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RESEARCH ON THE EFFECTS OF TRABZON KAHRAMANMARAŞ STREET PLACENESS AND PLACE EXPERIENCE ON THE SENSE OF PLACE[1]

TRABZON KAHRAMANMARAŞ CADDESİNİN YER GENLERİ VE YER DENEYİMİNİN YER DUYGUSU ÜZERİNDEKİ ETKİLERİ ÜZERİNE BİR ARAŞTIRMA

Mediha ÖZCELEP[1], Doruk Görkem ÖZKAN[2]
[1-2]Karadeniz Technical University, Faculty of Forestry, Department of Landscape Architecture, Trabzon / Türkiye
ORCID NO: 0009-0004-3108-2595[1], 0000-0002-0127-0948[2]

Abstract: Aim: The rapid urbanization of cities and recent issues such as the pandemic have underscored the importance of these urban open places as experiential realms. The aim of this study is to elucidate the effects of the environmental characteristics provided by streets within the scope of urban open places on the formation of place experience and sense of place.

Method: Kahramanmaraş Street, which holds significant historical and cultural importance for the city of Trabzon by bridging the past and present, was chosen as the research area. To this end, surveys including the Environmental Characteristics Assessment Scale and the Sense of Place Assessment Scale were conducted with 211 participants.

Results: It has been revealed that environmental characteristics are explained in three factors: functional, social, and perceptual, while sense of place is explained in three factors: place dependence, place identity, and place attachment. When examining the factors influencing sense of place, it is observed that functional, social, and perceptual characteristics, along with length of residence factors, have been added to the model.

Conclusion: The research results revealed that the most effective factor in the sense of place is the social features offered by the place. Among the environmental factors, the high interaction of social features with the sense of place shows the importance of features such as providing the opportunity to participate in informal activities offered by the environment and enabling various activities. Therefore, when designing open spaces, features that facilitate communal use should be considered. These results of the research provide information about which environmental features create a sense of place in the transformation of streets with historical and cultural value for cities.

Keywords: Environmental Attributes, Palimpsest, Placeness, Place Experience, Sense of Place

Öz: Amaç: Günümüzde kentlerin hızla yapılaşması ve son yıllarda yaşadığımız pandemi gibi sorunlar deneyim mekânımız olan kentsel açık mekânların önemini daha da anlaşılır hale getirmiştir. Bu araştırmanın hedefi, kentsel açık mekânlar kapsamında caddenin sunmuş olduğu çevresel özelliklerin yer deneyimi ve yer duygusu oluşturmadaki etkilerini ortaya koymaktır.

Yöntem: Trabzon kenti için tarihi ve kültürel açıdan önemi yüksek, geçmiş ve günümüz arasında bağlar kuran Kahramanmaraş caddesi araştırma alanı olarak seçilmiştir. Bu doğrultuda çevresel özellikler değerlendirme ölçeği ve yer duygusu değerlendirme ölçeğine ait anketler 211 kullanıcı ile uygulanmıştır.

Bulgular: Çevresel özelliklerin işlevsel, sosyal ve algısal olarak 3 faktörde, yer duygusunun ise yere bağımlılık, yer kimliği ve yere bağlılık olmak üzere 3 faktörde açıklandığı ortaya koyulmuştur. Yer duygusunu etkileyen faktörleri incelediğimizde işlevsel, sosyal ve algısal özellikler ile yaşama süresi faktörlerinin modele eklendiği görülmüştür.

Sonuç: Araştırma sonuçları yer duygusunda en etkili faktörün yerin sunmuş olduğu sosyal özellikler olduğunu ortaya koymuştur. Çevresel faktörlerden sosyal özelliklerin yer duygusu ile yüksek etkileşimde olması, çevrenin sunduğu informal etkinliklere katılma olanağı sunması ve çeşitli etkinliklere olanak sağlaması gibi özelliklerin önemini göstermektedir. Bu sebeple açık mekânlar tasarlanırken ortak kullanımlara olanak sağlayacak özellikler dikkate alınmalıdır. Araştırmanın bu sonuçları kentler için tarihi ve kültürel değeri olan caddelerin dönüştürülmesinde hangi çevresel özelliklerin yer duygusu oluşturup oluşturmadığına yönelik bilgiler sunmaktadır.

