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Original Article

Visual assessment of rural landscape with different characters

Farklı karakterdeki kırsal peyzajların görsel değerlendirmesi

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ABSTRACT

Rapid urbanization and urban structuring made in resonse to intense and stressful living conditions has been putting undue pressure on city residents. In addition, the harmful effects of urban and industrial pollutants increases with every passing day. For these reasons, the existence and nature of rural areas become even more important as the aesthetic and functional roles of rural sites grow. The visual value of the landscape is the initial data that reflects the identity of the area and the beginning of landscape planning. Visual quality has a particularly decisive value for the goals of minimizing intervention and making the right planning decisions for rural areas. This study aimed to conduct visual evaluation on rural areas that feature different characters. Visual Landscape Quality Analysis was performed on designated rural settlements (10 villages situated in Bayburt). Results showed that the highest rated landscape unit was Vegetation Landscape (M = 0.78), with Path Landscape ranking second (M = 0.71), and followed by Agricultural Landscape in third rank (M = 0.70). The Cultural Landscape ranked the least (M = −0.43).

Keywords: Bayburt, visual landscape, visual quality

ÖZ

Hızlı kentleşme ve kentsel yapının ortaya çıkardığı yoğun ve stresli yaşam koşulları, kent halkı üzerinde baskı oluşturmaktadır. Ayrıca kentsel ve endüstriyel kirleticilerin yarattığı zararlı etkiler her geçen gün artmaktadır. Bu noktada kırsal alanların varlığı ve niteliği daha da önem kazanmakta, estetik ve fonksiyonel rolü büyümektedir. Bir peyzajın görsel değeri, alanın kimliğini yansıtan ilk veri ve planlamanın başlangıcıdır. Görsel kalite, özellikle kırsal alanlarda müdahalenin minimuma indirilmesi, doğru plan kararları alınması açısından belirleyici bir değer olmaktadır. Bu çalışmada, çalışma alanında yer alan farklı karakterdeki kırsal alanlar için görsel değerlendirme elde edilmek istenmiş, belirlenen örnek kırsal yerleşimler (Bayburt ilinde yer alan 10 köy) üzerinde Görsel Peyzaj Kalite Analizi uygulanmıştır. Peyzaj üniteleri bütününde; en yüksek puan alan peyzaj ünitesi Bitki Örtüsü (M=0,78), ikincisi ise Yol Peyzajı (M=0,71), üçüncüsü ise Tarımsal Peyzaj (M=0,70) olmuştur. Kültürel peyzaj ise son sırada yer almıştır(M=-0,43).

Anahtar Kelimeler: Bayburt, Görsel kalite, görsel peyzaj
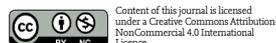
INTRODUCTION

Turkey, which is on the route for EU(European Union) membership process, has been the side of many of the international agreements on the environment, and has been trying to reflect these agreements to its internal legal system (Erdem and Coskun, 2009). Ecological values were discussed in the political agenda in Europe for many years (Rio declaration) and the visual quality received less attention. However, changes were observed with the European Landscape Agreement (2000), and a new landscape concept was developed that was integrated with visual, cultural, and social landscape quality together with ecological functions. The importance and difficulty of integration has been emphasized in many studies (Tress et al., 2005, 2007; Fry et al., 2009). Fry et al. (2009), which schematized the common ground between visual and ecological landscape characters as the *set of intersections*.

Today, the interest on interesting landscape (symbolic, historical, etc.) is decreasing, and the concept of planning and management of ordinary landscape is becoming the subject matter in the agenda. There is no consensus on the qualities, values and needs of these common cultural landscapes. According to Vouligny et al. (2009), the intense agricultural usage area landscapes are a good example in this context.

According to Özgüc (l999), the attractiveness and pleasing effects of a place give us the visual quality of that place. The physical factors of the source, which affects the user's perceptions, need to be defined in this context. Landscape quality assessment is an active study field in environmental perception studies, and it is also an important component in environmental planning and management, and for this reason, it is one of the important chains that must not be ignored (Meitner, 2004). In a reasonable and healthy landscape planning work, the planner has to reveal and consider the aesthetic interpretation of the society about the present source before the interpretation of his/her own aesthetic values (Özgüc, 2008).

