STUDIES ON ENVIRONMENTAL, URBANIZATION, AND LANDSCAPE

EDITORS:
Prof. Dr. Bahriye GÜLGÜN
Assoc. Prof. Dr. Kübra YAZİCİ



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CHAPTER 6

THE INFLUENCE OF LARGE TREES ON THE IDENTITY OF SQUARES

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INTRODUCTION

Urban squares have been the center of public life and cultural interactions throughout history. These squares play an important role in human life as places where social relations and social memory are shaped. There are many different elements that make up the identity of public space in urban areas. In addition to architectural elements such as buildings, monuments and open space design, natural elements, especially large trees, directly affect the character and function of these spaces. This study examines how large trees in squares shape place identity in physical, ecological and social terms.

Place identity is the name given to the overall impact of a place on its users with physical and symbolic meanings. Lynch (1960) emphasizes the importance of the visual perception of the environment in creating place identity and states that the elements that take place in people's minds increase the recognizability of the place. Large trees in squares become a fundamental part of this recognizability. In addition to being a visual focal point of the square, large trees create a sense of belonging in the space. Gehl (2010), with his concept of "cities on a human scale", draws attention to the importance of organizing urban spaces in accordance with human needs. In this context, trees help squares become meeting, resting and interaction points for people. The shaded areas created by large trees allow people to spend time in squares for a long time, thus creating spatial areas where social interactions intensify (Raskovic and Decker, 2015; Yazıcı and Gülgün 2017).

In this context, the visual and emotional effects of the large trees (*Platanus orientalis*) in the Kaynaklar village square on people and the effects of these trees on the identity of urban spaces were examined through questionnaires and face-to-face interviews.

The Role of Trees in Urban Spaces in Historical Perspective

The role of trees in public spaces has played an important role in history, from ancient times to the present day. For example, in Ancient Greece, large trees in the squares of the Agora functioned as places where people gathered and held discussions. Trees in the Agora enhanced physical comfort by providing shade, while at the same time creating central points for social interaction. This is noteworthy in terms of the social functions of large trees in urban design.

During the Ottoman Empire, large plane trees in squares became an important part of social and cultural life. Places such as Sultanahmet Square, Topkapı Palace courtyard and Gülhane Park in Istanbul, surrounded by trees, became social meeting points of the Ottoman period. While large trees strengthened the symbolic value of public spaces in the Ottoman period, they also increased the livability of these spaces (Necipoğlu, 2005). In this period, large trees became an important part of urban identity as spaces that met the public's need for gathering, socializing and resting.

Aesthetic and Psychological Effects of Trees

Trees are elements that increase the aesthetic value of squares and help users to establish a deeper connection with the space. Large trees create a natural focal point in public spaces and provide visual relief for users. As Lynch (1960) notes in his theory of the urban image, trees contribute to the memorialization of the square and give the space an identity. Large trees are among the elements that complement the visual composition of the square.

Psychologically, proximity to nature reduces people's stress levels and provides peace of mind. Large trees offer such psychological benefits in dense urban environments, allowing people to connect with nature. Squares with trees are seen as spaces that fulfill people's need for rest and relaxation. The natural shade and feeling of spaciousness provided by trees in these spaces strengthen the emotional connection of users with the space (APA, 2020; Yazıcı, 2017, Gülgün et al, 2017).

The Effects of Trees on Social Interaction and Creating a Social Meeting Space

Large trees in squares provide important meeting points for social interactions. Trees allow squares to be used intensively, especially during the summer months. People meet, rest and interact socially in the shaded areas. Jacobs (1961) states that people naturally prefer meeting points in urban spaces and that these points shape social life. Squares with large trees create these natural meeting places.

Large trees also create a sense of belonging among communities. In these spaces, people not only fulfill their individual needs, but also come together in community. For example, places like “Gülhane Park” in Istanbul become social

meeting places thanks to large trees. People gathering around the trees have the opportunity to both get away from the stress of daily life and improve their social relations.

