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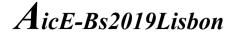
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Preferences for Doors of Vernacular Structures:
The Case Study of Kaleici

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Abstract
This study aims to find choices and a significant indicator which changes preferences of the doors of traditional Structures. Within the scope of this study, we investigated how the preference of entries, which is a transition interface between the urban space and structures, is affected by determined variables. As a result of the regression analysis, the results showed that the critical variables that are preferred, invite a degree of mystery by the existing literature. However, unlike the research literature, the result shows that complexity is not adversely predictive or useful in liking in the selected case study. It has been found that the preferred doors and entrance interfaces have natural materials, harmonious colors, vernacular architectural features, and common structural elements such as steps and eaves.

Keywords: Doors, Vernacular Structures, Kaleici

1.0 Introduction
The term aesthetics mainly relates to human psychology, and environmental aesthetics refers to the physical features of the environment, human psychology, and the interaction between humans and their environment. The environment and humans are interrelated. According to Maslow, the needs of humans can be classified according to their importance, and he explains this in his theory, which is called the "hierarchy of needs," with the help of a pyramid metaphor. The hierarchy of needs is a psychological theory that arranges human needs by order of importance in people's lives; there are five levels of need (Maslow 1954). However, researchers of this decade add a step to this pyramid. According to Porteus (1996), the sixth and last level of the pyramid is cognitive and aesthetic needs that are related to intellectuality and the desire for beauty. Aesthetic needs seem to be the least important among the others, though, for healthy living, all levels of needs should be satisfied. Thus, environmental, aesthetic research is essential in academic studies.

In order to make designs that are compatible with user experiences, it must understand the elements that affect their preferences. For this reason, psychologists and designers make studies to understand which individual and design features lead to differences and similarities in quality and aesthetic evaluation (Shulz 194, Rapoport 1977, Lang1988). Pals et al. (2014) examined the relationship between the physical characteristics of the environment and the perceived vitality, preference, appreciation, and renewal was resulting from the environment-human relationship. In natural environments, smooth forms and wooden materials preferred to sharp forms and

metal material in furniture, but whether the material is wooden or metal, it can be seen that furniture harms natural scenes. In the studies about building facades, Imamoglu (2000), Ikemi (2005), and Akalın et al. (2009) analyzed the relationship between the degree of complexity, liking, familiarity, mystery, and impressiveness with preference rates. It has seen that the liking and preferences form an inverted U-shape graph with complexity. Both liking and preference seem to be higher in the middle level of complexity (Berlyne 1972; Kaplan and Kaplan 1989, Kaplan et al. 1998).

The perception of an environment is highly related to the visual sense. An observer looking at a scene can see only a portion of the scene, and this depends on the physical features of the scene and the observer. When the human scale considered in the context of visual perception connected with the sense of sight, the first perceived surface of a building will be the ground floor of the facade. The entrance space is the place where the structure is in direct contact with the user and directs the user toward itself. The main element of the entrance area is the door. Doors form an abstract and concrete border, function as a separation between the interior and exterior spaces, and at the same time give an identity to the structure (İzgi & Aysel, 2003). Door design has been the subject of attention throughout the history of architecture. Doors used in temples and palaces in ancient Egypt, ancient Greece, and ancient Rome became a symbol of sanctity and inaccessibility (Izgi & Aysel, 2003). The dominant element of Anatolian Seljuk architecture is the door (İzgi & Aysel, 2003). The door, which provides a transition between spaces as well as security and insulation (İzgi & Aysel, 2003), is a building element that reflects the culture of the society that produced it. Bektaş (2004) defined the door as the heart of the house. Several factors play a role in the formation of entrance spaces.

Kaleici, which has a high cultural and historical value as a former settlement center of Antalya, was selected for the case study. In Kaleici, vernacular houses with single or double folded wooden doors were used in Turkish vernacular houses (Acar et al. 2010). Doors that were big enough to allow camels and horses to pass through them opened to the gardens, courtyards or "taslık," which is the front section before the main building where the ground paved with pebble stones in different patterns (Bektaş 2004). Door knockers were essential elements of doors and were used for decoration and as status indicators. There were cast-iron ring-shaped door knockers on each door fold; and as door knockers, hand, lion's head, eagle, and human head figures were used (Cimrin 2002, 2006).

In the study, entrance spaces and gates in urban cultural landscapes, which are an interface between architecture and urban texture, were examined. There was not any previous study on doors and entrance spaces for Kaleici in the literature. With this study, this subject was provided to take place in literature, and it was aimed to be a guide for new designs of entrance spaces in the future.

