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Preferences for Facades of Historic Building: Example of Gevaş, Turkey

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Abstract
In this study, research of Akdamar Church, İzzettin Şir Mosque, Halime Hatun Vault, Altınsaç Village Churches, St. Thomas Church, Garmravank Church and Deveboynu Monastery located in the Gevaş district of Van province in Turkey.Facades of historic buildings are a valuable aspect of the historic landscape aesthetics despite on that literature about the facades of this type of buildings is rare. 412 questionary has been done in online sessions. Results showed that restored building facades have more preferred than others, factor analyses yield 3 different factors based on the preference scores. Based on the preference for photos and photo ratio analyses, regression analyses have shown doom and tree ratios are a significant aspect of the preference for historic landscapes. Results showed preservation is an essential aspect of the preferences of Historic buildings.

Keywords: Historic Building; Building Facades; Preferences; Factor analysis

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1.0 Introduction

Cultural landscapes are common tralatitious heritage assets which born from interaction between humans and nature (Mutlu 2012). Depend on the geographical conditions and culture, various cultural landscapes types and heritage buildings styles become existence all over the globe. Differences and characteristics properties of the cultural landscapes are an answer to the geography of historical communities. These differences of cultural landscape fabrics manifest itself by uniqueness and characteristics properties. Turkey has many different cultural landscape assets which was heritage of the different cultures who visist the Anatolia (Little Asia) throughout history. Because of them in Anatolia there is multi-layered and multi-dimensional cultural landscapes in different regions and in various part of within the regions. Van City is an important region in the east part of the Anatolia which is main entrance site on the Little Asia from the eastern highlands and there has been many different cultures lives throughout the history. In ancient times Urartuians, then Romans and Byzantium empires and after that Armenians and Seljuks finally Ottomans and Modern Turkish republic settled in this region and many different heritage buildings are left from this different cultures. The Van Gevaş area in Turkey has many historic buildings and ruins which has been built throughout history.

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1.1 Aims Scope and Objectives

The starting point of the study is to investigate the relationship between physical measurement of facade variables, which is an adaptation of the psychophysical method used in preferences for landscape, and preferences and tastes, which are psychological variables. The relationship between a subjective variable such as preference and a physical variable such as the facade of the building is important in terms of understanding the relations between subjectivity and objectivity.

In this context, in this study, it is aimed to reveal suggestions for the building and its environment, ie framing and presentation of the facades in the entire cultural landscape, in order to improve the tourism perception, not only at the building scale. In this study it is aimed at to find perceptions of the users about heritage buildings facades variables and their general preferences for this type of buildings. To achieve this aim 7 different heritage buildings all of the facades has been photographed and 28 different photos have been gained. With the help of the photo based questionnaire public preferences about the facades has been collected and analyzed.

2.0 Literature Review

In order to understand present of a society, it should know the history, identity and based on this it can be to predict its future, the concept of landscape, which is a cultural transmission tool and also has cultural heritage values, can be looked at (Taylor, 2008). Almost all of the natural areas on earth have been affected by people's relationships with nature. Today, most of the existing landscapes are within the scope of cultural landscape (Baylan, 2019). In order for a place to be within the cultural landscape, it must create important works as a result of the bond between nature and human beings, and these works must be compatible with each other. The sense organs give information about the places and environments in which people live. However, all of this information is transferred by people in the conceptual idea environment. For example, the wetness of the water, the hardness of the stone, the freshness of the vegetables, the scent of the flowers, the rhythm of a music. For this reason, people take an approach that reduces the environment to a visual scale in the perception of spaces. Spaces are perceived by the senses of sight, hearing, hearing, smell and touch. The most powerful perception element among the aforementioned senses is the sense of sight (Guvenc, 1976). According to Gestalt laws, some of the elements of the eye in the visual environment tend to be classified as "whole" or "similar". Symmetry, closure, direction, proximity, repetition and similarity are the factors that affect the sufficient or insufficient sense of the environment. For Gibson, the images appearing on the retina of the eye and the symbols perceived are separate from each other. The first is called the "field of view" and the second is called the "view world" (Altan, 2012).