Anahtar Kelimeler: Çevresel Özellikler, Palimpsest, Yer Geni, Yer Deneyimi, Yer Duygusu

[1] Sorumlu Yazar / Corresponding Author: Doruk Görkem ÖZKAN, Karadeniz Technical University, Faculty of Forestry, Department of Landscape Architecture, Trabzon / Türkiye, dorukgorkemozkan@ktu.edu.tr, ***Geliş Tarihi / Received:18.03.2024, Kabul Tarihi / Accepted:22.08.2024, Makalenin Türü / Type of Article (Araştırma – Uygulama / Research -Application), Çıkar Çatışması / Conflict of Interest: Yok / None, Etik Kurul Raporu / Ethics Committee Report Var / Yes "Karadeniz Technical University, Science and Engineering Sciences Ethics Committee Number:E-26014373-050.01.04-420955 Date:19.09.2023"***

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INTRODUCTION

The rapid urbanization in developing countries and the consequent transformation of urban spaces have highlighted the need to focus on human-environment relationships. Consequently, today, "The city is not only considered as a sum of spatial arrangements, structures, and objects but also evaluated as a whole encompassing human-environment relationships" (Göregenli, et al., 2014). Urban open places can evolve into more efficient spaces for both emotional and physical activities by users who perceive the area as their living space, offering numerous physical and social experiences. (Özkan et al.2015; Özkan and Yılmaz, 2019). According to Canter (1983), "There is confusion about considering a place merely as an environmental feature; whereas a place should not only be evaluated as an abstract concept but also as an experience and usage" (Canter, 1983; Özkan and Yılmaz, 2019).

While urban spaces progress under the supervision of designers, they take shape according to the needs of users. As a result of this approach, urban open places are perceived by users as areas of experience with a more conscious perspective. It is necessary to understand the differences in meaning between space and place concepts. Tuan (1977) defines space as a delimited area, while also defining specific areas within this region where needs and requirements are met as places (Özkan and Yılmaz, 2019). In this approach, individuals interpret and experience spaces through their senses. The spaces that are interpreted become places. This research aims to investigate the physical, social, and perceptual characteristics that the place should offer to users and their effects on sense of place through place experience, taking into account user needs. In this context, human-place interaction, placeness, and sense of place concepts will be evaluated.

The assessment we make by experiencing the spaces we are in becomes meaningful, and as a result, our attachment to the place becomes continuous. Repeated feelings in spaces gradually transform them into habitats over time. Such a situation undoubtedly affects the lives of individuals. At this point, the necessity of perceiving, interpreting, and internalizing spaces gains significant importance. This perceived perspective directly or indirectly influences human-environment/space/place relationships. This relationship places the social being, humans, under the orbit of the lines drawn by the space itself. However, the human, who enables the lines of the space to gain a meaningful dimension, forms a sense of place first by experiencing the space and then by developing an emotional approach to it.

Therefore, it is necessary to evaluate the space by considering the layer elements (physical, social, and perceptual) that constitute the environment and needs. In this regard, the following questions needed to be answered:

- How is the relationship between the functional, social, and semantic characteristics offered by a place and the place experience and sense of place?

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- Is the duration of use of urban open places by users related to the sense of place?
- Does a sense of place develop in every place experienced?
- Does the success of place experience affect the sense of place?

To find the answers to these questions, it is necessary to first focus on people's place experience. People evaluate urban spaces based on their functional, social, and perceptual characteristics, and place experience is formed based on the fulfillment of needs. If these characteristics meet user needs, a place experience is created. However, if user needs are not met, the experience in urban open places is short-lived or users leave the space.

In the ideal scenario where functional, social, and perceptual characteristics are optimal, a sense of place develops through place experience. Studies focusing on the importance of urban open space characteristics in the formation of sense of place emphasize the necessity of understanding user needs in urban areas. This is because urban open places should provide environmental conditions that enhance productivity in users' daily activities without causing physiological or psychological discomfort (Zare, 2015).

In line with this assumption, this study aims to establish the theoretical framework for investigating the effects of the functional, social, and perceptual characteristics that a place should offer to users and their impact on user place experience and sense of place, taking into account user needs (Fig. 1).

As part of the research, the effects of the environmental characteristics of Trabzon's Kahramanmaraş street, transformed through urban renewal and pedestrianization, on sense of place will be examined. To achieve the objectives of this research, it is necessary to first examine the concepts of human-environment relationship, place transformation, placeness, place experience, and sense of place.