Not only do the visual components of landscape provide us with an aesthetical value, but they also show us the relation between cultural, economic and biological phenomena. In fact, it is possible to establish a relation between the beauty of the landscape and the wealth of it in terms of bio-ecological factors. Although it is not always possible to apply landscape Visual Landscape Quality Assessment (VLQA) techniques, this quality must be considered as a source that must be preserved to protect rural landscape variety (Angileri and Toccolini, 1993).

The required methodological frame and steps that are necessary for the sensitivity of the visual properties must be applied and emphasized (Krause, 2001);

- The landscape units must be limited with characteristic shaping of the area, structural elements (topography, water, vegetation, colonization) and their landscape mosaic orders,
- Separation of the macro, meso and micro structures within a single landscape part (image, local elements and the structure of the view may be isolated according to the obstacles present in the area),
- Determining the preservation demands, certain interactions and disruption type sensitivities,
- Investigating the disruption levels that will be caused by the ways that will be proposed for equalization, avoiding or minimizing considerable and continuous disruptions.

The assessment of the visual aesthetic quality of a landscape has developed at a significant level in recent years. Objective, reliable and accurate digital measurements and models are the bases in this respect (Palmer and Hoffman, 2001; Roth, 2006). There are two main landscape aesthetics theories paradigms that are based on landscape assessment methods; "objective" paradigm (visual quality according to landscape features), "subjective" paradigm (the landscape quality "in the eye of the audience"). The analysis of the relations between the visual quality and structural features of the landscape is an active study field

in which environmental perception research is what counts. The relations between landscape structure and perception are less known; however, it will be extremely advantageous to know them (Fuante de Val et al., 2006). Psycho-physiological model, on the other hand, assumes that the physical features of landscape define the psychological reaction of the observer (Winchcombe and Revell, 2004).

In this study, VLQA was performed in different village types sampling area located within the borders of the city of Bayburt. The aim of the study is to make a VLQA, to analyze the natural and cultural values in rural characteristics in detail, and to make some recommendations. It is also the aim of the present study to form a basis for future studies that will be conducted in the area and in similar areas.

MATERIALS AND METHODS

Material
Bayburt has an elevation of 1400-3350 m, and is located on 40°10' Northern and 40°15' Eastern longitude. Bayburt is in Coruh Basin and surrounded by Soğanlı Mountain in the North, Otlukbeli Mountain in the South, Mescit Mountain in the East and Giresun Mountain in the west. VLQA was performed in the 10 villages that were included as the sampling in the study. The villages were ranging through many different areas that showed ecological and morphological differences in a line stretching from north-south part of the city, and for this reason, the area has many different climate types, specific values and character areas (Figure 1). The study was established different landscape types like Plain Village, Mountain Village, Water Shore Village, and Forest Village. The villages that were determined as the study area were Calıdere, Helva, Masat, Aslandede, Camlıkoz, Bayraktar (Bayburt/Central village), Sırataslar, Kılıckaya, İncili (Bayburt/Aydıntepe district) and Devetası (Demirozu district) Villages.

Method
The basic idea of the VLQA is to determine the rural identity in the samples of rural residential areas that have different characteristics in Bayburt. In this context, it was also aimed in the present study that the landscapes that have high visual quality value are determined, the advantages and disadvantages brought by different ecological and cultural features in this residential area are revealed, and the differences in the assessments of the experts and other society members are defined. As a result of these assessments, the Rural Landscape Visual Value was defined in the present study.

Many methods have been applied for Visual Landscape Analysis and Assessment until our present day (Paquette and Dammon, 2003; Arriaza et al., 2004; Turk, 2006; Rogge et al., 2007; Gruehn and Roth, 2008; Lokocz et al., 2011; Cloquell-Ballester et al., 2012; Özhancı et al., 2013). In this study, a Visual Quality Evaluation Method that is specific and suitable for the present study area was formed by making use of the Scenic Beauty Estimation Method-Daniel and Boster, 1976 and various other studies to determine the rural landscape features of the study area.