The concept of aesthetics in the environment also requires a general perception. At times, the senses of hearing, touch, and smell may take precedence over the sense of sight. While designing a space, the echo of the sounds, the smell in the environment, the tactile effects arising from the spaces should be considered (Meiss, 1986).

2.1. The Concept of Time in Spaces

The concept of time and space are not products of their own accord; It is a form of human beings' ability to understand, the world they understand, the world of senses (Heimsoeth, 2007). In fact, the concept of time creates a dimensional confusion since it is not a tangible three-dimensional perception such as height, width and height that describes the shape and dimensions of the space, and because it is an idea created in the mind. The most appropriate explanation for this situation is; time is a result of people's perception and it is a concept that emerges with these perceptions. A time is required for the perception of an architectural space, this time exists in direct proportion to the observer, differentiates as the observer differentiates, and disappears with the observer. A created environment is a reflection of time belonging to the past or the future, as all elements of architectural spaces are products of architecture (Altan, 2012). In short, places are important for people for many different reasons, and many of the values they attribute to places are personal and perhaps subjective. They are important for local, personal and collective identity and quality of life. They are also an economic resource and valuable because they embody the time, effort, material and energy resources invested by past generations (English Heritage 1997; Countryside Commission et al., 1997; Rural Agency et al., 2001).

3.0 Methodology

3.1 Material

The study will be carried out in 7 different historical buildings in the Gevaş district of Van province, which has a population of 28,242 according to 2020 data. In this context, 28 façades of 7 buildings are one of the main materials of the study.

The main criteria for choosing the study area as Gevaş district are that it has many historical buildings from different civilizations and periods, Gevaş district is a qualified cultural landscape area due to its location, and the Akdamar Island Church, where many foreign visitors spend time in the area, is in this region.

3.2. Method

The study has be carried out totally in five stages. In the first stage, office work was carried out. Within the scope of office studies, the existing literature was scanned, information about the buildings was obtained, and this information was examined in the studio environment, and as a result of compiling these, it was determined which facade features would be considered as variable. The proportions of the elements in the frame were accepted as variable as a physical variable.

The second phase of the study consists of spatial studies and photo shoots of the facades. In this context, in the light of previous spatial evaluations, on-site evaluations will be made in cultural landscapes and the images of the facades that meet the appropriate criteria were obtained by taking a camera to be used in the survey. Images to be used in the survey were created with 28 facade photographs taken in the third stage of the study, and these were questioned with the question of appreciation. In the context of these photographs, the hypotheses to be tested in the questionnaire were determined and the questionnaire was designed accordingly. At the end of this stage, most of the material method section of the thesis has been written. The fourth stage of the study is the application of the questionnaires. In this context, the questionnaire was applied to 412 people selected from the field, using the online questionnaire technique, on the internet or in the computer environment. Random sampling method was used to determine the sample size. The fifth stage, which is the last stage of the study, consists of the evaluation of the questionnaires and the preparation of the results and recommendations. In this context, statistical analyzes such as correlation and regression tests, Factor Analysis, one-way anova and t-test were applied in the questionnaires. In the context of the results of the analyzes, conclusions and suggestions were made, the place of the study in the literature was determined, and the findings were discussed in the context of the limitations of the study.

4.0 Findings

Within the scope of this study, 412 users participated in the survey. The majority of users are women and the younger generation, while 61% of users with a undergraduate education. And also as a result of the researches, the majority of the users who participated in the survey did not receive training on design and cultural heritage. The buildings with the highest rate of appreciation of the users are generally those that have survived to the present day or have been repaired and restored.