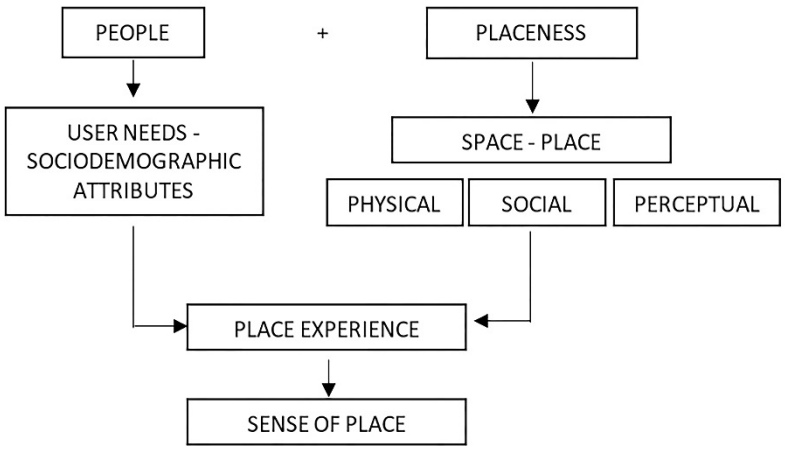


Figure 1. Theoretical Framework of the Research (Source; Authors)

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Literature Review

To explain the relationship between humans and places comprehensively, it is necessary to examine human-environment interaction in a broad context. Understanding this relationship makes the emotional process that humans establish with places more debatable. Therefore, in other sections of the study, the approaches to the environment (space - place - environment) will be elucidated to better understand the human-environment relationship, and the concept of place experience and sense of place, along with how individuals establish a connection with the physical, social, and perceptual dimensions of a place, will be discussed (Moran and Brondizio, 2013).

According to Proshansky (1983), the physical environment refers to the habitat where people live, interact, and engage in activities. This environment is a complex structure that determines the spatial and physical atmosphere where people spend time together and interact. In other words, the built environment encompasses the structural and spatial elements that shape people's daily lives (Proshansky et al., 1983).

As Clayton (2012) pointed out, understanding people's processes of selecting and modifying their environments, and the effects of these processes on individuals, creates an interface between the urban environment and people. This interface helps us understand human behaviors, preferences, and environmental interactions by examining the physical and social environments in which people live. How people choose and modify their environments has a significant impact on the design, planning, and use of the places where they live. Thus, research conducted in fields such as urban planning, architecture, and environmental psychology contributes to enhancing our comprehension of the effects of the urban environment on people and to designing more livable cities (Clayton, 2012).

The French sociologist Lefebvre (1991), in his book "The Production of Space," stated that the concept of space alone does not have meaning and spatial relationships are established through social interaction (Lefebvre, 1991). The experiences that result from emotional attachments established with these gains transform the "Space" we are in into the meaningful "Place." With the layering of meaningful activities, space becomes place.

Places do not inherently come with memories; rather, they are more contested areas competing with each other (Harvey, 1996; Creswell, 2014). In short, the parts of the lived world that we consider places differentiate according to the concentration of our intentions, attitudes, purposes, and experiences. Canter's theory of place emphasizes experiences that include more social, cultural, psychological, and subjective components in human-place relationships (Canter, 1983; Özkan and Yılmaz, 2019). A place, with its functional, social, and perceptual qualities, can further facilitate an individual's connection with the environment. In this study, Trabzon's Kahramanmaraş street will be evaluated based on the functional, social, and perceptual characteristics it offers.

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Street as Places

The concept of place encompasses various definitions and scales across interdisciplinary perspectives. In this study, the concept of place will be examined within the scope of a small urban space commonly referred to as a street. Therefore, firstly, the concept of street followed by the concept of urban space will be defined.

In today's world, the concept of street has been expressed in different ways. Initially, all paved roads were considered streets, but nowadays, streets are described as wide and long roads where small roads open onto them within the city. From these descriptions, it can be seen how intertwined the similar expressions used for each other are. Expressions such as Road, street, avenue, path, route, etc. have been used in the literature. However, there are two important elements here: a road is generally a continuous space occupied by pedestrians and vehicles. However, a street has become a concept of a settlement area with a different atmosphere from a road. Because the term street is a voluminous open space filled with buildings or vegetative materials on both sides in the world of people. With this spatial analogy, a street is the boundaries created by people for communication, shopping, transportation, or socializing. Norberg-schulz (1971) simply describes the concepts of street and lane as a 'small universe' that can be imagined, which in the past could convey the identity and character of the area to the user as a whole. Francis (1987) describes streets as the key to social life and exploration. Streets have been the subject of important studies, with Jacobs (1996) conducting research on the functional, social, and perceptual characteristics of streets. Because as a place, streets are shaped and changed by the influence of the concepts mentioned above when evaluated by users. A street provides opportunities for various activities and also facilitates social and commercial uses with the functions it contains. Streets should be convincing and able to meet people's needs by providing opportunities for eating, drinking, shopping, or various activities. Therefore, the functional, social, and perceptual characteristics that streets should offer need to be evaluated.