The Impact of Trees on Urban Identity

Urban squares are places that reflect the identity of a city and have an important place in the collective memory of the society. Large trees play an important role in the formation and sustainability of this identity (Eraslan and Çavdarlı, 2022). The long-lasting nature of trees symbolizes the historical continuity of squares. For example, trees in large city parks such as the Luxembourg Gardens in Paris or New York's Central Park have become not only visual but also historical and cultural symbols of these places. Similarly, large trees in historic squares such as “Sultanahmet Square” in Istanbul add historical depth and meaning to the place.

Cloke et al. (2002) argue that the large trees in Victoria Square in Bristol, England dominate the architectural logic of the square. The square was characterized as a place of trees. It was emphasized that residents still remember and talk about the old beech tree in the square, which lost a large branch in the 1950s and had to be cut down. Such memories inspire public support for efforts to “support” the old trees in the square. The old trees in the square are central to the identity of the square. Local residents, pedestrians and users of the square perceive it as a place with trees and experience it in various ways.

In this context, the preservation and transmission of large trees to future generations is critical to ensuring the continuity of urban identity. The loss of large trees is not only a physical loss, but also a weakening of social memory and cultural idntity.

1. MATERIALS and METHODS

Buca Kaynaklar village square; which is the subject of the research; is located in the center of Kaynaklar village in Buca district of Izmir. Kaynaklar is located on a plateau 9 km southeast of Izmir. It is 4 km away from Buca, located on the foothills of Nif Mountain (Figure 1). It stands out as a rural settlement with its general structure (Ünal Ankaya, 2007).

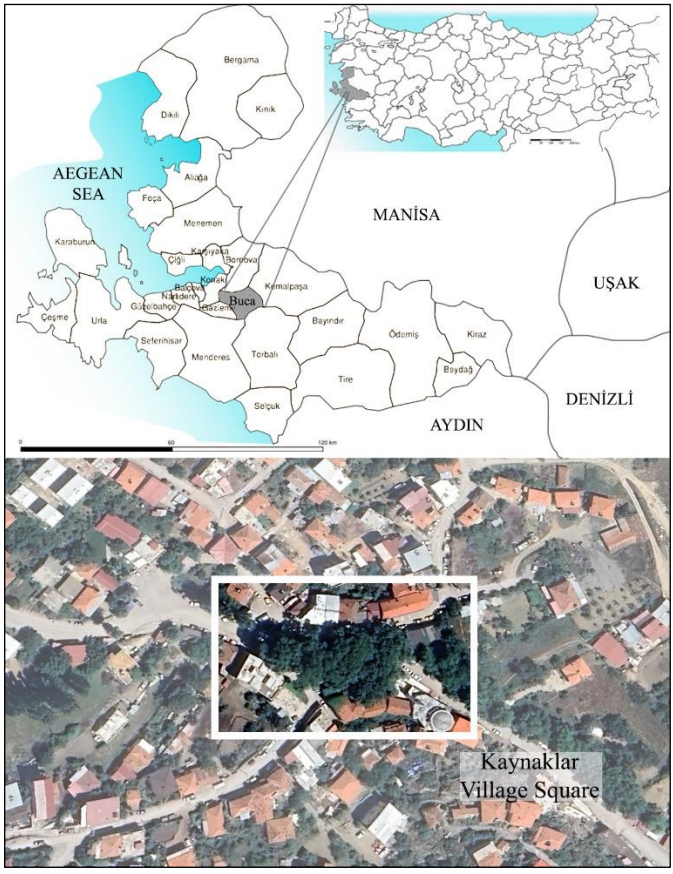

Figure 1: Location of the study area.