1.1.Research Questions
Is the preference for the doors of the Turkish vernacular structures related to its perceived degree of invitingness?
Is the preference for the doors of the Turkish vernacular structures related to Information Processing theory variables?
Is the perceived inviting degree of the doors of the Turkish vernacular structures is related to its preference degree?

1.2. Aim and Scope
To define preferences for the doors of the Turkish vernacular buildings in a case study of the Antalya Kaleici region
To test the applicability of the information processing theory in a different medium
To define relationships between perceived inviting degree and preference for the doors of the Turkish vernacular buildings

2.0 Material And Method
The Antalya province is situated in southwest Anatolia between the longitudes 29°20'-32°35' East and latitudes 36°07'-37°29' North. The city, located on the Mediterranean coast, is bordered by the Mediterranean Sea to the south and the Taurus Mountains to the north (Figure 1.).

Figure 1. Location of Antalya and Kaleici

The first settlement areas of Antalya's old city center are the Kalekapısı, Hanlar, Balbey, and Haşimişcan neighborhoods. In 1973, Kaleici was designated as a protected area by the Higher Council of Real Estates and Monuments, and, in 1979, the Kaleici Conservation Development Plan was approved for the region (Gül, 2006). The protection plan was revised by METU Prof. Dr. Mustafa Parlar from the Education and Research Foundation, and a revision construction plan was approved by the Antalya Conservation Board on May 13, 1992 (Gül, 2006). Today, in 2018, Antalya Metropolitan Municipality is working on a new Kaleici Conservation Development Plan revision (Anonymous, 2018, March 19).

The vernacular houses of Kaleici consist of two- and three-story buildings with overhanging windows and spaces. The history of the oldest houses dates back to the end of the 19th century. Local climate and lifestyles affected the spatial arrangements and formal design of vernacular buildings. The ground-floor plan of the buildings consists of courtyards and "taşlık," pebblestone paving with different designs. Pebble flooring is kept wet in the hot summer months to provide cooling (Acar et al., 2010).

The ground-floor plans of the buildings were made to match the street texture, and overhanging spaces were used on the upper floors to make the interior space even. The houses are built next to each other on both sides of the narrow streets of Kaleici. Overhanging spaces provide shade in the streets. Wood is preferred as a building material because it is easy to find in the region (Cimrin 2002). The building walls are made of mortar and rubble stone on the ground floor, and wooden materials are used on the upper floors, which are built using wooden beams. Woodwork is used in the doors and windows, and cut stones are preferred in the frames of the doors (Cimrin 2006; Uyar et al. 2004). Today, some of the wooden door folds that have disappeared have been replaced with metal sheets (Acar et al. 2010). Overhanging windows, overhanging spaces, windows, and doors decorate the facade and enrich the entrance space of Kaleici houses, which have simple façade features in terms of color and texture.

Two approaches have been used for measuring visual quality in the environment: the objectivist approach and the subjectivist approach (Lothian 1999; as cited in Tveit, Sang and Hagerhall 2015). The objectivist approach is based on the observed object and its quality; the subjectivist approach is related to the subject who observes the object. Daniel and Vining (1983) have developed five approach models to examine visual landscape quality: the ecological model, the formal aesthetic model, the psychophysical model, the psychological model, and the phenomenological model. Daniel and Vining (1983) suggest combining psychophysical and psychological models to create a reliable, valid, and useful landscape quality evaluation system (as cited in Tveit, Sang, and Hagerhall 2015).

In this study, entrance spaces and especially doors of Kaleici are examined in terms of the balance between psychophysical and psychological models. Because of these two variables, both physical features of the doors and perceptions about them are essential. Thus, the study has been divided into some main steps. Firstly, an axis is selected in Kaleici to analyze its doors. The selection of this axis is focused on buildings that can reflect the vernacular architecture of Kaleici depending on structural characteristics, integrity degree and length, and user density of the streets. Kaleici has three main axes, one of which starts at Kalekapisi and goes to the harbor; another starts from Yeni Kapi and goes to Kesik Minaret, and the last one starts at Hadrian's Gate and goes to the Hidirlik Tower (Figure 2.). The selected axis starts from Hadrian's Gate, which is one of the main city gates of Kaleici and ends at Hıdırlık Tower, which is a landmark of Kaleici near the sea because it fits with the qualities mentioned above. However, because of time and budget restrictions, it was hard to collect the data from users about preference and perceived, inviting a degree of the doors in fields one by one.