The Functional, Social and Perceptual Characteristics Offered by Street

Norberg-Schulz et al. (1971) categorize the street as a "Small Universe" consisting of three parts: circulation, identity-character, and form. As Gehl (2013) also emphasizes, streets as action spaces and squares as experiential spaces are important areas for our cities. In this context, The objective of the study is to reveal the sense of place experienced in the space where the street transforms into place on its interface. Therefore, it is necessary to first examine in detail the physical, social, and perceptual characteristics shaped by human behaviors on the street.

Environmental psychology studies have shown that the environment should be evaluated not only in terms of its physical characteristics but also in terms of its social attributes. This is because how people perceive and interact with their

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environments depends on both the physical, social, and perceptual characteristics of the place and the other individuals within it (Canter, 1983; Proshansky, 1983). Proshansky (1983) stated that "the structured environment is as much social as it is physical." In this context, users evaluate the physical, social, and perceptual characteristics of the environment based on their own desires, expectations, and past experiences. Gehl (2013) emphasized how urban open places need to be organized to be more sustainable, healthy, and livable for people. He classified activities in urban open places as compulsory, social, and optional activities. The increase in social and optional activities in urban spaces positively influences place experience and contributes to the fostering a sense of place.

Place Experience, Placeness and Sense of Place

The concepts of placeness and sense of place are fundamental in shaping the notion of place experience (Zhang & Li, 2021). While Placeness focuses on the environmental characteristics provided by a place, Sense of Place encompasses its emotional dimensions. When examining the literature regarding location, one encounters a variety of concepts including place, placeness, sense of place, place attachment, place dependence, and place identity. (Relph, 1976; Tuan, 1977; Steele, 1981; Özkan & Yılmaz, 2019; Akgül & Yılmaz, 2020; Zhang & Li, 2021; Ünal Çilek et al., 2022).

The concept of Placeness denotes the quality or character of a place. It encompasses the unique combination of physical, cultural, social, and experiential elements that define a specific location and set it apart from others. Placeness includes both concrete elements like geographical features, architecture, and infrastructure, as well as abstract elements like history, traditions, and the emotions evoked by a place. It is often used in various fields such as urban planning, architecture, geography, and cultural studies to analyze and understand the meaning and identity of different places.

Placeness emphasizes the physical and social features of a place, while the concept of Sense of Place highlights the emotional relationship between individuals and places. By nature, humans tend to select places based on their own needs and preferences. The distinctive features of the environment, such as its history, texture, color, atmosphere, and art, play a crucial role in this selection process. These notable features constitute the physical, social, and perceptual characteristics of a place (Salama & Azzali, 2015), which, in turn, contribute to the formation of place experience and Sense of Place.

Place, in essence, is how we make sense of and experience the world around us. It is imbued with meaning at a foundational level (Lefebvre, 1991; Cresswell, 2014). Each individual has a unique way of experiencing the spaces they inhabit, and these experiential styles influence how they perceive and interact with chosen or subsequently preferred places.

For a place experience to occur, individuals need to establish strong connections with the distinctive physical, social, and perceptual

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aspects of that environment. In broader terms, the meaning of any experience in a given environment can be better understood through a wider spectrum. Canter's (1983) place theory emphasizes that the meaning of a place results from the relationships between its physical qualities, concepts, and actions. Indeed, place experience entails an individual's negotiation with the characteristics of the experienced space, thereby transforming it into a tangible place with meaning. This interaction contributes to the emergence of a Sense of Place within the experienced location.

Jackson (1995) defines Sense of Place as a phenomenon arising from the relationship individuals establish with a place over time. This relationship emerges as a result of habit and traditions. Sense of Place can be reinforced by recurring events and experiences, strengthening an individual's attachment to a place and deepening their connection with its identity (Turner & Turner, 2006). According to Tuan (1977), sense of place refers to the significance and importance of a place organized by an individual or group based on their experiences with that environment. Hence, sense of place is both a result of physical and personal/social interactions with a place and a societal phenomenon.

Informed by the literature, the study will investigate the impact of the functional, social, and perceptual characteristics offered by Kahramanmaraş Street in Trabzon city on the Sense of Place.

MATERIAL AND METHOD

Study Area

The working area is Kahramanmaraş Street, located in the Ortahisar / Turkey. This avenue, previously used as both a vehicular and pedestrian axis, was pedestrianized as part of urban renewal efforts in 2022 and reopened with a new vision. Following this transformation, the aim was to evaluate the user experience based on the functional, social, and perceptual characteristics it offers. Investigating whether a sense of place develops based on user experience is also one of the research objectives.