The average of the ratings of the 28 photographs asked in the survey was taken, and accordingly, the photograph with the highest average was Photograph 15, where the northern façade of the Akdamar Church is located. The least liked photograph was Photograph 18, which is the facade of Altınsaç Church with the concrete insert. The average of the photos is generally high. The average of all 28 photos is 3.78. Photo 15, which is the most liked photo, has an average of 4.57, while Photo 18 with the least likes has an average of 2.92. In order to understand the photos in more detail, the 5 most liked photos and the 5 least liked photos are commented below.

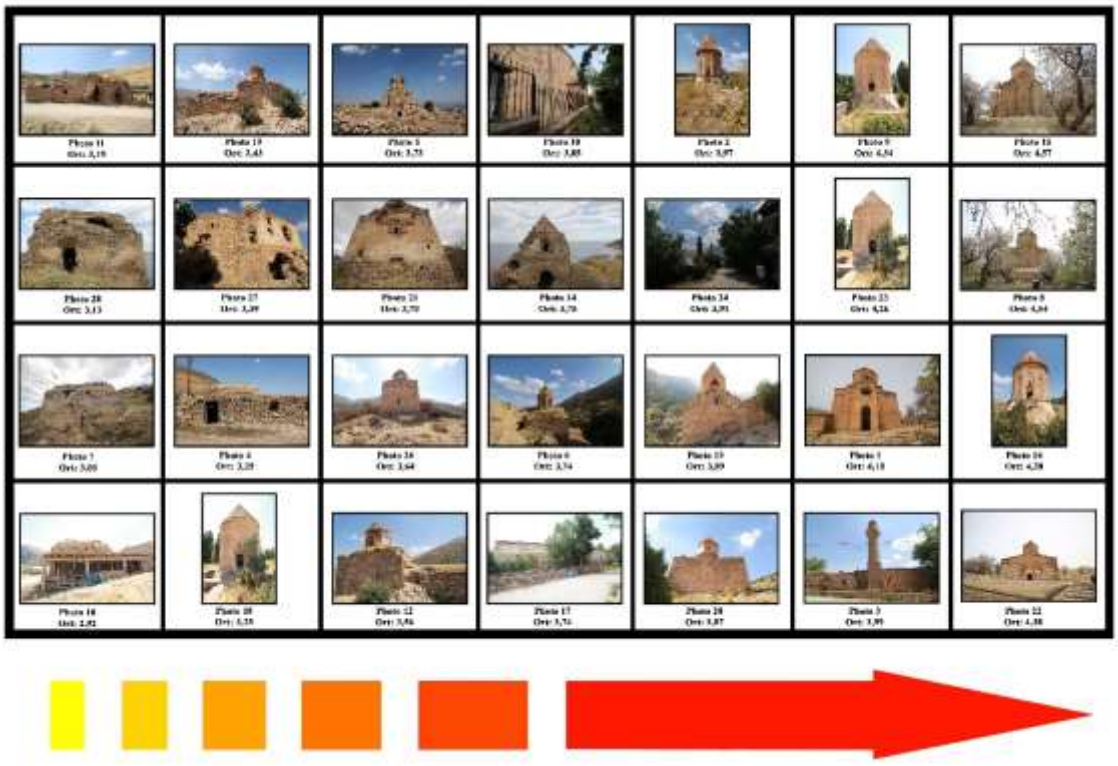

Figure 1. All photos based on the mean scores

All the photographs were subjected to categorization process in order to analyze the hypothetical relationships between the like scores specified for the photographs used in the research and to explain as many photographs as possible with the least possible variables. This process was carried out with the help of factor analysis applied to 28 variables consisting of the appreciation scores of the users for the photographs of cultural landscape elements.

Herzog et al., (2000) argue that conceptual categorization studies can be misleading in narrow sampling or small-scale subgroups (N<130) in line with their studies, and in this context, they do not recommend categorization in such samples. However, 412 users participated in the study, which is quite sufficient and a good number. The high consistency among 28 variables (Cronbach α = 0.969)

in the measurement of the consistency of the 28 photographs by the users also indicates that the users make their choices consistently, making it possible to test the factor analysis.