Kaynaklar is known as the oldest village of Buca (URL-1). Although the history of Kaynaklar village is unknown, it is thought to have a history of approximately 200 years (URL-2). According to 2023 data, its population is 1703. There are abundant water resources in the region where Kaynaklar village is located. Gürlek stream, which flows through the center of the village square and joins Tahtalı stream, has been turned into a water channel. For this reason, the water that used to flow abundantly has now decreased considerably. The water of the stream starts to flow in November-December and ends in May. Especially in summer, the water does not flow (URL-1).

While the village square, which is the subject of the research, was used as a gathering area where weddings, festivals and entertainments were held in the past, it has almost lost this feature now. Today it has become a tourism

center (URL-1). Today, it is a place used intensively by official institutions, food places, coffee houses and tourists (Figure 2) (Barboros, 2019).

Kaynaklar village has a dense green area. There is a rich vegetation around it. For this reason, the village's clean air, natural products and the opportunity to do nature sports make it a frequent destination for daily tourists from the city center (Barboros, 2019). The village of Kaynaklar, which has the Whole City Law of Buca Municipality, has more than 200 rock climbing routes (URL-2).



Figure 2: General view of Kaynaklar Village square

Kaynaklar village has an essential richness in terms of monumental trees. There are 7 monumental plane trees *(Platanus orientalis)*, one of which is registered in Kaynaklar village square. The most important of these is the Kunduracı Plane, which has existed for more than 1000 years. The Kunduracı plane tree was determined to be 1025 years old by the Protection of Naturel Assets Board in 1994 and was registered with a height of 30 meters and a diameter of 15 meters (Güngör, 2017). There are coffee houses and eating and drinking places under the plane tree covering the entire square. Over time, it has become a center of attraction for tourists. Especially for those who are interested in mountain and hiking sports use the square where the plane tree is located as a way to climb Nif Mountain from the shores of Gurlek Waterfall. In order to reach the waterfall, it is possible to see people camping in the forest by

following the water's edge and those who use the shores as a recreation area (Boyacı, 2023).

Based on these characteristics of the region, the visual and emotional effects of the large trees (*Platanus orientalis*) in Kaynaklar village square on people and the effects of these trees on the identity of urban spaces were analyzed through questionnaires and face-to-face interviews.

Within the scope of the research, a face-to-face survey was conducted with 60 respondents in Kaynaklar village square. The surveys were conducted on September 19 (Thursday) and September 21 (Saturday), one day on weekdays and one day on weekends. During the preparation of the questionnaire forms for the people using the square, the studies on the subject by Cihangir (2013), Heimlich et al. (2008), Schroeder et al. (2006) were taken as reference in the creation of the form. In addition, the small number of studies on the subject reveals the originality of the study. The survey conducted within the scope of the research consists of 4 main sections. Survey respondents;

- Questions about defining the respondent profile (demographic data)
- Questions to reveal the uses and activities enabled by the research area (activity)
- Questions on the salient features and problems of the research area (space)
- Questions to reveal the identity and image perception of the research area (meaning)

The questions consisted of 16 multiple-choice and graded questions.

The following formula was used to determine the number of people to be surveyed (Baş, 2005) and the calculation was based on 95% probability and 10% margin of error.

$$n = Nt^2pq / d^2(N-1) + t^2pq$$

N: Number of individuals in the target group, n: Number of individuals to be sampled, p: Frequency of occurrence of the event under investigation, q: Frequency of non-occurrence of the examined event, t: The theoretical value found according to the t-table at a certain significance level, d: ± sampling error accepted according to the frequency of occurrence of the event (p: 0.5, q: 0.5)

In calculating the number of individuals to be surveyed, the population of Kaynaklar village was taken as 1703 (male population, 868 and female

population, 835) according to the 2023 census (TUİK, 2023). It was used as "Number of Households in the Main Population (N)" and as a result of the calculations, the number of people to be surveyed was determined as 60.

Random sampling method, one of the probability sampling methods, was used to select the respondents. In line with the purpose of the study, the questionnaires were conducted on individuals using the Kaynaklar village square. SPSS 29.0 software was used in the statistical analysis of the survey studies.