Figure 2. Axis from Hadrian's Gate to Hıdırlık Tower

As such, a representation with photos and drawings and a sample of the doors in this axis were agreed upon this. So, courtyards, gardens, and building doors have photographed from the front and street perspective views. A total of 32 doors photographed. However, some other elements with doors were on the scene, so to collect reliable data from subjects, 32 front view drawings was drawn and colored with computer-aided design programs. Then, 64 photos were rated by experts in terms of their complexity, mystery, legibility,

and coherence level. Sixteen experts rated 64 photos. The mean scores of each photo for each variable were calculated, and a 64x4 information processing theory matrix was gained. The help of the cluster analyses analyzed the cases of this matrix and classified into 16 main clusters. So, finally, there were 16 media items related to doors (both drawings and photographs) to represent 64 photos and drawings. These 16 media items were rated by 121 freshmen architecture students who were willing to participate in this study. First-year students rated these photos based on two variables, which are preference about media and perceived the inviting degree of the doors in the media. Then regression and correlation analyses were performed on the data. In the context of the samples, a survey is conducted with the help of an expert group to select the best photographs in terms of physical and aesthetic features. The selected photographs are digitalized in AutoCAD in order to analyze their physical features. Detailed drawings finished. A second survey is conducted to evaluate the psychophysical and psychological features of the selected samples. The entrance and door photographs were rated by pointing the adjectives.

3.0 Findings

3.1. Characteristics of Experts
Sixteen experts participated in the first survey (Table 1). According to the results, 11 of the experts are female, and the other 5 are male. The experts are divided into three groups according to age: 22–30, 30–39, 40–59. Twelve of the respondents are living in Antalya currently. The education level of respondents varies from bachelor level to Ph.D. Eight individuals are at the bachelor level, five who are at the master's level, and two who are at Ph.D. level. One of the respondents indicated his or her education level as "other." Respondents' experience in architecture was also various. Analyses indicated that eight of the experts had less than five years in the architecture field, while there was one individual in each group of 5–10 years, 11–20 years, and more than 21 years' experience in the occupation group.

From different cities in Turkey, 106 respondents participated in the freshman survey (Table 2.). According to the results of the analyses, 52 of the respondents were female, and 54 of them were male. Respondents' age varied from 22 to 39, while three of them did not indicate their ages. There were 100 respondents in the 22–30 age group and three respondents in the 30–39 age group. When respondents were asked about their experiences in the architecture occupation, 93 of them indicated they had less than five years of experience, and three of them indicated they had 5–10 years of experience while 10 of them said they did not have any experience in this field. In terms of education level, 94 of the respondents have a bachelor's degree, and 5 of them have a master's degree.
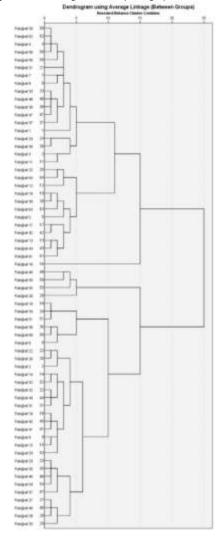
Table 1. Demographics of expert group

Gender	Female	Male			
N	11	5			
%	68.75	31,25			
Age	22-30	30-39	40-59		
N	13	2	1		
%	81,25	12.5	6,25		
City	Antalya	İstanbul	Van	Muğla	Adana
N	12	1	1	1	1
%	75	6.25	6.25	6.25	6.25
Education	Bachelor	Master	Ph. D.	Other	
N	8	5	2	1	
%	50	31.25	12.5	6.25	
Occupational Experience	Less than five years	5-10 years	11-20 years	More than 21 years	
N	11	2	2	1	
%	68.75	12.5	12.5	6.25	

Table 2. Demographics of the freshman group

Gender	Female	Male	
N	52	54	
%	49,1	50,9	
Age	22-30	30-39	-
N	100	3	3
%	94,3	2,8	2,8
Education	Bachelor	Master	Other
N	94	5	7
%	88,6	4,7	6,6
Occupational Experience	Less than five years	5-10 years	-
N	93	3	10
%	87,7	2,8	9,4

3.2. A sampling of media by expert views
The respondents rated 64 images (photographs and drawings) according to likeness, coherence, complexity, legibility, and mystery.

According to the results of the cluster analyses, linkage relations between image groups were established. Cluster scale 5 in figure 3 has been selected as a representative scale. Selected representative images of each group have been used for the freshman survey.

Figure 3. The linkage between photographs and drawings

A linear multiple regression analysis was done to reveal the variables, which were significantly effective in determining the liking degree of the entrance surface (Table 3). In this analysis, the psychological variables related to the entrance surfaces were examined. When the results of the multiple regression analysis were investigated, four attributes were found to be significantly effective in determining the liking degree of doors. The variables included coherence, complexity, legibility, and mystery (Table 3). The independent variables explained 94,7% of the variance in the liking degree of entrance surfaces ($F = 262,079$ df = 4-59 $p < 0,001$).

