The Relationship Between the Adorability of Urban Landscapes and Their Users Demographic Variables: The Case of Edremit, Van/Turkey[#]

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Abstract: It is shown in the literature that people want to be more in preferred places and spend their time better when they are in the preferred place. User input is needed for evidence-based design that has developed in recent years. The determination of user preferences containing demographic information about urban landscapes creates important inputs for landscape architects and city planners. Van / Edremit district, which is considered rich in landscape assets, has made the distinction between the new settlement and the old settlement in terms of urbanization in recent years. In this study, the attitudes of different social groups towards the space were investigated in determining the preferences of Edremit for urban landscape and it was aimed to make suggestions for the improvement of the urban landscape. For this purpose, analyzes were carried out to understand what demographic information affecting likes. Visual survey technique, which is applied with visuals and used to determine the perception of the user towards the space, is the main method of the study. The questionnaire was applied to 400 people, and according to the results of the analysis, it was seen that the level of education and income increased and the likes of the senior occupational groups significantly decreased.

Keywords: Demographic variables, urban landscape, user preference, Edremit, Van

Introduction

Landscape is a whole where we spend an important part of our daily life while we are working, traveling, eating or relaxing, even if we are watching from a distance, we feel. People want to stay in preferred places more than non-preferred places (Nasar, 1992; Kaplan *et al.,* 1998; Gulgun *et al.,* 2014; Surat, 2017). Sometimes in preferred places, users can explicitly reject the changes that are considered to be made by the administrators. However, in spaces that appeal to different users, it is one of the designers' duties to predict possible conflicts between users and managers, and to prevent these conflicts with space planning and design. Therefore, understanding the preferences regarding the spaces is important for the designers and planners who are the creators of the space (Aşur and Alphan, 2017; Oktay, 2017; Benliay and Altuntaş, 2019; Sezen *et al.,* 2019).

In fact, preferences are related with liking, which is closely related to the aesthetic doctrine that produces thoughts on liking. Urban landscapes are perceived differently by people with their values (Ekşioğlu, 2010; Yazıcı and Kiper, 2019). Many variables are effective in users' visual perceptions and preferences. Most of our perception is based on visual perception. Most of the people perceive the world by seeing. In addition, one third of the brain consists of nerves that work with respect to the eyesight. Perception, which is defined as the process of obtaining various information from the environment, varies according to individuals, its demographic characteristics (age, gender, occupation, education, income, etc.), culture, environment and the social group in which it lives affect the perception (Bozhüyük, 2007; Eagleman, 2013). Therefore, photographs, slides or images in various formats are used in environmental studies. This requires sampling of the environments and landscapes. In the evolutionary based theory developed from landscape choice theories that stand out in landscape aesthetics, information processing theory (Kaplan and Kaplan, 1989) stands out.

The province of Van has a rich landscape in terms of cultural, natural and historical heritage. It can be defined as a period in which the urban development dynamics of Van City changed after the

period of Van earthquakes in 2011. Edremit district has been shaped under the influence of many civilizations and cultures for centuries. Edremit district is under the influence of processes such as population growth, natural disasters, internal and external migration, security, economic deficiencies, insufficient human resources, ignoring the value and sustainability of the natural, cultural landscape of short-term economic development efforts. The aim of this study, which has been carried out in Edremit district, one of the central districts of Van, which has been experiencing a rapid urbanization process in recent years, is to question whether there is a meaningful difference in likes for urban landscapes according to demographic characteristics among users. The data obtained will contribute to professional disciplines such as landscape architects, city planners and architects in sustainable urban landscape planning and design studies. In addition, municipalities and other city stakeholders will have the ability to predict new urban developments based on the findings from this study.

Material and Method

The main material of the study is Edremit district in Van province in Eastern Anatolia Region/Turkey. The district has a hilly land form rising to the south from Van Lake. Edremit has a settlement starting from the Van Central border to the Gevaş district along the Van Lake coastline (Anonymous, 2019). The location of the district follows the coastline and the length of the district center varies between 24 km and the width between 16-18 km (Figure 1). In this study, various old and new settlements in the district and natural and structured landscapes of their close surroundings are discussed. In addition, the census data related to the area, literature on landscape and environmental aesthetics, photographs taken in the area, survey data are the main materials of the research.
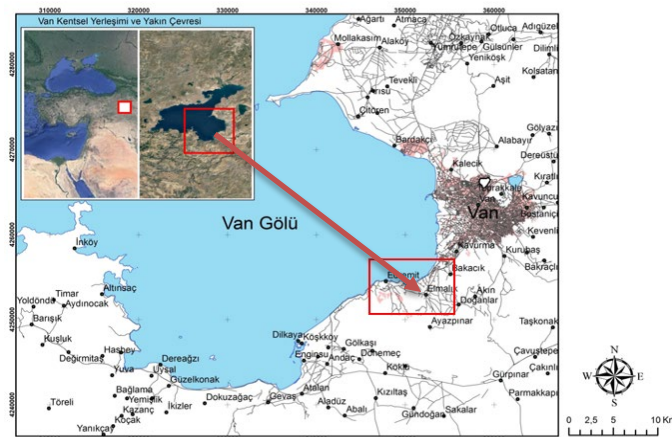
**Figure 1.** Location of the study area (Edremit/Van)