In line with the data obtained through the questionnaire study, how the large trees *(Platanus orientalis),* in Kaynaklar village square shape the identity of the space in physical, ecological and social terms, the meaning that plane trees add to the square and its surroundings, the problems and prominent features of the square were evaluated.

2. FINDINGS and DISCUSSION

The surveys conducted with the respondents within the scope of the study were examined under 4 main sections. In the first part of the survey, 5 questions were asked to define the profiles of the respondents. Accordingly, when the distribution of the answers given to the questions according to gender was analyzed, it was determined that 53.3% of the respondents were male (Table 1).

Table 1: Distribution of respondents according to gender

Gender	***Frequency***	***Percent***	***Valid Percent***	***Cumulative Percent***
Female	28	46.7	46.7	46.7
Male	32	53.3	53.3	100.0
Total	**60**	**100.0**	**100.0**	

Considering the age of the individuals who responded to the survey, it was determined that the highest rate of participation was over the age of 65 with a rate of 25%, and the lowest rate of participation was 1.7% in the 18-24 age range. It is thought that the reason for the highest proportion of respondents over the age of 65 is due to the fact that the surveys were conducted in a square that is a village square / coffee shop / bazaar (Table 2).

Table 2.:Distribution of respondents according to age ranges

Age (Years)	*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
18-24	1	1.7	1.7	1.7
25-34	14	23.3	23.3	25.0
35-44	13	21.7	21.7	46.7
45-54	8	13.3	13.3	60.0
55-64	9	15.0	15.0	75.0
65+	15	25.0	25.0	100.0
Total	**60**	**100.0**	**100.0**	

When the educational status of the respondents is analyzed, it is shown that most of the respondents are university students/graduates with 38.3%, while the lowest percentage is non-literate with 1.7% (Table 3).

Table 3: Distribution of respondents according to their education level

Level of Education	*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Primary school graduate	14	23.3	23.3	23.3
Secondary school graduate	7	11.7	11.7	35.0
High school graduate	15	25.0	25.0	60.0
University student/graduate	23	38.3	38.3	98.3
Illiterate	1	1.7	1.7	100.0
Total	**60**	**100.0**	**100.0**	

When the marital status rates of the respondents are analyzed, it is shown that 70% of the respondents are married, and 30% are single (Table 4).

Table 4: Distribution of respondents according to their marital status

Status	*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Married	42	70.0	70.0	43.3
Single	18	30.0	30.0	100.0
Total	**60**	**100.0**	**100.0**	

Regarding whether the respondents live in Kaynaklar village or not, 43.3% of the respondents live in Kaynaklar village, and 56.7% are tourists in

the square. The high rate of tourists is attributed to the fact that Kaynaklar village being close to Izmir city center, and the region offers a wide range of recreational activities with its natural beauties (Table 5).

Table 5: Distribution of respondents according to whether they live in Kaynaklar village or not

Do you live in Kaynaklar?	***Frequency***	***Percent***	***Valid Percent***	***Cumulative Percent***
Yes	26	43.3	43.3	43.3
No	34	56.7	56.7	100.0
Total	**60**	**100.0**	**100.0**	

In the second part of the survey, the respondents were asked questions about who they use the village square with, for what purposes they use it, and how often they visit it. In this context, when the purpose of the respondents' use of the square is analyzed, “chatting” has the highest percentage with 45%, while “eating and drinking” has the lowest percentage with 8.3% (Table 6).

Table 6: Distribution of respondents' purpose of using the square according to percentages

	Frequency	***Percent***	***Valid Percent***	***Cumulative Percent***
Rest	26	43.3	43.3	26.0
Chatting	27	45.0	45.0	27.0
Getting together with friends	23	38.3	38.3	23.0
Eating and drinking	5	8.3	8.3	5.0
For business	7	11.7	11.7	7.0
Tourist/day visit	12	20.0	20.0	12.0

When asked with whom the respondents use the square, “with friends” has the highest percentage with 63.3%. The option “alone” with 11.7% means that the respondents do not want to spend time alone while using the square (Table 7).