Table 3. Regression analysis of the variables useful in the liking degree of the entrance surface

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	-1,025	,291		-3,522	,001			
Coherence	,635	,093	,585	6,855	,000	,958	,666	,206
1 Complexity	,133	,055	,079	2,419	,019	,039	,300	,073
Legibility	,258	,124	,150	2,073	,043	,883	,261	,062
Mystery	,342	,087	,272	3,912	,000	,921	,454	,118

R=0,937; R2=0,947 F(4-59)=262,079 p<0,001

3.3. Freshman Surveys
A total of 16 images of both photographs and drawings have been chosen, which represents 64 photographs and drawings. Freshmen architecture students rated chosen images (Figure 4).

Figure 4. Preferences for entry spaces

Another linear multiple regression analysis was performed by liking degree of freshmen architecture students on the sample entrance surfaces as a dependent variable (Table 4). In this analysis, the perceived inviting degree, complexity, and mystery were used as independent variables. The results showed that there were two significantly useful variables on liking degree of the freshmen architecture students. These were perceived inviting a degree of the entrance surface and mystery degree of the entrance surface. Independent variables explained 60.7% of the variance on liking degree of the entrance surface (F=949.749 df= 3-1692 p<0.001).

Table 4. Regression analysis of variables useful on liking degree of entrance surface by freshman architecture students

Model	Unstandardized Coefficients		Standardized Coefficients			Correlations		
	B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
1 (Constant)	,616	,054		11,318	,000			
Inviting degree	,676	,016	,678	41,262	,000	,758	,684	,597
Complexity	,002	,017	,002	,107	,915	,179	,002	,002
Mystery	,172	,017	,168	9,891	,000	,489	,220	,143

R=0,772; R^2=0,596 F(3-1932)=949,749 p<0,001

4.0 Discussion

The study has parallel and distinguished findings from the existing literature. In particular, the fact that complexity does not have a significant predictor of liking is worth investigating for future studies. Especially when considering doors, it is thought-provoking that complexity is not sufficient. Many studies have shown that complexity is a significant predictor (Berlyne 1972; Kaplan and Kaplan 1989; Kaplan, Wendt, Kaplan 1976; Kaplan et al. 1998). However, it can be argued that the doors are more attractive with less detail. In the regression score, plus the value of the Beta coefficient indicates that the complexity is not a negative predictor, but it is also not useful. The most important finding of the study is to show that the most critical predictor affecting the preference in the doors is inviting degree. Inviting degree is the most critical variable in the liking of the door in terms of Beta coefficient and meaningfulness. Previous studies indicate that color, vegetation, historical elements, and overall upkeep affect the inviting degree of the physical environment (Bringslimark, Hartig, Patil 2009; Hidayetoglu, Yildirim, Akalin 2012; Cauwenberg et al. 2014). Findings show that two folded vernacular doors with stone walls have a high inviting degree. Structural elements such as steps and eaves also have a positive impact on invitingness. However, vegetation was not significantly sufficient for the invitation. Another essential variable was a mystery. The mystery is defined as a decisive variable in many studies because it encourages exploration of the environment (Kaplan and Kaplan 1989; Kaplan et al. 1998). Two variables, both inviting and mystery, are thought to be related to one another. The allure of curiosity is an essential source of stimulation for people to get information from the environment. As is known, exploration is a necessary impetus in evolutionary terms that provides environmental advantages for human beings and makes people human (Kaplan et al. 1998). This study also contributed to the literature in that it shows exploration instinct is an essential impetus on preferring space in city centers.

5.0 Conclusion

The present study examined variables affecting preference and liking of doors. These variables, which are based on perception, were complexity, legibility, coherence, mystery, and degree of invitingness. As a result of the study, various elements that can increase liking and preference for doors and entrance interfaces have been determined. The use of natural and vernacular materials, including vernacular architecture features, increases liking in historical urban contexts. Facades enriched with the use of plants and lighting elements attract humans. It turns out that the degree of invitingness is the most important variable that affects the liking of the doors. When looking at the door with a high inviting degree, it is noteworthy that they have similar materials and similar structural characteristics. It is possible to increase the invitingness with the use of natural and local materials such as cut stone and wood. At the same time, the use of structural elements such as eaves, steps, and elements that give a feeling of going into the facade also affect the degree if invitingness positively. The high contrast values of color and lack of maintenance are factors that affect both the invitingness and the liking negatively. The mystery is the most effective variable after the degree of invitingness. It is observed that green facades can enhance the mystery. The facade hidden by planting motivates exploration.

This study has left some questions to be searched for future work. For example, what level of complexity is sufficient for doors is an inquisitive question to research. On the other hand, whether or not mystery and invitation are essential predictors in modern doors should also be investigated by future studies. These investigations will contribute to the science in terms of whether vernacular doors are formed within their circumstances or whether these variables are valid for modern doors.

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