This study has been tried to be realized with visual landscape evaluation techniques. The main method of the research is the visual survey technique, which is applied with visuals and used to determine the perception of the user towards the space. In this context, based on the information processing theory, four features that are effective in environmental preference; In terms of consistency, complexity, legibility and mystery (Kaplan *et al.*, 1998), visual preferences of the users were determined in the urban areas of Edremit district. According to the results of the address-based census, Edremit district's population in 2017 consisted of 124.375 people. According to the sampling calculation made for p = 0.5 q = 0.5 with a simple random sampling method of ± 0.05 sampling error, it is foreseen that at least 400 surveys will represent the district within the specified deficiencies. In the study, photography was used as a valid method in visual landscape assessment (Hall, 2001; Clay and Smidt, 2004; Kalın, 2004; Çakcı, 2007). Different photographs were taken by taking the views of the city's urban and urban green areas at different rates. The 1012 photographs obtained were classified according to their content and 258 photographs were selected for the sampling survey as a result of the elimination carried out in the context of their contents. The sampling questionnaire was sent to experts on the internet in five parts and 5 experts were asked to score 5 items under the titles of likes, consistency, complexity, legibility and mystery for each photograph in the context of 5-point likert scale formal aesthetic variables. When the experts completed the scoring, the data matrix obtained by taking the average of the points given was coded into the SPSS program and hierarchical cluster

analysis was performed. One-way Anova, correlation and regression tests were applied on the data collected in the survey. With the regression models to be created, formal aesthetic variables that are significant predictors in the preferences regarding the urban area were determined.

RESULT
Users' rating of photos

51 photos selected from the photographs taken from the urban landscape area of Edremit / Van were presented to 400 users with the photo survey method. As a result of the analysis, 5 most liked photos were revealed (Figure 2). In this study, it is revealed that the most admired images are areas that are rich in vegetative terms.
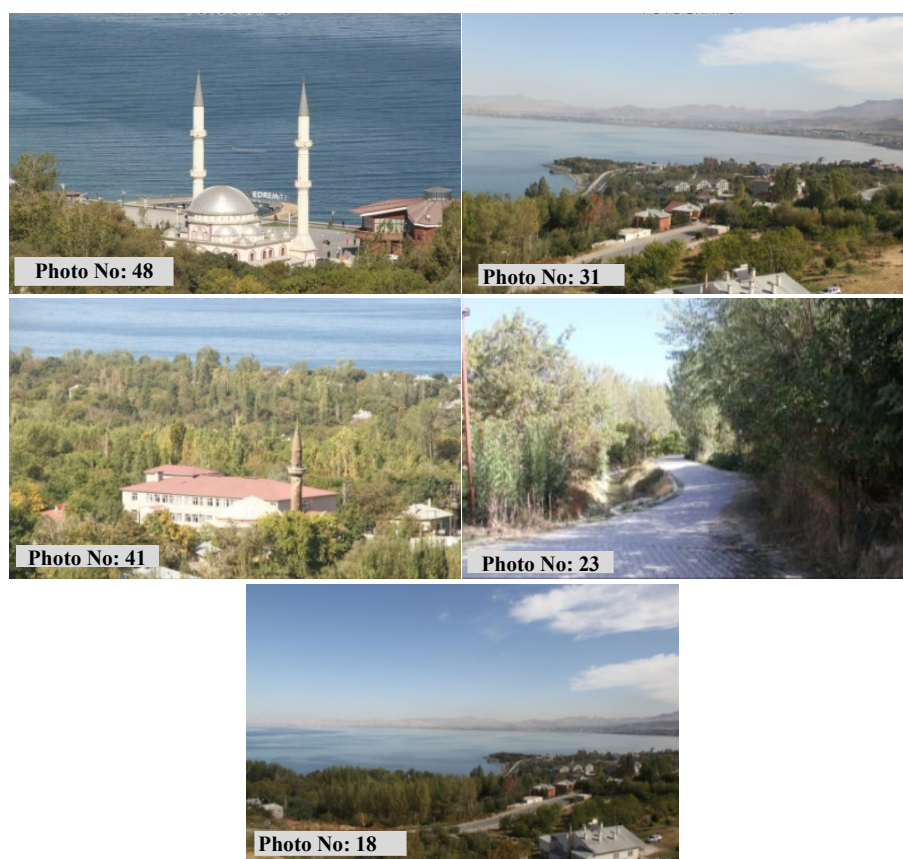
Figure 2. The top five visuals according to the users' rating points