Table 7: Distribution of respondents according to the percentages of who they use the square with

	Frequency	***Percent***	***Valid Percent***	***Cumulative Percent***
With friends	38	63.3	63.3	54.2
With relatives	25	41.7	41.7	35.8
Alone	7	11.7	11.7	10.0

When the frequency of the respondents' visits to the square is analyzed, the option “every day” has the highest percentage with 36.7%, while the option “several times a week” has the lowest percentage with 13.3% (Table 8).

Table 8: Distribution of the frequency of respondents' use of the square according to percentages

	Frequency	***Percent***	***Valid Percent***	***Cumulative Percent***
Every day	22	36.7	36.7	36.7
Several times a week	8	13.3	13.3	50.0
Rarely	18	30.0	30.0	80.0
Touristic	12	20.0	20.0	100.0
Total	**60**	**100.0**	**100.0**	

In the third part of the survey, the sources were asked questions about the prominent features and problems of the village square. In this context, firstly, the prominent features of the square were listed in a chart, and the respondents were asked to indicate the degree to which these features affected them. When the answers to the question were analyzed, 93.3% of the respondents stated that “trees are the most important element of the square” and 88.3% stated that “the square is always shaded in summer” as the most prominent features of the square (Table 9). In addition, the prominent features of the square were also evaluated based on whether the respondents live there or not. Accordingly, 85.5% of the residents think that both “trees are the most important elements of the square” and “there is always shade in summer”. On the other hand, 97.1% of tourists chose the option “trees are the most important elements of the

square". In addition, 50% of the tourists think that seeing familiar faces does not give a sense of belonging. In terms of crowdedness, 50% of the residents were not satisfied with this situation, while 52.9% of the tourists were satisfied with the highest percentage.

Table 9: Impact level of the prominent features of the square

Prominent features of the square (%)	***1***	***2***	***3***	***4***	***5***
Trees are the most important elements of the square	0	1.7	3.3	1.7	93.3
The stream is an important element for the square	11.7	5.0	15.0	8.3	60.0
The fact that there is always shade in summer makes it attractive	3.3	1.7	3.3	3.3	88.3
Seeing familiar faces gives a sense of belonging	35.0	13.3	3.3	5.0	43.3
The crowd give the familiar peace of mind	28.3	6.7	20.0	6.7	38.3

1: *Strongly disagree* ***2:*** *Disagree* ***3:*** *Undecided* ***4:*** *Agree* ***5:*** *Strongly agree*

In another question about the square, a table consisting of 6 items was used to measure the rate of respondents' being affected by the problems they see in the square. Accordingly, the most important problems of the square are "dried up stream water" with a rate of 96.7% and "poor maintenance of the stream" with a rate of 88.3% (Table 10). When the problems of the square are evaluated according to whether the respondents live in Kaynaklar village or not, the majority of those living in the village (42.3%) think that there is a maintenance problem of the trees, but tourists (35.3%) do not think that there is a maintenance problem of the trees. The biggest problem is considered to be "the lack of maintenance of the stream" and "the need for the stream water to be active again" by both sides. In addition, when the problems are analyzed by educational level, high school graduates (66.7%) and university graduates (47.8%) think that the increase in the number of tourists does not affect the square badly. On the contrary, primary school graduates (57.1%) and non-literate people (100%) think that the square is badly affected. In terms of frequency of visits, the majority of the respondents think that "the increase in the number of tourists does not have a bad impact on the square". On the other hand, those who visit every day (50%) think that the trees have maintenance

problems, while those who visit rarely (44.4%) and tourists (50%) do not think that the trees have maintenance problems.