At the end of the trials, the KMO value was quite high (KMO=0.966) and this value was within the range defined as very good (between 0.90 and 1.00 was defined as excellent), besides, according to the Barlett sphericity test, the data set was suitable for differentiation (p<0.001).), it was decided to give this analysis by explaining it here (Table x). In the factor analysis performed at the last stage and it was determined that these 28 photographs could be grouped under 3 categories. In addition, these 3 factors represent 69.47% of the data set cumulatively.

The number of important factors in the analysis was defined as 3 according to the eigenvalue criterion. This situation reveals a different situation in the line graph drawn according to the eigenvalues (Figure 2)

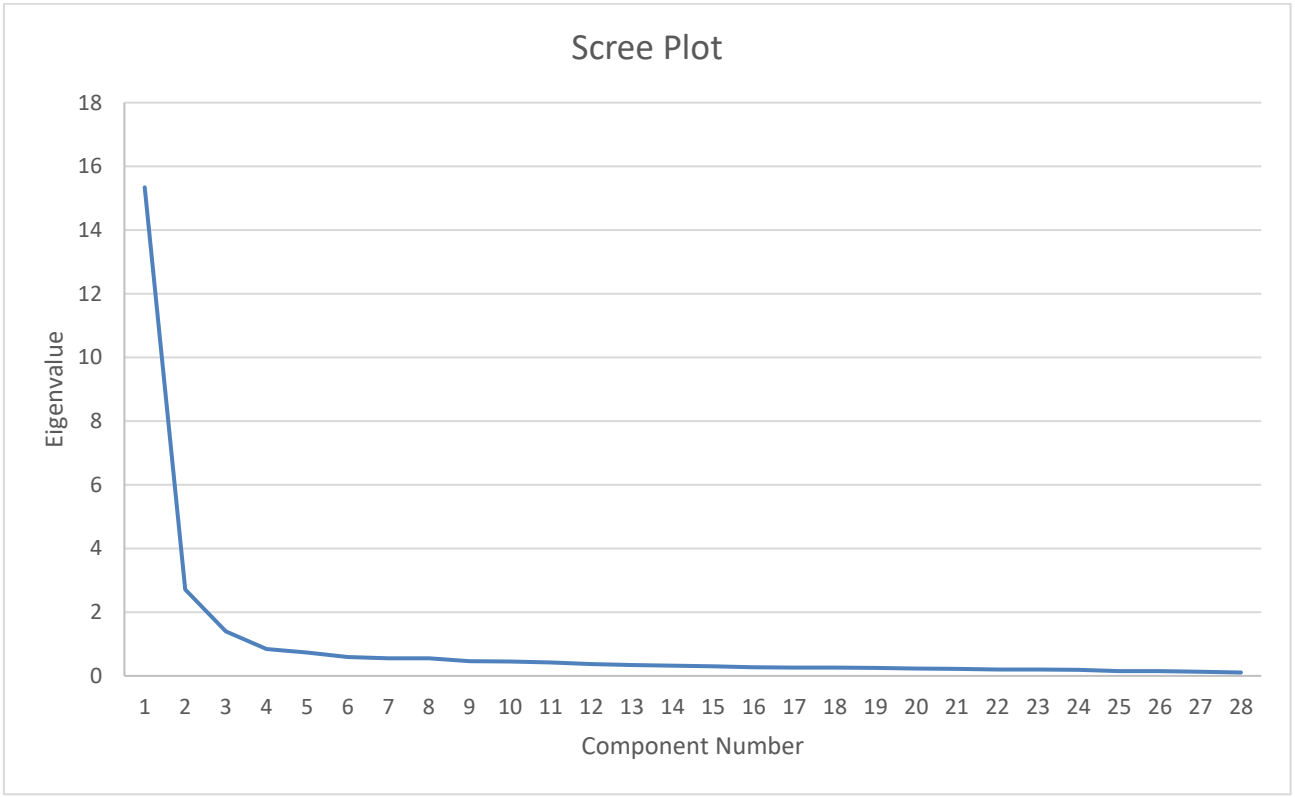

Figure 2: The line graph formed as a result of the factor analysis applied to the appreciation scores of the users for the photos of cultural heritage

