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Preferences for the Old Towns Centers:
The case study of Antalya Kaleiçi

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Abstract
The perception of historical urban areas is essential for the city. This study used photographs taken in Antalya Kaleiçi to question the perception of historic urban areas in the whole metropolitan area. In the study, in which the psychological model method was used in environmental aesthetics, categorization was carried out by factor analysis. In the study, in which five different categories emerged, it was revealed that users liked the open prospect views the most, and the streets were significantly less. The study's results are thought to contribute to the management of historic city centers.

Keywords: Antalya; Categorization, Factor Analysis, Historic Town Centers

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1.0 Introduction
Historical city centers are essential in reflecting traditional architecture and forming the basis for urban identity. The planning, design, and management of these spaces require extra attention. In addition, it is essential to know how the built environment is evaluated and perceived by the users. A space's success depends on the users' views and their understanding of its necessary importance. Historical city centers are essential places in terms of the formation of urban identity. These spaces, formed by accumulation over the years, are the physical evidence of urban memory. In addition, these places, which also serve touristic purposes, are essential attractions. Old city center places, consisting of buildings living witnesses of the city's history, are imperative accumulation points for the city.

Many local and foreign tourists visit the city of Antalya at all times of the year. One of the most fabulous riches of Antalya, which offers visitors history, culture, beaches, and nature, is the Kaleiçi settlement. Kaleiçi, located within the old city's walls and forms the core of the city of Antalya, is a destination that offers different experiences to users with its traditional residences and monumental structures. The region, which experienced urban collapse in the 1990s, gained great vitality with the urban renewal and subsequent restoration works in the 2000s and became a unique and qualified area. Kaleiçi, where many accommodation facilities and commercial enterprises are located, is a significant economic value for Antalya. A settlement suitable for the topography is observed in Kaleiçi, which has generally narrow traditional streets. These streets often have a meandering structure due to topographical conditions. There are many examples of civil architecture from the Ottoman period in the region, where dead-end streets are encountered occasionally.

The city of Antalya, which has experienced significant growth, especially with the internal migrations that started in the 2000s, has managed to preserve the historical texture of the Kaleiçi, the historical city center. Kaleiçi, which contains many traditional residential buildings from the Ottoman period, also contains many religious and military historical buildings. It seems essential to determine user preferences for this area. This study was conducted to determine how the users perceive the Kaleiçi settlement in Antalya.

1.1. Objectives
User preferences in urban environments are of great importance for the management of urban areas. This importance is more significant in areas such as Antalya Kaleiçi, which is essential for the city Tourism and undertakes a significant part of economic activities. In this context, it seems essential to apply the determination of categories with factor analysis, which is generally applied to natural landscapes and urban areas and constitutes the primary purpose of this study. To investigating this phenomenon a qualitative questionary has been applied. In order to achieve this goal, photo shoots were carried out in the castle. The photographs taken were selected to be homogeneously distributed throughout the area in order to represent the whole area, and the rating scores of 310 users were collected for the 33 selected photos. The obtained data were categorized with the help of factor analysis, and the differences in variance between the five categories were questioned to determine the relationships between the categories. It is thought that the results will be significant in the management of historical urban spaces.

1.2 Aim and Scope
This study aims to determine how kaleiçi is included in users' perceptions by holistically considering the kaleiçi, which many users use every day. Investigating perception of this area is important for future developments and other aspects. The psychological model was widely used in landscape visual evaluation studies. For this purpose, the photos taken in the Kaleiçi region were scored by the users, and these data were subjected to categorization. Then, whether there was a significant differentiation between these categories was questioned. In this way, it will be possible to find out how kaleiçi is categorized in the perception of users, and whether there is a differentiation between these categories will be questioned.

2.0 Literature Review
Environmental aesthetics is a field of study that emerged in the context of nature-human relationships and then expanded to include artificial environments (Carlson, 2009). Studies in this field aim to measure people's reactions to their environment and to understand the motivations underlying these reactions. Environmental aesthetics and psychology are essential to understanding human beings (Steg et al., 2009). Recent technological developments and the widespread use of brain imaging techniques in medicine have also led to the birth of the field of neuro-aesthetics, which is closely related to environmental aesthetics and environmental psychology (Chatterjee, 2015; Sussman & Hollander, 2021). These disciplines, which focus on human-environment interaction, have come a long way in a short time to explain the effect of the environment on humans.