The residential tissues (housing areas) in the general silhouette and villages have been dealt with in architectural terms. In this respect, VLQA was made by considering the bases of the Gestalt Hypothesis and architectural principles. The landscape charac-

Figure 1. The location of Bayburt and rural settlement (1. Calıdere, 2. Helva, 3. Masat, 4. Aslandede, 5. Camlıkoz, 6. Bayraktar, 7. Sırataslar, 8. Kılıckaya, 9. İncili, 10. Devetası)

teristics of the rural residential areas, which were determined as the study area, were divided into 5 Units to perform visual evaluation, and the photographs of these areas were evaluated according to various parameters by experts and public. Then, the data obtained in the study were evaluated in statistical terms.

Photographing Process and Classification

The photographing process in the study area was performed in 2011-2012 August-September period. Nikon D40 Pro camera was used in the field work performed in 10 villages that were selected as the study area; between 10:00-15:00 (to reduce the solar effect to the lowest level). Nearly 5000 photographs were sifted through by experts according to the purpose of the study, and 55 photographs were chosen to be used in the evaluation process. The photographs were taken at the eye level, and the distance was kept at the same level in every village for the desired photograph type. For the purpose of making a better evaluation, the images that would be evaluated by the expert team and public were classified under 5 Landscape Character Units, which are;

1. General Silhouette (G), which refers to the images in which rural residential areas and landscape areas are included in the frame (Figure 2).

2. Natural Landscape / Vegetation (VG), which refers to the Vegetation and landscape areas located in and around rural residential areas (Figure 3).

3. Road Landscape (RL), which refers to the main road destination and landscape that are included in the rural residential area and that enable users to reach the rural residential areas (Figure 4).
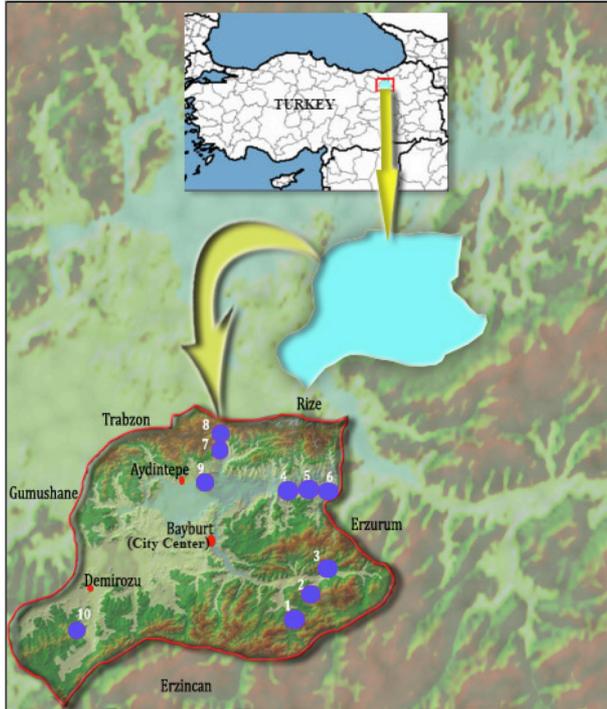

Figure 2. Examples of the general silhouette images used in visual quality analysis