Table 10: Impact level of the problems encountered in the square

Problems of the square (%)	***1***	***2***	***3***	***4***	***5***
I think that the increase in the number of tourists has badly affected the square	43.3	1.7	11.7	15.0	28.3
I think that trees have maintenance problems (annoying insects, allergens, neglected branches, etc.)	30.0	8.3	28.3	6.7	31.7
I think that the stream is neglected	0	6.7	1.7	3.3	88.3
I think that the stream should be active again	0	3.3	0	0	96.7
I think that there are too many sellers	61.7	3.3	13.3	6.7	15.0
I think that there are insufficient social facilities in the square (seating areas, commercial areas, fountain, etc.)	18.3	3.3	23.3	15.0	40.0

1: *Strongly disagree* ***2:*** *Disagree* ***3:*** *Undecided* ***4:*** *Agree* ***5:*** *Strongly agree*

In the fourth and final part of the survey, the respondents were asked questions to reveal their perception of the identity and image of the area. In this context, it is seen that 66.7% of the respondents know the age of the Kunduracı plane, the largest and oldest tree in the square. The protection status of the plane tree is also known by a high percentage (60%). The history of the plane tree (70%) and the follow-up of the maintenance work (55%) were not known at a high rate (Table 11). In addition, the knowledge levels of respondents living in the Kaynaklar village and tourists about plane trees were compared. According to these evaluations; the majority of both people living in the Kaynaklar village and tourists know the age and protection status of the Kunduracı plane tree. Finally, while 76.9% of the people living in the village followed the maintenance work on the Kunduracı plane, the majority of the tourists (76.9%) did not.

Table 11: Respondents' knowledge about the Kunduracı plane tree

	Yes (%)	***No (%)***
Do you know the age of the Kunduracı plane tree?	66.7	33.3
Do you know the history of the Kunduracı plane tree?	30.0	70.0
Do you know the conservation status of the Kunduracı plane tree?	60.0	40.0
Have you ever followed the maintenance work on the Kunduracı plane tree?	45.0	55.0

The impact level of the meaning attributed to the plane trees by the respondents in the research area was measured in a 6-item chart. In this context, it is seen that the highest percentages are "representing history" with 93.3% and "representing green and nature" with 93.7% (Table 12). When the meaning attributed to the plane trees was evaluated in terms of gender, it was determined that for women (96.4%) they "represent green and nature" and for men (93.8%) they represent "history" and "roots and ancestors". However, when the meaning attributed to the plane trees is evaluated according to whether the respondents live in Kaynaklar village or not, the majority of the residents (69.2%) responded that "the plane trees remind me of my childhood", while the majority of the tourists (50%) did not think the same way.

Table 12: Impact level of the meaning attributed to plane trees in the research area

Meaning attributed to plane trees (%)	***1***	***2***	***3***	***4***	***5***
Representing history	0	1.7	3.3	1.7	93.3
It represents roots, ancestors	3.3	1.7	0	3.3	91.7
Reminds me of my childhood	36.7	5.0	5.0	1.7	51.7
Reminds of the past	18.3	5.0	6.7	3.3	66.7
Representing green and nature	0	0	0	6.7	93.7
Makes you feel a sense of belonging	10.0	1.7	1.7	5.0	81.7

1: *Strongly disagree* ***2:*** *Disagree* ***3:*** *Undecided* ***4:*** *Agree* ***5:*** *Strongly agree*

Finally, in the context of the relationship between the square and the plane trees, when the respondents were asked the question "would the square function the same without the plane trees and would it make you feel the same emotions?", it is seen that the majority of the respondents (78.3%) chose the option "plane trees are the symbols of this village. Without them this square would have not had the same function" (Table 13).