Photo 48 of the images used in the study is the most liked visual by the users with an average score of 4.24 as a result of the users' rating. The scores of the 5 most liked images are given in Table 1.

Table 1. Scores of the most liked photos as a result of the survey

Edremit/Van Urban Landscape Areas					
Photo No	48	31	41	23	18
Average Score	4.24	4.16	4.12	4.00	3.99

Demographic information in the evaluation of user surveys: The demographic information of 400 users surveyed is given in Table 2. Accordingly, 66% of the participants are women and 33% of them are men. One user did not answer the gender question. Considering the age distribution of the participants, it is seen that 37% of the participants are between the ages of 15-18, 38% are in the age range of 19-29 and 14.0% are between the ages of 30-49. Participants between the ages of 50-65 constitute 8.3%, while 10 (2.5%) of the participants are over 65 years of age. One user did not specify his age. In terms of education while 10 users (2.5%) of the respondents are in primary school, 134 users (33.5%) are at the undergraduate level, 28 users (7%) are at the graduate level, and 16 users (4%) are at the doctorate level. In terms of job one user (0.3%) of the participants worked in the

private sector, 14 users (3.5%) worked in the private sector, 5 users (1.3%) self-employed, 39 users (9.8%) civil servants, 3 users (0.8%) tradesmen, 13 users (3.3%) retired, 285 users (71.3%) students, 17 users (4.3%) housewives, 2 users (0.5%) while unemployed, 18 users are in the other category. Considering the monthly income of the participants, it was observed that 250 users (62.5%) had a minimum wage and below, 38 users (9.5%) had an income of 4501 TL and above it and 43 participants could not report on monthly income.

Table 2. Demographic distribution of users surveyed

Gender	Female	Male	Other								
N	267	132	1								
%	66.8	33.0	0.3								
Age	15-18	19-29	30-49	50-65	65 and above		Other				
N	148	152	56	33	10		1				
%	37.0	38.0	14.0	8.3	2.5		0.3				
Educational Status	Readers / Writers	Elementary School	Secondary Education	High School	Associate Degree	Bachelor graduates		Master	Doctorate		Other
N	0	10	11	165	34	134	28		16		2
%	0.0	2.5	2.8	41.3	8.5	33.5	7.0		4.0		0.5
Job	Worker	Private sector	Self-employment	Officer	tradesman	Retired	Teacher	Housewife	unemployed	Other	lost
N	1	14	5	39	3	13	285	17	2	18	3
%	0.3	3.5	1.3	9.8	0.8	3.3	71.3	4.3	0.5	4.5	0.8
Monthly Income	Minimum wage and below	950-1,500 TL.	1,501-2,500 TL.	2,501-3500 TL.	3,501-4500 TL.	4,501 TL. and above	Other				
N	250	16	18	16	19	38	43				
%	62.5	4.0	4.5	4.0	4.8	9.5	10.8				

Relation of demographic variables and all rating scores

In this study, a regression model was tried to be established in order to measure the differences among the subgroups of likes. For this, all the likes scores and the demographic variables opposite are written one after the other and a data matrix with 20400x5 porosity is created. In this regression model, liking scores are defined as dependent variables. With the sequential scale data (such as age, education level, monthly income), the variable of being a woman and being a student is defined as a dummy variable as 1-0, and a stepwise regression model was created with 5 independent variables in total. The results of the analysis are shown in Table 2.