Kahramanmaraş Street in Trabzon had a dirt surface in the 1930s, and it reached the present day with cobblestone details from the 1950s onwards. The avenue starts from the state coastal road and ends in the square, spanning 2.5 km in length between the post office and the square. It is one of the busiest and most crowded streets in Trabzon. The street features institutions, banks, stores, seating units, and event spaces along its stretch (Fig. 2).

Survey and Participants

The overall framework of the research design has been established to determine the sense of place value based on the user experience of the functional, social, and perceptual features offered by Kahramanmaraş Street. Within this scope;

- Evaluation of environmental features of Kahramanmaraş Street
- Assessment of users' sense of place

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- Determining the relationships between all of these data points is planned.



Figure 2. Study Area (Source; Authors)

Survey Instruments for Open Spaces Functional, Social and Perceptual Attributes.

The aim is to evaluate the functional, social, and perceptual features of Trabzon's Kahramanmaraş Street by users. In this context, expressions included in the attitude scale were determined by evaluating user needs and the features that successful open spaces should offer (Table 1).

Table 1. Items Included in the Attitude Scale (Developed Based on Salama & Azzali,2015; Özkan ve Yılmaz, 2019)

Functional att.	Social att.	Perceptual att.
· Usage diversity	· Interaction	· Perception of experience
· Ecological quality	· Social inclusivity	· Comfort and relaxation
· Formal quality	· Diversity	· Personal space
· Accessibility	· Social activity	· Sense of safety
· Spatial layers	· Interaction between different social groups	· Architectural character
· Legibility	· Social group facilities	· Wayfinding elements
· Identifiability	· Social accessibility and usage efficiency	· Spatial experience
· Breadth of visual experience	· Harmony	· Local identity
· Breadth of landscape elements	· Popularity of the space	· Attractiveness
· Flexibility	· Informal encounters	· Differentiation and recognizability
· Proximity & Continuity/Need	· Social interaction	
· Spatial quality		

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A Likert Attitude Scale was applied in the survey. Participants (n:211) were randomly selected from users of Kahramanmaraş Street.

Research Items for Sense of Place

At this stage, the Sense of Place Scale was used to determine the effects of the functional, social, and perceptual features of Kahramanmaraş Street on sense of place. The statements in the scale were compiled and modified from previous studies on sense of place, conducted in both urban open places and other contexts. The statements were developed from Williams and Vaske (2003), Mulvaney et al., (2020) and Özkan (2017).

RESULTS

Sociodemographic and Visitation Characteristics

The research involved conducting a survey with a total of 211 participants, consisting of 114 women and 97 men. It was observed that the majority of Kahramanmaraş Street users were in the age range of 26-40. Upon examining their residency durations, it was noted that a significant portion had been living in Trabzon for more than 15 years. It was revealed that most users preferred this area several times a month and predominantly used it for 1-2 hours at a time.

Place Experience and Environmental Attributes

For the evaluation of the environmental features provided by the open spaces of Kahramanmaraş Street, users were presented with an Environmental Features Assessment Scale (34 items). The average values for this scale are presented in Table 2. These 34 statements were formulated based on studies on what qualities successful spaces should offer.

In the analysis, varimax rotated principal component analysis was applied, and factor loadings below 0.40 were suppressed, repeated four times (Table 3). These factors represent 58.530% of the total variance. The suitability of the scale for factor analysis was confirmed by a Kaiser Meyer Olkin (KMO) value of 0.816 and a Bartlett's test of sphericity χ^2: 2879.289, $p < 0.001$ ($\alpha = 0.910$; M = 93.68; SD = 25.508; 34 items; n = 211). The original item numbers and descriptive statistics for the factors are shown in Table 4. These three dimensions related to environmental qualities were defined as "functional," "social," and "perceptual."

As a result of the analysis, the first factor was defined as "functional." This factor alone accounts for 28.416% of the total variance and consists of 7 items. The functional dimension includes landscape elements, easy accessibility, design and aesthetic appearance, limited areas, and various interactive qualities (items: 4, 5, 7, 9, 10, 11, 12). The functionality dimension is the factor with the highest reliability value ($\alpha = 0.910$) in the analysis.

The second factor was defined as "social." This factor accounts for 17.355% of the total variance and consists of 7 items. It includes providing opportunities for encounters, encouraging various activities, liveliness, and the popularity of the space (items: 13, 15, 16, 17, 22, 23, 24).

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In the analysis, the "management (item 32)" factor loading was found to be sufficiently low and was therefore removed from the dataset.

The third factor was defined as "perceptual." This factor accounts for 12.760% of the total variance and consists of 5 items. The perceptual dimension includes qualities such as experiential comfort, architectural character, spatial suitability, unique character, and recognizability (items: 26, 27, 29, 31, 34).

