarding the usage rights of the nature park facilities (15.7%), and the inability to control the usage of these facilities (12.2%).

Visitors reported that they encountered no difficulties in parking within the confines of the nature park (67.7%), yet their overall experience was hindered by various factors. These included overcrowding, particularly on weekends (15.7%), a lack of designated activity areas (10.7%), and concerns regarding environmental pollution (9.0%). Visitors who expressed satisfaction with the activity opportunities offered by the nature park (83.8%) indicated that they could easily engage in activities such as picnicking (65.9%), cycling (64.9%), camping (64.8%), resting/getting fresh air/relaxing (61.2%), hiking (54.7%), and observing nature/taking photographs (48%) within the park. The adequacy of the activity areas and equipment elements offered within the nature park is evaluated in Table 3. The units that visitors would like to have or increase in number are evaluated in Table 4. The situations that prevent visitors from benefiting from recreational opportunities are evaluated in Table 5. The importance levels of areas and service units within the nature park are given in Table 6. Furthermore, when visitors consider all the opportunities the nature park has, they stated that they are satisfied with the rate of 52.5%.

Table 3: The adequacy of the service and equipment elements provided in the Nature Park.

	<b>Variables</b>	<b>Sufficient %</b>	<b>Partially %</b>	<b>Insufficient %</b>
	Car Parking	44,8	46,3	9,0
	Picnic units	39,1	54,2	6,7
	Campsites	37,3	52,1	10,2
	WC/Mesjid	36,6	52,7	10,7
<b>This study seeks to ascertain whether the equipment elements and activity areas present within the designated nature park are adequate.</b>	Cleaning units	34,6	54,2	11,2
	Rubbish bin	36,3	53,7	10,0
	Children's play and entertainment areas	37,8	53,7	8,5
	Activity areas for adults	33,3	56,7	10,0
	Security unit	33,8	56,0	10,2

Table 4: Units that you would like to be in Sıklık Nature Park or that you would like to increase in number

	Variables	Yes%	No%
	<b>What are the units and areas that the participants of this study would like to have in the Sıklık Nature Park, or that they would like to see increased in number?</b>	Car Parking	65,2
Buffet		70,4	29,6
Children's playgrounds		71,6	28,4
Scenic viewpoint		68,4	31,6
RING services to provide transport within the area		63,7	36,3
Directional and identification signs		63,7	36,3
Washrooms and prayer rooms		69,7	30,3
Camellia and seating units		65,4	34,6
Sports fields		63,4	36,6
Picnic stoves		66,9	33,1
Usage areas for people with disabilities		72,1	27,9
Local product sales and promotion places		57,0	43,0
Drinking water fountains		71,1	28,9

Table 5: Tabiat Parkının Sunduğu Rekreatyone İmkânlardan Yararlanmanızı Engelleyen Durumlar

	Variables	Evet	Hayır
		%	%
<b>What factors might preclude individuals from deriving benefit from the recreational opportunities available within the designated nature park?</b>	Lack of free time	<u>62,2</u>	37,8
	Transport difficulties	50,0	50,0
	Economic reasons	48,8	51,2
	Stray dogs in the area	49,0	51,0
	Poor maintenance of toilets and maşjids	<u>54,7</u>	45,3
	Inadequacy of electrical units	49,0	51,0
	Deficiency in reinforcement units	<u>51,7</u>	48,3
	Poor maintenance/cleanliness of picnic and seating areas	<u>54,5</u>	45,5
	Excessive sound and noise	<u>51,5</u>	48,5
	Lack of an active kiosk	<u>56,0</u>	44,0
	Garbage scattered and emitting stench	<u>53,2</u>	46,8
	Lack of directional signs	<u>55,0</u>	45,0
	Deficiency in the number of staff	<u>52,5</u>	57,5
	Lack of security	50,0	50,2

Deficiencies and poor maintenance on the roads within the area	49,5	50,5
Insufficient car parks	48,5	51,5
Poorly maintained and busy walking paths	<u>53,7</u>	46,3

Table 1: Importance levels of the areas and service units within the Sıklık Nature Park

Variables	Very Important	Important	Less Important	Unimportant
	%	%	%	%
Ease of transport	37,8	<u>54,5</u>	6,0	1,7
Size of the field	28,9	<u>61,4</u>	8,0	1,7
Sufficiency of forest areas in terms of quality and quantity	33,6	<u>59,2</u>	6,7	0,5
Having children's playgrounds	29,6	<u>58,0</u>	10,7	1,7
Having entertainment and activity areas	28,4	<u>55,5</u>	14,9	1,2
Having a zoo	22,1	52,0	19,2	6,7
Caravan camping area	24,1	<u>55,7</u>	15,4	4,7
Clean drinking water sources	37,6	47,3	13,4	1,7
Clean toilets and masjids	36,3	51,0	10,2	2,5
Hiking and footpaths	29,9	<u>54,2</u>	12,4	3,5
Having a bicycle path	24,4	<u>54,7</u>	15,9	5,0
Security of the area	33,3	51,2	11,9	2,5
Sufficiency of equipment units	30,8	44,4	10,4	3,2
Paid entrance to the area	91	221	64	26
Sufficient number of car parks	136	203	46	17