For environmental aesthetics, Hepburn's essay is considered a landmark. After Hepburn wrote her article, many researchers, especially Alen Carlson and Arnold Berleant, started to research the aesthetic experience of the environment (Carlson, 2000; Berleant, 1994). Despite the empirical studies, Jay Appleton sees a theoretical vacuum in Environmental Aesthetic studies (Carslon, 2009) and theorizes the prospect-refuge theory for landscape preferences. After the decade publishing of his seminal book "Experience of Landscape," he wrote about the prospect refuge theory revisited. He said that many studies have positive results to support the theory, and many others have found negative results, which need help finding the connection between theory and preferences. In addition, the discontent with the increasing environmental problems observed in society in the 1960s pushed many environmental psychologists, especially Rachel Kaplan and Stephan Kaplan, to conduct empirical studies on the environment (Kaplan et. al., 1972; Kaplan & Kaplan, 1989). The increasing environmental movement has brought about a return to nature, and protected areas or natural areas and forests have become home to many visitors. These have brought up the issues of visual planning, design, and management of the landscape, and visual landscape evaluation studies have gained significant momentum (Kaplan et al. 1998). Daniel and Vining (1983), who examined all these different approaches, determined that five basic research models exist in the aesthetic evaluation of landscapes. Based on experts' assessment of landscapes, the ecological method is the most objective model. The formal aesthetic model, which experts evaluate by looking at the features of the landscape, such as form, texture, and form, is considered the most objective method after the ecological model. The psycho-physical model, which is based on the association of the physical characteristics of the landscape with the scores given by the users, falls between objective and subjective models. In addition, the psychological model, in which the scores given by the users for the landscapes are associated with psychological variables, stands out as a subjective evaluation method. The most subjective model is the phenomenological method, which focuses on the phenomenological experiences of individuals (Daniel & Vinning, 1983).

3.0 Methodology

3.1. Study Area and Stimuli
The Antalya territory is arranged in southwest Anatolia between the 29°20'-32°35' East and 36°07'-37°29' North geographical points. The city is found on the Mediterranean coast, on the Antalya golf, and is surrounded by the Mediterranean Sea to the south and the Taurus Mountains to the north (Figure 1.).

Figure 1. Study area (Google Maps)

The old city center, located in Antalya, Turkey, and known as "Kaleiçi," is a center where the heart of the city beats with its historical places and critical commercial areas. Founded by the king of Pergamon, Attolos, the city of Antalya has been an important port city that has hosted different cultures for a long time. The old city center in Antalya, known as "Kaleiçi," is a crucial tourism center for Antalya and Turkey. Kaleiçi is a fascinating historical city center that has taken its current shape with the urban transformations it has experienced recently.

The primary settlement ranges of Antalya's ancient city center are the Kalekapısı, Hanlar, Balbey, and Haşimişcan neighborhoods. In 1973, Kaleici was assigned as an ensured range by the Higher Board of Genuine Bequests and Landmarks, and in 1979, the Kaleici Preservation Improvement Arrange was affirmed for the locale (Gül, 2006). The assurance arrangement was changed by METU Prof. Dr. Mustafa Parlar from the Instruction and Investigate Establishment, and the Antalya Preservation Board affirmed a modification development arrangement on May 13, 1992 (Gül, 2006). 2018 Antalya Metropolitan District is working on an amendment to the Kaleici Preservation Advancement Arrange (Oktay et al al.). The vernacular houses of Kaleici comprise two- and three-story buildings with overhanging windows and spaces. The history of the most seasoned houses dates back to the conclusion of the 19th century. Nearby climate and ways of life influenced vernacular buildings' spatial courses of action and formal plans. The buildings' ground-floor arrangement comprises patios and "taşlık," pebblestone clearing with distinctive plans. Stone flooring is kept damp during the hot summer to supply cooling (Acar et al., 2010).

The ground-floor plans of the buildings were made to coordinate the road surface, and overhanging spaces were utilized on the upper floors to make the inside space indeed. The houses are built following each other on both sides of the limited boulevards of Kaleici. Overhanging spaces give shade within the boulevards. Wood is favored as a building fabric since it is quickly discovered within the locale (Cimrin, 2002). The building dividers are made of mortar and rubble stone on the ground floor, and wooden materials are utilized on the upper floors, which are built utilizing wooden pillars. Woodwork is utilized within the entryways and windows, and cut stones are favored within the outlines of the entryways (Cimrin, 2006; Uyar et al., 2004). Nowadays, some of the vanished wooden entryway folds have been supplanted with metal sheets (Acar et al., 2010). Overhanging windows, overhanging spaces, windows, and entryways beautify the exterior and improve the entrance space of Kaleici houses, which have straightforward façade highlights in color and texture.

Photography in the study area was carried out with a professional DSLR camera. Photographs were taken from various points of the field in the early morning hours with a DSLR camera attached to a 10 mm wide-angle lens, and the photos taken were processed on the map with a GPS pointer (Figure 2). Taking photos in the early hours of the morning prevented people from entering the frames

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and ensured that the focus was on the urban space. The photo shoots were taken from a height of 1.75 with a medium focal aperture. A total of 60 photographs were taken, and 33 were selected to be used in the survey to represent the field in the office environment.