As a result of the analysis, a 3-factor structure with 32 items emerged, and these three factors accounted for 58.530% of the total variance, with an average value of 2.351 reliability (α = 0.967

Table 2. Frequency Values of Environmental Features (Source; Authors)

Environmental attributes	Mean	SD
1. The space contains different uses.	2.88	1.11
2. The design of this space can be described as environmentally friendly.	2.76	1.16
3. The form of this space is suitable for existing uses.	2.86	1.10
4.This place is easily accessible from the surrounding area.	3.03	0.95
5. This venue includes tiered meeting spaces	2.97	0.94
6. This space contains unique and iconic elements that make it visible from a distance.	2.99	0.81
7. The boundaries and edges of this space are defined.	3.03	0.94
8. The architectural elements in this place vary.	3.11	0.94
9. Landscape elements in this place vary.	3,03	0.92
10. The design of this space can be changed and adapted according to the needs and requirements.	3,01	0.94
11. This space is an important place for the surrounding urban context.	3,00	0.96
12. The buildings adjacent to this space are compatible with each other and the formation of the space.	3.12	0.94
13. I can make eye contact and interact with other people while performing my activities in this place.	3.51	1.12
14. Activities in this place take place with more than one person.	3.49	1.14
15. The space encourages use by various social groups.	3.32	1.14
16. This venue encourages participation in various social activities.	3.55	1.09
17. This venue encourages interaction between various social groups.	3.59	1.01
18. The service facilities and landscape elements in this place adequately serve different social groups.	3.45	1.15
19. The venue is socially accessible in terms of location and transportation options.	3.53	1.06
20. The space offers usage opportunities to meet the needs and requirements of social groups	3.74	1.17
21. The facilities offered by this place are compatible with its intended use.	3.50	1.15
22. I want to bring another friend to this place	3.49	1.18
23. This place allows me to meet people I know.	3.97	0.85
24. I can make eye contact with other people in this location.	3.95	0.92
25. Place provides opportunities for an intense human experience and encourages users to connect to it	3.78	0.96
26. The physical design of the space promotes a feeling of comfort and relaxation.	3.85	0.95
27. It provides spatial compatibility with my behavior while sitting and walking in this place.	3.76	1.02
28. Users of this place feel safe.	3.84	0.96
29. The architectural character of this place varies depending on the environment.	3.57	0.99
30. It is very easy to navigate and navigate this place.	3.54	1.02
31. The spatial experience in this place is quite interesting.	3.82	0.89
32. The landscape character of this place reflects the identity of Trabzon.	3.26	1.11
33. This place can be described as an important attraction of the city.	2.88	1.11
34. This place is known within the city and stands out from its surroundings.	2.76	1.16

Sense of Place

Trabzon Kahramanmaraş Street provides users with physical, social, and perceptual features that allow them to comfortably carry out their activities in open spaces. The concept of sense of place felt towards these

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open spaces was evaluated, and the average values are presented. When we look at the general averages of the sense of place in the open spaces of Kahramanmaraş Street, the mean value (X = 3.0216), variance (0.375), and standard deviation (0.61239) were determined. The average values for the sense of place in open spaces are shown in Table 5.

The original item numbers and explanatory statistics for the factors are presented in Table 5. When naming the emerged 3-factor structure, the factor loadings that loaded more than 0.4 were preferred. These three dimensions related to the sense of place scale were expressed as "place dependence," "place identity," and "place attachment." A total of 211 data were included in the analysis, and high reliability coefficients were obtained for each factor. For the 1st factor, place dependence, the factor loadings ranged from 0.907 to 0.917. For the 2nd factor, place identity, the range was from 0.888 to 0.857. And for the 3rd factor, place attachment, the range was from 0.795 to 0.777.

Table 3. Factor Analysis (Source: Author)

Dimension	Factor	Variance (%)	Mean	α
Functional (7 Madde)		28.416	3.0271	0.910
4. This place is easily accessible from the surrounding area.	0.918			
5. This venue includes tiered meeting spaces	0.861			
7. The boundaries and edges of this space are defined.	0.851			
9. Landscape elements in this place vary.	0.506			
10. The design of this space can be changed and adapted according to the	0.922			
11. This space is an important place for the surrounding urban context.	0.862			
12. The buildings adjacent to this space are compatible with each other and	0.649			
Social (8 Madde)		17.355	3.5201	0.879
13. I can make eye contact and interact with other people while performing	0.757			
15. The space encourages use by various social groups.	0.717			
16. This venue encourages participation in various social activities.	0.753			
17. This venue encourages interaction between various social groups.	0.768			
18. The service facilities and landscape elements in this place adequately	0.597			
22. I want to bring another friend to this place	0.638			
23. This place allows me to meet people I know.	0.809			
24. I can make eye contact with other people in this location.	0.786			
Perceptual (5 Madde)		12.760	3.8588	0.846
31. The spatial experience in this place is quite interesting.	0.739			
26. Physical design of the space. Promotes a feeling of comfort and	0.821			
27. While sitting in this place. Provides spatial compatibility compatible	0.726			
29. The architectural character of this place varies depending on the	0.597			
34. This place is known within the city and stands out from its	0.630			
Total varience		58.530		

Note. All constructs were scaled as 1 = strong disagree to 5 = strongly agree.