As demonstrated in Table 3, the current equipment and activity areas, including parking lots, picnic units, camping areas, toilets/mosques, garbage bins, children's play and entertainment areas, and activity areas for adults, are deemed sufficient. However, Table 4 details the additional equipment and areas that are proposed for inclusion in the nature park. An analysis of Table 4 reveals the presence of additional equipment and facilities that are deemed essential for the enhancement of the nature park. These include buffets, viewpoints, ring services to facilitate transportation within the area, guiding and promotional signs, pergolas and seating units,

sports areas, picnic pits, areas designated for disabled individuals, and designated areas for the promotion of local products. The analysis further indicates a strong preference for an increase in the number of parking areas, fountains, and children's playgrounds. Turning to Table 5, we observe the respondents' perspectives on the factors that influence their utilisation of the nature park and cause them discomfort. Of these views, the most prevalent is the lack of sufficient time to visit the area, with 62.2% of respondents indicating this as their primary concern. These were followed by the absence of sales units (56%), inadequate directional signs (55%), insufficient maintenance of toilets and prayer rooms (54.7%), inadequate maintenance/cleanliness of picnic and sitting areas (54.5%), inadequate maintenance and dense walking paths (53.7%), scattered garbage and foul smell (53.2%), lack of staff (52.5%), inadequate equipment units (51.7%) and noise pollution (51.5%). As illustrated in Table 6, which presents the importance levels of the areas and service units of the nature park, visitors indicated that the size of the nature park is of significance (61.4%). Furthermore, visitors asserted that the presence of service areas, including forest areas within the nature park, was adequate in terms of quality and quantity (59.2%), the existence of children's playgrounds (58%), a caravan camping area (55.7%), entertainment and activity areas (55.5%), a fee for entering the area (55%), a bicycle path (54.7%), and walking and hiking paths (54.2%), were all deemed to be of significance. The responses to the questions designed to assess visitor satisfaction are presented in Table 7, while Table 8 provides the responses to questions aimed at gauging their awareness of issues impacting the development of the nature park.

Table 7: What is Your Satisfaction Level with the Experiences You Obtained from Your Visit?

	<b>Variables</b>	<b>Percentage%</b>
Satisfied with my camping experience	Strongly Disagree	2,2
	Disagree	3,0
	Not sure	10,0
	I agree	48,8
	Strongly Agree	36,1
	Strongly Disagree	1,5
Satisfied with my picnic experience	Disagree	1,2
	Not sure	7,2
	I agree	57,0
	Strongly Agree	33,1
	Strongly Disagree	1,0
	The visual details of the nature park (landscape, camping environment, etc.) really attracted my attention	Disagree
Not sure		12,9
I agree		52,0
Strongly Agree		32,3
Strongly Disagree		1,2
Disagree		1,5
Not sure		9,2
I agree	60,4	

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	Strongly Agree	27,6
	Strongly Disagree	1,5
I enjoyed visiting the nature park	Disagree	2,2
	Not sure	14,7
	I agree	54,0
	Strongly Agree	27,6
	Strongly Disagree	1,0
All activities and areas in the nature park were very attractive	Disagree	3,7
	Not sure	11,9
	I agree	54,0
	Strongly Agree	29,4
	Strongly Disagree	2,5
I felt physically comfortable during my stay in the nature park	Disagree	2,5
	Not sure	14,9
	I agree	53,7
	Strongly Agree	26,4
	Strongly Disagree	1,7
	Disagree	3,2
	Not sure	13,7
	I agree	55,2
	Strongly Agree	26,1
	Strongly Disagree	2,0
I really enjoyed watching what other participants in the field were doing	Disagree	3,7
	Not sure	15,9
	I agree	51,2
	Strongly Agree	27,1
	Strongly Disagree	3,5
My visit here has been a real learning experience for me	Disagree	4,5
	Not sure	16,4
	I agree	52,2
	Strongly Agree	23,4
	Strongly Disagree	1,7
My visit here helped me to get away from all my troubles, even temporarily	Disagree	5,5
	Not sure	14,4
	I agree	51,5
	Strongly Agree	26,9
	Strongly Disagree	1,2
	Disagree	5,2
	Not sure	10,7
	I agree	55,5
	Strongly Agree	27,4
	Strongly Disagree	1,2
I met different people and I was satisfied with this experience	Disagree	4,2
	Not sure	11,7
	I agree	54,5
	Strongly Agree	28,4
	Strongly Disagree	1,7
The nature park is a safe place for me	Disagree	3,0
	Not sure	10,9
	I agree	57,5
	Strongly Agree	26,9
	Strongly Disagree	1,2
	Disagree	2,5
	Not sure	11,7