Figure 3. Examples of the vegetation images used in visual quality analysis
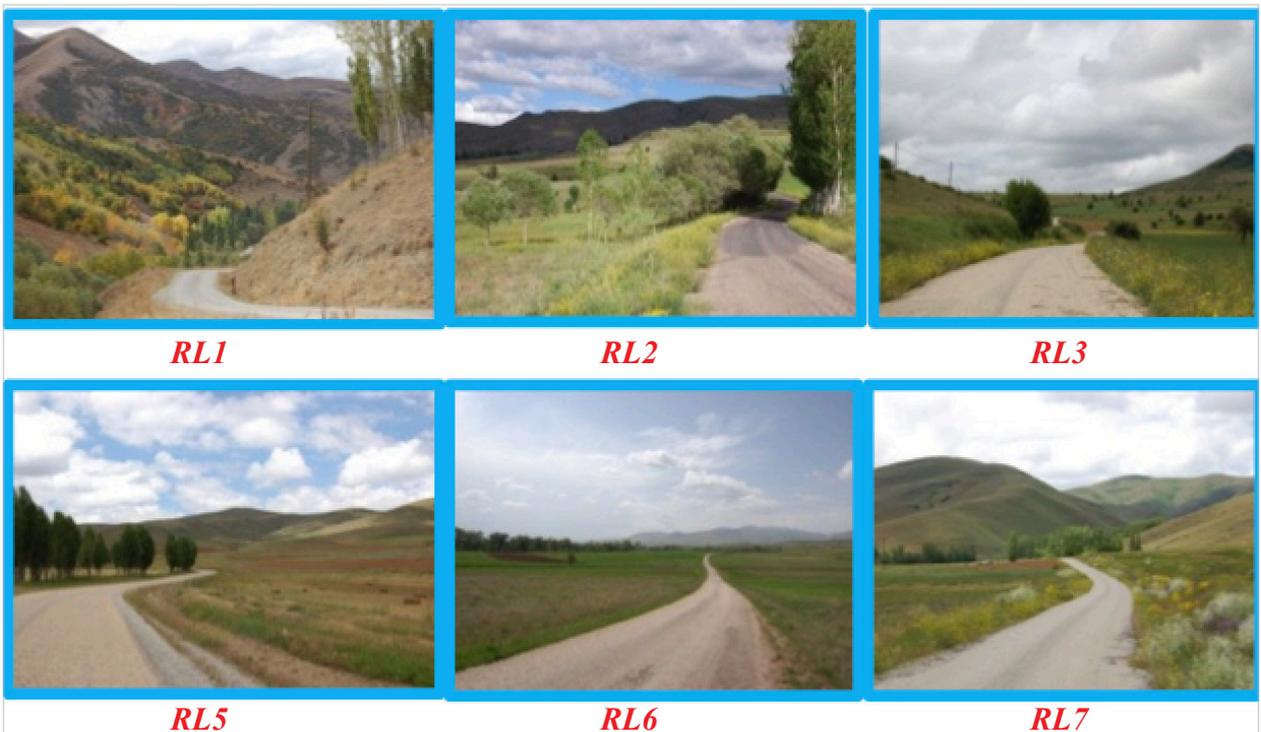
Figure 4. Examples of the road landsape images used in visual quality analysis

4. Agricultural Landscape (AL), which refers to the images that include the agricultural areas, landscapes and surrounding areas, which are one of the main components of rural residences (Figure 5).

5. Cultural Landscape (Housing texture) (CL), which refers to the images in which there are residential areas, mosques, alleys and squares, which are in the focal point of the rural residence (Figure 6).

| AL1 | AL2 | AL3 |
| AL9 | AL10 | AL11 |

Figure 5. Examples of the agricultural landscape images used in visual quality analysis

| CL 5 | CL6 | RL7 |
| CL 13 | CL14 | CL15 |

Figure 6. Examples of the cultural landscape images used in visual quality analysis

Assessment Process

Assessment of Public
In this study, a public assessment was also performed in the scope of the VLQA, which was conducted to obtain the opinions on Visual Quality of the landscape of the city of Bayburt. Many previous studies were reviewed, and the questionnaires, analyses and data analyses were made by using the most ideal evaluation parameters.

The participants of the study were Architecture and Design Faculty, Landscape Architecture Department 2nd Grade students (46), Fine Arts Faculty, Music Department (23) and Traditional Handcraft Department students (21), Science Faculty Geography Department students (42), Literature Faculty Turkish Language and Literature Department students (30) and the residents of Erzurum (46), which makes a total of 6 different groups, and 208 people.

The evaluation process started with a briefing on the purpose of the study which was also intended to avoid problems that might occur due to misinterpretations. Then, all the images were presented to the participants as a slideshow, and the participants were asked to evaluate each image between -2 and +2 scores within 15 seconds (-2: completely repulsive,-1: repulsive, 0: neutral, +1: attractive, +2: very attractive).This evaluation was performed only to familiarize the participants to the images, and this process was not used in further analyses.

In the last stage, the participants were asked to rate the images between -2 and +2 range in terms of naturalness, openness, variety, order, trust, cohesion and the fineness of the sceneries (Table 1).