Figure 2. GPS points of the photos

3.2. Method
In this study quantitative research metods has been used. A survey of 33 photographs characterizing the area was carried out for this. While selecting the 33 photographs used in the survey, attention was paid to the homogeneous distribution of the photographs in the Kaleiçi region and to characterize the areas taken from the streets and regions. In the survey, users were asked to indicate their liking preferences for photos. A total of 310 people participated in the survey and indicated their preferences. Accordingly, suggestions for the future were developed with the interpretations of the photographs and their contents. For the statistical analyses, reliability analyses were first done on the data. After that, a series of exploratory factor analyses were performed. After that, a series of descriptive statistics was done on the photo preference scores to obtain the mean scores of each photo. Finally, after the categories have been defined, the Anova test was applied to the mean scores of the photos. The study is thought to contribute to the holistic development of the "Kaleiçi" region. Historical city centers are essential places in terms of the formation of urban identity. These spaces, which have been formed by accumulation over the years, are the physical evidence of urban memory. In addition, these places, which also serve touristic purposes, are essential attractions. These places, consisting of buildings that are living witnesses of the city's history, are essential accumulation points for the city.

4.0 Findings
An aesthetic categorization operates with the help of factor analysis to find out the perceptional pattern of user preferences. Then, a one-way ANOVA test was applied to the category's mean results to see the differences between categories. When the 33 photos were sorted by their preference, the mean result of the most liked photo was photo 3 (mean= 4,07), which consists of a scene from high protection to the open scene, which consists of a view of the harbor. The photo is mainly linked with the prospect refuge theory, which consists of a highly protected view to a vast prospect view. The least liked picture is photo 24 (mean= 2,68), which consists of an unprotected closed view that shows a street with a dead end (Table 1).

Table 1. Mean scores of the photos

Photo3 $\bar{x}$=4,07	Photo 17 $\bar{x}$=3,97	Photo 12 $\bar{x}$=3,87	Photo $\bar{x}$=5 3,85
Photo 2 $\bar{x}$= 3,83	Photo 7 $\bar{x}$=3,83	Photo 10 $\bar{x}$= 3,77	Photo 4 $\bar{x}$= 3,77
Photo 31 $\bar{x}$= 3,75	Photo 1 $\bar{x}$= 3,68	Photo 20 $\bar{x}$= 3,68	Photo 21 $\bar{x}$= 3,65
Photo 19 $\bar{x}$= 3,5903	Photo 11 $\bar{x}$=3,5194	Photo 29 $\bar{x}$=3,464	Photo 6 $\bar{x}$=3,44
Photo 18 $\bar{x}$=3,40	Photo32 $\bar{x}$=3,37	Photo 30 $\bar{x}$=3,36	Photo16 $\bar{x}$=3,35
Photo33 $\bar{x}$=3,35	Photo 23 $\bar{x}$=3,26	Photo 8 $\bar{x}$=3,25	Photo 9 $\bar{x}$=3,18
Photo 26 $\bar{x}$=3,11	Photo 28 $\bar{x}$=3,07	Photo 27 $\bar{x}$=2,9452	Photo 14 $\bar{x}$=2,91
Photo 13 $\bar{x}$=2,86	Photo 22 $\bar{x}$=2,80	Photo 15 $\bar{x}$=2,79	Photo 25 $\bar{x}$=2,78
Photo 24 $\bar{x}$=2,68			

4.1. Categorization of the Photos

In order to better understand the preferences expressed by the users in the survey and to reveal the relationships between the photos more clearly, categorization processes were applied for preferences with the help of factor analysis. In the categorization process, factor analysis yielded five different distinct factors, which means 5 different categories were found in users' preferences.

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Table 2. Results of the factor analysis

		1	2	3	4	5
Open Wide Streets						
	Photo 25	,784				
	Photo 24	,756				
	Photo 27	,706				
	Photo 22	,704				
	Photo 28	,703				
	Photo 26	,672				
	Photo 14	,666				
	Photo 30	,563				
	Photo 23	,479				
	Photo 15	,464				
Open Views						
	Photo 12		,667			
	Photo 4		,537			
	Photo 17		,524			
	Photo 31		,508			
	Photo 18		,507			
Open Intersections						
	Photo 10			,791		
	Photo 9			,647		
	Photo 6			,592		
Open Prospect views						
	Photo 2				,756	
	Photo 3				,737	
	Photo 1				,549	
Narrow closed streets						
	Photo 21					,772
	Photo 19					,582
	Photo 33					,519

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 8 iterations.