Table 1. Results of Factor analyses and categorization

Categorization based on Factor analyses				
	1	2	3	Cummulative
Category 1 Deficient, decrepit and need repair structures				
Photo 28 (Deveboynu)	,876			0,830
Photo 7 (Deveboynu)	,829			0,811
Photo 19 (Khramvark)	,823			0,811
Photo 11 (Altınsaç)	,823			0,816
Photo 25 (Altınsaç)	,813			0,729
Photo 27 (St. Thomas)	,807			0,760
Photo 12 (Khramvark)	,785			0,777
Photo 14 (Deveboynu)	,771			0,723
Photo 18 (Altınsaç)	,756			0,776
Photo 5 (Khramvark)	,728			0,688
Photo 4 (Altınsaç)	,728			0,636
Photo 21 (Deveboynu)	,719			0,726
Photo 26 (Khramvark)	,690			0,692
Photo 13 (St. Thomas)	,672			0,692
Photo 6 (St. Thomas)	,638			0,674
Category 2 undamaged façades that do not need restoration or remain intact.				
Photo 16 (Kümbet)		,807		0,715
Photo 15 (Akdamar)		,782		0,638
Photo 8 (Akdamar)		,769		0,670
Photo 23 (Kümbet)		,742		0,661

Photo 9 (Kümbet)		,715		0,607
Photo 2 (Kümbet)		,671		0,625
Photo 1 (Akdamar)		,657		0,529
Photo 22 (Akdamar)		,596		0,516
Photo 20 (St. Thomas Ön)		,525		0,663
Category 3 Izzettin Sir Mosque				
Photo 17 (Hüsrev Paşa)			,810	0,778
Photo 10 (Hüsrev Paşa)			,768	0,744
Photo 24 (Hüsrev Paşa)			,633	0,562
Photo 3 (Hüsrev Paşa)			,578	0,590
Variance %	%35,2	%22,5	%11,6	%69,47
Eigen Value	15,341	2,712	1,399	

4.1. Testing the average of users' likes according to the categories of users' tastes

The results of the analysis show that there is a significant difference between the categories of appreciation in terms of factors in the grouping of the appreciation scores of the users for the cultural landscapes, that is, some categories are liked more than the other categories, F(2-25)=28,535, P<0.01. In other words, the preferences of the users change significantly depending on the categories, and the category 2 appears as the two most popular categories.

According to the results of the Tukey test, which was conducted to find out between which groups the differences between the categories were, Category 2 restored or intact Facades ($\bar{x}$=4.28) were more likely to be compared to Category 3 Madrasa facades ($\bar{x}$ =3.88). It has been determined that the preference of these factors is higher than Category 1 Facades That Have Not Been Repaired Yet ($\bar{x}$=3.44). As a result of this analysis, three main groups were formed according to the Tukey classification. Category 2 alone was the most liked group, while Category 3 was in the moderately liked group. Category 1 alone represents the least liked group (Table 4.5).

4. 2. Questioning the effect of the elements in the frame on the appreciation scores

After the regression analysis, it was revealed that 2 of the items in 12 different frames significantly predicted taste. In this context, stepwise regression helps to obtain more effective and more meaningful results because it only explains the dependent variable with significant independent variables. In this context, according to the results of the analysis, the roof is the independent variable that predicts the taste the most. With a coefficient of 0.283, every increase in the roof ratio also causes a significant increase in general appreciation. When considered from this point of view, the roof of Akdamar church is quite impressive in photo 15, which is the most liked photo. In addition, it emerged as a significant independent variable in tall plants with a coefficient of 0.010 in the analysis. Again, tall plants in photo 15 are the best example of this. As a result of the analysis, the liking can be reached from the following regression formula.