Expert Evaluation
In this stage, the images of different character areas were evaluated by an expert group consisting of Landscape Architecture Department academicians by using a series of landscape and architectural parameters. The evaluation form was presented to the expert group, and they were asked to make evaluations on the photographs according to the given range of points. The aim of this evaluation was to define the relation between expert evaluation and the evaluation of the people. Then, in order to determine the real value of the landscape, the participants were asked to choose the most proper statements that fit their viewpoints.

Evaluation of the Classified Photographs over Parameters
In general silhouette and vegetation assessment, the evaluation of the landscape features and assessment of the images (9 general silhouette and 12 vegetation) taken from the residential areas were made by the expert group. Eleven main titles were used in the evaluation, which were visual area, visual area depth, closure, continuance, water, dominant vegetation, topography, cultural elements, and sky.

The real value of the landscape, based on the statement "For humans, the landscape that is independent from its functions is the real landscape", in the last stage, the experts were asked to choose one of the statements; "Landscape must be developed", "Landscape may stay as is", "Landscape may be completely eliminated, or converted into another landscape". In addition, the vegetation images were questioned in terms of the most ideal landscape function (Rogge et al., 2007). The evaluation list is given in Table 2.

In road landscape, eight images that were taken from the residential areas were evaluated in terms of degree of naturalness, the rhythm of the road, the contribution of the topography, the sense of area, traditionalism level, surprises, dominant vegetation, the quality of the scenery road, the effectiveness of the sky-board line, the type of the landscape through which the landscape road passes. In addition, the images were also questioned in terms of the real value of the landscape. The evaluation list is given in Table 3.

Agricultural landscape is another basic component of the visual evaluation. Eleven agricultural area images taken from

Table 1. The parameters used in public evaluation	
PARAMETER / Definitions	
Naturalness	Give Low points if you perceive a clear inconsistency between the "current natural scenery features" and "the scenery features that seems to be given place by humans in the scenery" in the image.
Openness	If you think that it is difficult or confusing to interpret the image, give a low point.
Variety	If you think that the image has various elements that are different from each other, give a high point; and if not, give a low point.
Order	If you perceive that the image has ranked elements or it has a clear order of things, give a high point.
Reassurance	If you perceive that the components of the image recalls risks or dangers, give low point; if the image presents a hospitable, danger-free and safe perception, give a high point.
Cohesion	If there are foreign elements that are not integrated with the rest of the landscape elements, give a low point.
The beauty of the scenery	Give a point to the image according to the beauty of the scenery.

the study area by the expert group were evaluated in terms of the landscape features and elements. There were 14 main titles in the evaluations, which were visual area, visual area depth, and vegetation around it, agricultural products, topography, cultural elements, color, composition, perceptibility, variety, openness, and order. In addition, the images were also questioned in terms of the real value of the landscape and the most ideal landscape function. The evaluation list is given in Table 4.

Cultural landscape (housing texture) is another component of visual evaluation. 15 residential area images that were taken by the expert group were evaluated in terms of agricultural features and elements. There were 8 main titles in the evaluation; similarity, closeness, topography contribution, sense of area, traditionalism level, definable form, image clarity, and the sustainability of the streets. In addition, the images were also questioned in terms of the real value of the Landscape and the most ideal Landscape function. The evaluation list is given in Table 5.

Table 2. Features used in the evaluation of general silhouette and vegetation images by the expert group

Parameters	SCORING					
	1	2	3	4	5	6
VISUAL AREA	Closed	Filtered	Open			
VISUAL AREA DEPTH	<100m	100 m-2 km	>2 km			
CLOSURE	No	There is				
CONTINUANCE	No	There is				
WATER						
*Water flow	No Flow	Flow				
*Water source type	No water	River	Lake	Dam		
* Water ratio	0–25%	25–50%	50–75%	75-100%		
DOMINANT VEGETATION						
* Covered with vegetation area ratio	0–25%	25–50%	50–75%	75-100%		
* Vegetation type	No egetation	Herbaceous plants and shrubs	Culture plants	Mixed shrubs and trees	Trees	Forest
TOPOGRAPHY	Plain/ near flat	Partially wavy	Partly mountainous	Mountainous	Valley	
CULTURAL ELEMENTS						
* Presence of man-made positive elements / places and typical houses	Not at all	One item	Two items	Three or more		
* The existence of man-made negative elements / roads, industry, energy lines etc.	Three or more	Two items	One item	Not at all		
* Proportion of man-made elements	75-100%	50–75%	25–50%	0–25%		
SKY						
*Sky ratio	0–25%	25–50%	50–75%	75-100%		
*Presence of significant skyline	No	There is				
THE REAL VALUE OF THE LANDSCAPE	Landscape may be, completely eliminated or converted into another landscape	Landscape must be developed	Landscape may stay as is			
IDEAL LANDSCAPE FUNCTION (for vegetation images)	Existing use	Agricultural use	Recreation / Tourism	Protection		