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I agree	56,7
Strongly Agree	27,9

Table 2: Awareness of the problems affecting the development of the nature park

	Variables	Yüzde %
General cleanliness of the facilities is sufficient	Strongly Disagree	3,0
	Disagree	5,5
	Not sure	14,4
	I agree	53,2
	Strongly Agree	23,9
The variety of food and beverage services in the accommodation facility and restaurant is sufficient	Strongly Disagree	3,7
	Disagree	7,0
	Not sure	15,2
	I agree	54,5
	Strongly Agree	19,7
The area is rich in activities for children	Strongly Disagree	2,2
	Disagree	6,5
	Not sure	14,4
	I agree	60,0
	Strongly Agree	16,9
Attitudes and behaviours of natural park managers towards visitors are positive	Strongly Disagree	1,5
	Disagree	7,7
	Not sure	14,9
	I agree	59,0
	Strongly Agree	16,9
Attitudes and behaviours of the staff in accommodation facilities are positive	Strongly Disagree	2,0
	Disagree	4,7
	Not sure	13,4
	I agree	59,7
	Strongly Agree	20,1
	Strongly Disagree	1,7
	Disagree	5,5
	Not sure	17,2
	I agree	57,0
	Strongly Agree	18,7

An examination of the relationship between crowd perception and gender in the  $\chi^2$  (Chi-Square) analysis of the survey results reveals that 9.9% of female participants stated that the park was crowded, while 8.7% stated that it was not crowded. In contrast, 26.9% of male participants stated that the park was crowded, 10.9% stated that it was very crowded, and 9.4% stated that it was not crowded. A cursory review of extant literature reveals a preponderance of consensus regarding the park's high visitor numbers. An examination of the relationship between visitor satisfaction and gender reveals that 46.5% of female participants expressed satisfaction with the adequacy of the service opportunities and infrastructure/superstructure elements in the nature park, while 37.4% of male participants reported a sufficient level of satisfaction. Furthermore, an examination of the relationship between crowd perception and age reveals that visitors between the ages of 26 and 39 (29.6%) reported higher levels of crowding during the

specific time periods they visited. Furthermore, an examination of the relationship between visitor satisfaction and age reveals that those between the ages of 26 and 39 (41.5%) expressed heightened satisfaction with the adequacy of service opportunities and infrastructure/superstructure elements within the nature park. A close examination of the results obtained from all age groups reveals that satisfaction levels are high across both the 18-25 age group (19.6%) and the 40-59 age group (19.4%). Furthermore, an examination of the relationship between income levels and preference for the nature park reveals that both the low-income group participants (24.8%) and the high-income group participants (33.8%) visit the nature park more frequently, and their satisfaction levels are also high. This finding suggests that the nature park's service offerings are universally accessible, catering to visitors from all income brackets. This finding suggests that the nature park caters to a broad socioeconomic demographic and that visitors derive equal enjoyment from its services.

## **RESULTS AND DISCUSSION**

The following section will present and discuss the results obtained from the research. Natural areas, such as national parks, nature parks and nature conservation areas, which have been established with the purpose of protecting nature, represent optimal locations for the execution of recreational activities. These activities allow individuals to experience the natural beauty and unique values of these areas. For this reason, especially in the last half-century, city dwellers have begun to regard recreational areas in natural areas in the vicinity of the city as escape points in order to get away from the intense and tiring city life. These areas offer a diverse array of activities, catering to a wide range of interests and preferences. In addition to providing direct benefits, these areas also enhance the overall quality of life for city dwellers (Kensuke et al., 2013; Kervankıran and Eryılmaz, 2016). Recreational areas within natural areas are unique areas with their natural resource values that allow activities such as picnicking, camping, walking on a certain route, doing various nature-based sports activities, enjoying natural landscapes, and physical and mental rest on a certain forest integrity or forest part (Akten, 2003; Akyüz, et al., 2014; Çorbacı, 2016). Given these considerations, and in view of the natural forest areas and rich vegetation of the Sığacık Nature Park, it is considered to be a valuable natural area in which visitors can find rest and relaxation.