Table 4. Frequency Values of Sense of Place (Source; Authors)

Place dependence items	Mean	SD
1. I would not use any other place for the work I do in this place.	1.79	0.75
2. I am more satisfied with my experience at this place compared to other places.	2.09	0.87
3. My experiences in this place say a lot about who I am.	2.08	0.83
4. I identify very strongly with this place.	2.13	0.82
5. This place means a lot to me.	2.01	0.90
6. I feel very attached to this place.	1.83	0.85

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7. I feel happy when I come to this place.	2.20	0.88
8. This place means a lot to me.	2.14	0.83
9. I feel like this place is a part of me.	2.21	0.90

Table 5. Factor Analysis of Place Dependence

Dimension	Factor	Variance (%)	Mean	Cronbach α
Place Dependence (2 items)		42.528	3.509	0.911
1. I would not use any other place for the work I do in this place.	0.907			
2. I am more satisfied with my experience at this place compared to	0.917			
Place Identity (2 items)		19.898	2.469	0.844
3. My experiences in this place say a lot about who I am.	0.888			
4. I identify very strongly with this place.	0.857			
Place Attachment (5 items)		14.021	3.047	0.860
5. This place means a lot to me.	0.795			
6. I feel very attached to this place.	0.770			
7. I feel happy when I come to this place.	0.800			
8. This place means a lot to me.	0.843			
9. I feel like this place is a part of me.	0.777	76.447		

Note. All constructs were scaled as 1 = strong disagree to 5 = strongly agree

The Findings on the Impact of Demographic Characteristics and Environmental Features on Sense of Place

Correlation analysis was conducted to between socio-demographic characteristics and environmental features with sense of place (Table 6). Upon examining the results of the correlation analysis, factors positively correlated with sense of place, in order of magnitude, are Social attributes, Functional attributes, Perceptual attributes, and Length of use. There is no significant relationship between sense of place and Gender, Age group, Marital status, Education, Profession, Length of use, and Frequency of Use.

Table 6. Socio-Demographic Factors, Environmental Factors and Sense of Place: Bivariate Correlations

Factors	Sense of Place
Functional attributes	0. 615**
Social attributes	0.719**
Perceptual attributes	0.583**
Gender	0.086
Age Group	0.074
Marial Status	0.037
Education	0.105
Profession	0.105
Length of Life	0.006
Frequency of Use	0.059
Lenght of Use	0.178**

Note. Significance indicated by *p<.05, **p<.01

Regression analysis was conducted to determine the factors predicting sense of place (Table 7). The R2 value in the 5th and final step of the regression analysis was calculated as 0.322. The analysis is suitable for the linear model (F (5-205) = 32.593; p=0.000) and there is no autocorrelation. Therefore, statistically, it has been

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demonstrated that functional attributes, social attributes, perceptual attributes, place experience, and length of use variables have a significant positive effect on sense of place.

Table 7. Regression Analysis on Demographic Characteristics, Environmental Factors, Place Experience, and Sense of Place

	Model	B	Std. Hata	β (Beta)	t	p
5	(Constant)	1,898	,400		8,783	,000
	Social Attributes	,557	,064	,507	8,697	,000
	Functional Attributes	,243	,024	,135	2,317	,000
	Perceptual Attributes	,148	,122	,115	3,063	,002
	Place Experience	,103	,042	,098	2,312	,003
	Length of Life	,054	,026	,090	2,201	,003
R=,567; R^2=,322; Adjusted R^2=,312; Model $F_{(5\text{-}205)}$ = 32,593; p<0,01						

When looking at the effects of all variables on sense of place, we can say that, in order of magnitude of their effects, social features (β=0.557; p<0.00), functional features (β=0.243; p<0.00), perceptual features (β=0.148; p<0.002), place experience (β=0.103; p<0.003), and length of use (β=0.054; p<0.003) have significant effects. According to the analysis results, as the success of social and functional features of Kahramanmaraş Street increases, place experience and subsequently the concept of sense of place emerge. It is observed that the most influential environmental factors on sense of place are socialization and functionality. As the duration of time spent in the space (years) increases, the sense of attachment to the place also increases. Regarding the usage characteristics of the space, we can only say that as the frequency of use increases, the place attachment increases.