Table 13: Distribution of the respondents' opinions on the integrity of the square and plane trees according to percentages

	Frequency	***Percent***	***Valid Percent***	***Cumulative Percent***
The square would still have been treated the same way without the plane trees	1	1.7	1.7	1.7
Without the plane trees, the square would have been used but it would have not had the same spirit.	12	20.0	20.0	21.7
Plane trees are the symbols of this village. Without them this square would have not had the same function	47	78.3	78.3	100.0
Total	**60**	**100.0**	**100.0**	

When the question on the relationship between the plane trees and the square was evaluated according to whether the respondents live in Kaynaklar village or not, it was determined that the majority of both residents (96.2%) and tourists (64.7%) chose the option "plane trees are the symbols of this village.

Without them this square would have not had the same function" (Table 14).

Table 14: Percentage distribution of the views on the relationship between plane trees and the square according to whether the respondents live in Kaynaklar village or not

	Do you live in the village of Kaynaklar? (Yes %)	***Do you live in the village of Kaynaklar? (No %)***

The square would still have been treated the same way without the plane trees	3.8	0
Without the plane trees, the square would have been used but it would have not had the same spirit.	0	35.3
Plane trees are the symbols of this village. Without them this square would have not had the same function	96.2	64.7

It is thought that the reason why the residents of Kaynaklar village have a significantly higher rate of perception of the plane trees as the symbol of the square than the tourists may be due to the fact that the residents have established stronger ties with the place and the plane trees.

3. CONCLUSION and SUGGESTIONS

Large trees in squares are among the basic elements that form the identity of urban spaces. These trees, which contribute to the identity of squares in terms of aesthetic, ecological, historical and social aspects, are an indispensable part of urban design. In this context, the visual and emotional effects of the large trees (*Platanus orientalis*) in Kaynaklar village square on people and the effects of these trees on the identity of urban spaces were examined through questionnaires and face-to-face interviews.

The findings obtained from the surveys conducted within the scope of the research were analyzed under the titles of “activity”, “space” and “meaning”.

When the research area is evaluated in terms of activities, it is determined that the respondents generally use the square for “chatting” and “resting”. The square is generally used with relatives and friends, but it is not preferred for lonely use. This shows that the square is an important socialization and meeting point for the respondents.

When the research area is evaluated in terms of spatial features, the trees in the square are seen as one of the most prominent features of the square by the majority of the respondents. In addition, the shade provided by the trees was also identified as one of the most important elements in the square. However,

it has been determined that the answers of those who live in the village of Kaynaklar and those who are tourists have significant differences especially to the questions about the perception of the place. For example, for those living in Kaynaklar village, seeing familiar faces in the square makes them feel a sense of belonging, while tourists do not feel the same.

When the problems of the square are evaluated in terms of the frequency of visits, it is understood that there are differences in the perception of the problems according to the frequency of use of the place. In this case, respondents who use the square every day are more sensitive in perceiving the problems. For example, while those who use the square every day think that the trees have a maintenance problem, most of the tourists do not think so. It is thought that the reason for this is that those who rarely visit the square and tourists cannot notice problems such as pruning, fungus, branch breakage, etc. due to their short visits.

Finally, the research area was evaluated in terms of the meaning attributed to the plane trees by the respondents. In this respect, the plane trees are generally symbolic of "history, ancestors and roots" for both residents and tourists. At the same time, the size of the trees and the effect they create together remind the participants of greenery and nature at a high level. In terms of the relationship between the square and the plane trees, the idea that "the square would not function the same without the plane trees" is actually an indication of the impact of these large and mighty trees on individuals.

As a result, trees are an important part of habitats and nature. Monumental trees, on the other hand, are rare trees with historical, cultural and ecological value. Especially in squares, monumental trees are seen as elements that emphasize the identity and cultural values of the place. The visual and emotional effects they leave on people make squares more livable and meaningful, while creating spaces where social interactions intensify. The protection, maintenance and development of these areas where nature and people come together are important for the continuity of cities and their transmission to future generations. In this context, protecting large trees and integrating them into urban design processes will be an important step towards creating sustainable cities.

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