Accordingly, the stepwise regression analysis, which was conducted to find out what demographic information affecting the likes, was completed in 3 stages. It is seen that occupation, education level and monthly income, which are 3 demographic features, are important factors in terms of their contribution to appreciation of the space shown in the photograph. In the first step of the analysis, the occupation variable, which explains 1.8% of the variance of the liking of the place in the photo, was taken. When the regression coefficient sign of the profession variable is examined, it is seen that it is negative. In other words, the increase in the upper occupational group causes a decrease in likes. If this variable is considered as the dummy variable, it is concluded that the students significantly liked the places less than the other profession groups. In the second stage, the educational status variable that makes a significant contribution to the explained variance is taken. The educational status variable contributed 0.3% to the explanation of the variance related to the liking of the place shown in the photograph. When the regression coefficient sign of the educational status variable is examined, it is seen that it is negative. In other words, as the education level increases, the level of appreciation decreases. In this context, it can be said that those who received higher education significantly liked the place shown in the photo. In the third stage of the analysis, monthly income variable was included in the analysis. The monthly income variable made a 0.01% contribution to the explanation of the variance related to the liking of the place shown in the photograph. Regarding the sign of the regression coefficient, it is seen that it is negative. Although the monthly income variable makes little contribution (0.01%) in explaining the variance related to the liking of the place shown in the photograph, it still appears as a significant variable in explaining the appreciation. When the regression coefficient of the monthly income variable is analyzed, it is seen that the coefficient takes

negative value. In other words, individuals from the upper income group significantly like the space shown in the photographs.

Accordingly, three demographic features (Profession, Education, Monthly income) are seen as a significant factor in the regression model. In other words, the demographic characteristics of the subjects that affect the liking of a place created with plants are Profession, Education and monthly income (Table 3). As a result of this analysis, the liking of a place can be achieved with the following formula;

User Likes = 3.601 (Fixed) -0.523 (Profession) -0.046 (Educational Status) – 0.023 (Monthly Income).

Table 3. Demographic variables that significantly affect users' likes overall rating

Demographic variables	R	ΔR^2	B	SH_β	β	T	p
1.Job	0.136	0.018	-0.523	0.042	-0.171	-12.502	0.000
2.Education Status	0.144	0.003	-0.046	0.009	-0.044	-5.260	0.000
3. Monthly Income	0.145	0.000	-0.023	0.011	0.029	-2.021	0.043
Fixed	-	-	3.601	0.057	-	63.586	0.000
$R^2 = 0.021$ F (3. 18201)= 130.186 P=0.000							

Theories about landscaping preferences are not only evolutionary in origin, but there are also cultural theories. One of these is the Topophilia (Love to Space) theory developed by Tuan (1974). According to this theory, preferences regarding the landscape are affected by variables such as age, gender, and educational status (Tveit *et al*., 2006). In this study, it was found that cultural variables such as monthly income, education level, profession significantly affect the preference of landscapes. For example, as the senior profession group, education level and monthly income increase, the appreciation decreases significantly. Based on these data, it can be said that the findings of the study support the theory of Topophilia. According to the study done, it shows that the most preferred images are rich in plant existence. The reason for this can be shown as the importance given by educated and conscious people to plant assets in urban areas.

Conclusions and Recommendations

In the evaluation studies on aesthetic preferences, the measurement of the relationship between landscape and the demographic characteristics of the sensors is an important issue that should be emphasized (Sevenant and Antrop, 2009). In their study of Junker and Buchecker (2008) stated that demographic characteristics such as age, monthly income, profession and education level have a significant impact on human environmental values and aesthetic preferences. In the statistical inquiries, it was revealed that individuals with high educational status liked the places shown in the photos significantly less. This finding supports the study of Oktay (2017). Also, according to the results of this study, the level of appreciation decreases as the income level increases. However, Polat *et al.* (2012) found that in their study in the recreation areas of Konya city and Oktay (2017) in their study in Konyaaltı, the increase in revenue increased significantly, but the reason for the result of the Edremit example is that the higher income group is more social compared to the lower income groups. It is predictable that he may have the opportunity and therefore be more fortunate to travel. From this point of view, it is meaningful that the upper income group, which has the chance to compare with the landscape arrangements in other cities, likes the Edremit urban landscape less. In addition, it was concluded that the gender and age factors of the users are not related to the like of the urban landscape.

Acar *et al*. (2002), Güngör and Aslan (2004), Todorova *et al*. (2004) and Sezen *et al*. (2011) as stated by plants as living and living entities are different objects from classical inanimate design objects that indicate different seasons and different times of the day and have different spatial expressions. Urban designs, supported by the green texture presented in this study, are more appreciated by the users in terms of visual landscape. In line with these results, it is revealed that the green texture deficiency in the perspective view of mass housing areas, especially from the new settlements, should be eliminated in order to improve the urban landscape image revealed by the general settlement of Edremit district/Van. Studies on the demographic characteristics of the users will enable the revealing of user profiles for urban landscape areas of a particular region. The findings to be obtained will be important bases in their work for the relevant planners and managers. In the light of the results of the study, in line with the environmental preferences of the users, it is necessary to

take these concepts into consideration by the municipalities and other city stakeholders on the basis of sustainable urban landscape planning and design.

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