Table 2. Results of Regression analysis

Object in the frame	R	ΔR2	B	SHβ	β	T	p
1.Roof	0,611	0,374	0,283	0,076	0,552	3,737	0,000
2.Tall Plants	0,688	0,100	0,010	0,005	0,322	2,184	0,039
Constant	-	-	3,469	0,093	-	37,217	0,000
Total: R2 = 0,432	F (1, 25)= 11,261	P=0,000					

User Cultural Landscape Rating= 3,469(Fixed)+0,283(Roof)+0,010(Tall Plants).

5.0 Discussion

The method of the study is basically the adaptation of Orians (2001)'s aesthetic preferences study on savanna trees to historical building facades. However, only three studies that are closest to the study were found in the current literature on historical fronts, and these three studies were found to be different from the planned study in terms of method. In the study of Serra et al. (2021), six high-rise structures that disrupt the visual effect among the traditional average five-storey buildings of the city, which the local government accepts as illegal by the local government around Valencia's Serranos Towers, were examined. For these structures, 5 different scenarios have been developed, each with a different facade proposal. These 5 scenarios have been designed considering the conceptual issues of visibility/invisibility versus new place identity/disappearance in visual integration. In order to assess the tendency to interfere with the field, the participants were asked to answer a questionnaire as agree/disagree to vote from one to five. Frequency analysis for each scenario, analysis of tools for each scenario, discovery of evaluation differences between groups and analysis of intervention susceptibility were conducted, consisting of a total of 4 steps. This study, which proceeded through the scenario created by considering mostly conceptual issues, shed light on my work in terms of analysis and suggestion methods.

6.0 Conclusion & Recommendations

The preference for the photographs of the cultural heritage structures examined within the scope of the study revealed a decisive finding. Accordingly, the restoration and protection of the cultural heritage structure leads to a significant difference in the appreciation of the users and the users like these structures more. This is also confirmed by the categorization process in which preference patterns are revealed. Accordingly, the photographs of the facades of buildings that have been repaired or have solid facade features have emerged

as a distinctive, characterful and illuminating category. In addition, the one-way anova tests have also revealed that these repaired facades are the most popular building facade category.

According to the regression analysis, the presence of the roof and the presence of tall plants in the photograph significantly affect the appreciation positively. Accordingly, it can be argued that the fact that the roofs are repaired and that there are tall plants in the environment contribute to a more positive perception of the cultural heritage element as a landscape and to increase the preference for it. It is important to place plant species suitable for the proportions of the building, considering the building facade perspective.

Restoration of cultural heritage is considered important both in terms of protecting and keeping alive and transferring it to future generations and improving existing tourism values. Restored facades are more appreciated and preferred in terms of aesthetics and provide a different attitude compared to other damaged facades.

In terms of both emphasizing the cultural richness of Van and its contribution to the Van economy, it is important to protect the churches in Garmravank, Altınsaç and Deveboynu Peninsula, to prevent more illegal excavations and to keep them alive.

The presence of untouched coves in the existing environment, changes in vegetation cover due to microclimate, difficulties in terms of transportation, provide different recreational activities and opportunities. Planning a cultural, natural, recreational and social space by preventing damage to the area by planning the space in the context of the recreation opportunity spectrum and calculating the carrying capacity in the context of acceptable change limits (limit of accestable change) can both contribute to the local people and It will also contribute to the formation of a brand destination in the country's tourism.

Acknowledgement

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Paper Contribution to Related Field of Study

Paper contributes in term of the aesthetics of the model pyscho-physical estimation in cultural heritage field.

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