4.2. Comparison of the Categories

Later, the "One-way Anova" test was carried out to understand the differentiation between these categories. The results of the "one-way ANOVA" test showed that there was a significant difference between the five categories (F=15.829, p<0.001). The differences between the preference scores of the categories were derived by a Tukey HSD test. Results showed that Category 4 (Open Prospect views) ($\bar{x}$=3.86) was the most preferred category, while the second one was Category 2 (Open Views) $\bar{x}$=3.75. It was followed by Category 5 (Narrow Closed Streets) $\bar{x}$=3.53 and Category 3 (Open Intersections) $\bar{x}$=3.46. Finally, the least preferred Category was Category 1 (Open Wide Streets) $\bar{x}$=2,97 (Table 3 and Table 4.).

Table 3. Results of the one-way ANOVA Test

	Category	N	Mean	Std. Deviation	df	F	Sig.
Preference of the users	Open Wide Streets	10	2,97b	,22418			
	Open Views	5	3,75a	,21757			
	Open Intersections	3	3,46 a	,29455	23	15,829	,000
	Open Prospect views	3	3,86 a	,19852			
	Narrow closed streets	3	3,53 a	,15972			

a b Groups according to the Tukey Hsd test

Table 4. Anova results

ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3,149	4	,787		
Within Groups	,945	19	,050	15,829	,000
Total	4,094	23			

5.0 Discussion

5.1. Seeing Historic Environments Based on Categorization

Urban environments have distinct formations, a dialog between humans and landscapes. Categorization showed that prospect refuge theory is a critical element in understanding this dialog. The protected open prospect view category is a distinctive character that is different from street views and urban niches. Five different categories represent the distinction between urban characteristics. Streets differ based on their proportions. Open views and closed views are different in terms of user perception. Users make apparent differences between street and building proportions.

5.2. Meaning of the difference between Categories

The comparison of the categories can be clearly read as an indication that the relationship between the prospect-refuge theory and the thigmotaxis (Sussman & Hollander, 2021) is observed in historic urban areas in the users' perception. In this context, it does not seem like a coincidence that landscapes containing prospects are the most preferred landscapes. The findings of the study support the findings of Nasar (1994) and Dosen and Osswald (2016) studies findings. In this context, the process of actualization and the comparison of differences between categories can be used in historical urban areas.

6.0 Conclusion& Recommendations

The study reveals that the categorization process, which is generally applied to natural landscapes, can also be successfully applied in historical urban environments and is essential for evaluating perceptual categories in these environments. However, the study has certain limitations in some respects. The fact that fewer photographs were used in the study compared to other categorization studies and that the study was carried out in a smaller area compared to other categorization studies is a limitation that strengthens the internal reliability of the study, limits its external reliability, and creates a deficiency for generalizations. It is essential to evaluate the results of the study within the framework of these limitations.

The study results reveal that the perception of security in urban areas is essential in shaping user perception. Narrow closed roads significantly reduce the rates, and conversely, when open sheltered spaces see expansive landscapes, preferences increase significantly. In this context, closed, narrow streets create security concerns for users. In order to increase the preferences of users in such areas, the restorative and familiar power of nature can be integrated into these streets. As it is known, areas containing natural or natural elements are significantly more preferred than urban landscapes. The presence of natural elements in these narrow streets is an element that improves the perception of security for users and, accordingly, may lead to an increase in preferences for such places. Urban designers can harness the power of vertical gardens on these types of streets. The primary goal of designers in such spaces should be to emphasize green and natural elements. In this context, hugging climbing plants on these streets, in addition to pot designs, will be beneficial in reducing the negative impact of these streets.

It is recommended that urban decision-makers include holistic urban design practices in such spaces to increase the preferences for open views to a higher level. According to the results of the survey, Tophane Tea Garden, which is the most admired area, is used by many local and foreign users every day. It can be challenging to find a place in the cafes in this area, even on the weekend. In this respect, it is recommended that the perception of crowding in this area be studied in future studies. In this way, it will be possible to carry out a holistic urban design study in the area in a participatory spirit.

The study revealed that safety concerns in urban areas are decisive in user preferences. In this context, it is clear that the prospect-refuge theory developed by Appleton is critical in explaining preferences in natural landscapes and the perception of the built environment. Prospect refuge shows that people act with a sense of security in urban spaces and natural landscapes. It is recommended that researchers conduct research in the context of mystery, legibility, coherence, and complexity, which are components of Information Processing theory, another evolutionary landscape theory, in future studies.

Acknowledgment

Paper Contribution to Related Field of Study

Paper show a categorization process in a historical urban environment which has been done and seen in mostly for natural landscapes. Studies finding support the prospect refuge theory in a urban setting.

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