The objective of this study is to ascertain the strategies that should be employed in order to protect the natural values of the area. This will be achieved by creating a conscious user and management profile, as well as a visitor management model. The latter will ensure the transfer of natural values to future generations by calculating the satisfaction levels of visitors

to SĞİLİÇ Nature Park and the social carrying capacity of the park. The results of the demographic data obtained from the survey study conducted to calculate visitor satisfaction levels and social carrying capacity indicate that the majority of visitors to the nature park are female (53.2%), with the largest percentage of visitors falling between the ages of 26 and 39 (47.5%). In terms of income levels, the majority of visitors have an income above the minimum level (62.1%), and 70.1% of them reside in Çorum. The majority of visitors (52.2%) reported previous attendance at the nature park, with a significant proportion visiting during weekends (66.2%), particularly in the spring (57%) and spring (29.4%) seasons. The study revealed that the majority of visitors (49.5%) arrived with family members, while a significant minority (39.6%) arrived with friends. The majority of visitors (63.9%) reached the park area by private car, while a smaller proportion (20.4%) utilised minibuses or similar public transportation vehicles.

It has been determined that the average time spent by visitors in the nature park is between 3.5 and 4 hours. The motivations for visiting a natural area encompass exploration of nature, respite from the cacophony and pressures of urban existence, social interaction with friends and family members, and engagement in various recreational activities (e.g. camping, picnicking, nature walks). These motivations are concomitant with the objectives of visiting the nature park. It can be posited that the motivations for preferring the nature park and spending time in natural areas are congruent, and that the nature park is a significant area for visitors, particularly given the opportunities it offers in terms of recreational activities that visitors find enjoyable in the natural environment. It was asserted that the park was quite crowded during the period of observation, but that this did not cause any discomfort to the subjects. However, it was also noted that the crowds were particularly dense during weekends and summer months, resulting in overcrowding and inadequate activity areas. Moreover, concerns regarding pollution were raised. In their evaluations regarding the adequacy of the activity areas and equipment elements in the nature park, visitors stated that they wanted buffets, viewpoints, ring services for transportation within the area, guiding and promotional signs, pergolas and seating units, sports areas, picnic areas, areas for disabled individuals, local product sales and promotion, and places to be included in the nature park. They further stated that the number of parking areas, fountains and children's playgrounds should be increased. The principal research question that formed the basis of the study was to what extent the relationship between the activities and the perception of the crowd is effective.

The study demonstrated once again that there is a direct relationship between the intensity of the period in which the events are held, rather than the activities preferred, and the maintenance of a positive relationship. In order to ensure the continuation of this relationship, it is necessary to plan events so that they are spread throughout the year. Furthermore, the level of

crowding experienced can be reduced by expanding the activity areas within the nature park. This approach enables the management to adapt the level of crowding without compromising the quality of activities and services. In order to maintain visitor satisfaction, it is essential to consider individual tolerance levels and preferences. The integration of facilities that are in high demand but absent from the nature park, such as buffets, viewpoints, guiding and promotional signs, pergolas and seating units, picnic areas, local product sales and promotion areas, is recommended. This approach is expected to enhance visitor satisfaction while ensuring that the density of visitors is distributed across the area, with the creation of additional service areas. This approach is expected to enhance the visitor experience and ensure the sustainable utilisation of the area at the highest levels.

In order to facilitate the management and direction of visitors, as well as to enhance the efficiency of transportation, the implementation of a ring system within the designated nature park is recommended. The development of detailed maps of the area is proposed for visitors, with the distribution of promotional brochures at the entrance control points. The placement of guidance and information maps, signs, and signs throughout the area is also suggested, with the objective of providing visitors with the ability to ascertain their current location and identify the most suitable activity area for their individual requirements. The introduction of kiosks and local product sales units within the park is recommended. In addition, the elimination of infrastructure services in picnic and camping areas, and the enhancement of their quality, is advised. Furthermore, the number and variety of game and sports areas should be increased, and suitable areas should be provided within the park in sufficient numbers to facilitate various observations (e.g. plant, wildlife, birds). These should be equipped with amenities that facilitate photography, observation of flora and fauna, and appreciation of the surrounding scenery. Furthermore, the incorporation of interactive elements and the organisation of activities that facilitate closer encounters with the natural world would serve to enhance the visitor experience, making it more educational. The 'Çorumlu Obası', located in proximity to the Sığacık Nature Park, could be relocated to a more suitable area within the Sığacık Nature Park. Alternatively, various festivals or event days could be organised to cater to visitor demands and utilise the area, thereby enhancing its visibility. To maintain constant awareness of visitor demands, it is recommended that complaints and opinions be systematically collected and analysed through the use of social media networks and electronic sites specifically designed for the promotion of the natural park. These platforms can serve as effective tools for monitoring visitor experiences and assessing satisfaction levels. The utilisation of technological solutions will facilitate the dissemination of information regarding the current status of the natural park to visitors, thereby enabling the management to gather data to optimise the administration of the area in

accordance with visitor experiences and opinions. The implementation of the most appropriate management model can be achieved through the utilisation of the aforementioned information. Moreover, the sustainability of the management model can be ensured in this manner.

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