DISCUSSION

The study aimed to investigate the effects of the environmental characteristics of Kahramanmaraş Street, which was pedestrianized in 2022, on place experience and sense of place. The concept of sense of place emerges prominently in the redesign and management of spaces that have become synonymous with urban identity. Therefore, it is crucial to understand which environmental factors of historical areas in city centers contribute to the formation of sense of place in transformation projects. There are limited studies in the literature on the effects of landscape projects on sense of place. Therefore, Kahramanmaraş Street, with its high physical, social, perceptual, historical, and temporal layer values, which are crucial for Trabzon, was chosen for this study.

The results of the research revealed a three-factor structure for the environmental attributes. These factors were named as Functional attributes, Social attributes, and Perceptual attributes. This structure supports the studies of Salama et al. (2015). When examining the values of these factors on Kahramanmaraş Street, it was observed that

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the highest value was for Perceptual attributes, followed by Social attributes and Functional attributes, respectively. The high value of Perceptual attributes can be attributed to the increased readability of the street after pedestrianization.

To assess the effects of functional, social, and perceptual attributes on sense of place, the Sense of Place Scale was used. The statements in the scale were compiled and modified from previous studies on sense of place in both urban open places and other contexts. When examining the statements for evaluating users' sense of place, three sub-dimensions were identified: place dependence, place identity, and place attachment. While the place dependence factor obtained the highest value on the street, the place identity factor obtained the lowest value. All environmental factors were found to be associated with sense of place. The three-factor structure of sense of place and these results related to sense of place support the studies of Stedman (2003).

When examining the effects of socio-demographic characteristics, space usage characteristics, and environmental factors on sense of place, it was observed that social, functional, perceptual attributes, place experience, and length of use were in order of magnitude of their effects. Stated differently, as the success of social, functional, and perceptual features of a place increases, and as the duration of stay in that place increases, sense of place emerges. The results suggesting that social features of the environment have the highest interaction with sense of place, emphasizing the importance of features that provide opportunities for informal activities and various events in the environment. Therefore, when designing open spaces, features that enable communal use should be considered.

It was also found that the duration of stay in the street is an effective variable in forming a sense of place. As users spend more time in the space, their emotional attachment increases. Therefore, attention should be paid to the changing needs of users over time, and the existing situation should be maintained, improved, or updated accordingly.

CONCLUSION

Today, the effects of mobility and globalization have led urban spaces, such as street open spaces, to become undesirable places where place experience is not formed at the desired level, and meaningful social relationships are not established. Therefore, this study, which reveals what the physical, social, and perceptual characteristics of the environment should be to increase the interaction between people and the environment, provide meaningful experiences, and develop a sense of place, is crucial.

- Environmental features are expressed in three sub-dimensions in the study. These are described as functional, social and perceptual features.
- The first factor is the “functionality” factor; It consists of 7 expressions representing Accessibility, spatial layers, richness of landscape elements, Flexibility/Adaptability,

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spatial quality and Proximity & Continuity/Need expressions.

- The second factor is the "sociality" factor; It consists of 8 expressions indicating the feeling of interaction, social activity, interaction between different social groups, social accessibility, informal encounter, social interaction, popularity of the place, harmony, social inclusion, diversity and harmony.
- The third factor is the "perceptual feature" factor; It consists of 5 expressions showing the perception of experience, comfort and relaxation, architectural character, distinction and recognition.
- When we examined the results regarding the effects of all variables on the sense of place, it was determined that social, functional, perceptual attributes, place experience and finally length of life were added to the model.

These results of the research reveal the priorities of place experience in creating a sense of place in open spaces within the scope of the literature examining human-place relations. Discussing the relationship between the concepts of place experience and sense of place in functional, social and perceptual dimensions is very important for the literature. The results of this study, which investigates the effects of environmental characteristics on sense of place in street open spaces, provide important data for urban designers, users, and city administrators.

- **Ethics Text:** *In the research process of this article, the ethical rules of the journal, the principles of publication, the rules of research and publication ethics, and the ethical rules of the journal were complied with. A declaration has been made by the author(s) that these rules have been followed and it has been accepted by the author(s) that the study has been completed in accordance with these ethical values by acting in accordance with the COPE publication and architectural professional ethics rules. The responsibility for any violations that may arise regarding the article belongs to the author(s). Our journal and its boards do not accept any liability.*
- **Author Contribution Rate:** *In this study, the contribution rates of all authors are equal.*

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