Statistical Analysis

The 'SPSS 10.0' Statistical Package Program was used in the analysis of the questionnaires that were used in visual quality analysis. The One-Way Variance Analysis (ANOVA), Regression Analysis and Correlation Analysis (Spearman's RHO) were used in the analyses of the data.

RESULTS AND DISCUSSION

Scoring the General Attractiveness and Comprehensive Questioning

The beauty of the scenery scores (-2,-1, 0,+1,+2 range) that were given by 207 participants for 56 different images to which VLQA was applied were evaluated and ranked according to Visual Preference Score (VPS) (Table 6.). 55.7% of the participants were female, and 61,35% were living in the city center with their families, 55.56% lived in a cold-climate area.

The images VG5, VG6, VG8, VG9, VG11 from the Vegetation Images; AL1, AL2, AL7 from Agricultural Landscape Images; CL14 from Cultural Landscape Images; RL7 from Road Landscape Images were determined to have the highest "beauty of the scenery scores". The first three images were VG6 (M=1.40), VG11 (M=1.37) and VG5 (M=1.28), respectively (Figure 7).

As a result of the evaluations, the images with the lowest "beauty of the scenery score" were CL2, CL8, CL7, CL4, CL3, CL1, CL9 and G4, respectively (Figure 8.).

Table 3. Features used in the evaluation of road landscape images by the expert group

Parameters	SCORING					
	1	2	3	4	5	6
DEGREE OF NATURALNESS	Incompatible with natural tissue floor type+vegetation+ sign boards +energy transmission lines	Partially compatible with natural tissue floor type+vegetation+ sign boards + energy transmission lines	Compatible with natural tissue floor type+ vegetation+ sign boards +energy transmission lines			
THE RHYTHM OF THE ROAD (compliance with natural forms)	Stable	Partially mobile	Active			
THE CONTRIBUTION OF THE TOPOGRAPHY	Low	Medium	Clear			
THE SENSE OF PLACE (the power to represent the geography in which it is located)	Low	Medium	Clear			
TRADITIONALISM LEVEL (Originality)	No traditional structure	Some traditional structures	Completely traditional structures			
SURPRISES	No	There is				
DOMINANT VEGETATION						
* Covered with vegetation area ratio	0–25%	25–50%	50–75%	75-100%		
* Vegetation type	No vegetation	Herbaceous plants and shrubs	Culture plants	Mixed shrubs and trees	Trees	Forest
THE QUALITY OF THE SCENERY ROAD	Low	Medium	Clear			
THE EFFECTIVENESS OF THE SKYBOARD LINE	Low	Medium	Clear			
THE TYPE OF THE LANDSCAPE THROUGH WHICH THE LANDSCAPE ROAD PASSES	Cultural Landscape	Agricultural Landscape	Meadow-grassland	Mountain Ecosystem		
THE REAL VALUE OF THE LANDSCAPE	Landscape may be completely eliminated, or converted into another landscape	Landscape must be developed	Landscape may stay as is			

In the whole of the landscape character unit groups, the highest score belonged to Vegetation Unit (M=0,78); and the second highest score belonged to Road Landscape Unit (M=0,71). The Cultural Landscape was the last item in the list (Table 7). As a matter of fact, the differences between the different types of images were found to be statistically significant in One-Way Variance Analysis (ANOVA) results (f value =419.732, p=0.000<.01) (Table 8.).

The Visual Quality Parameter Scores of the Images
The Regression Analysis was applied to determine at which level the visual quality parameters were effective on the beauty of the scenery factor. The results of the analysis are given below (Table 9).

In this respect, the independent variables can explain the 47.4% of the variance in the dependent variables. In addition. accord-
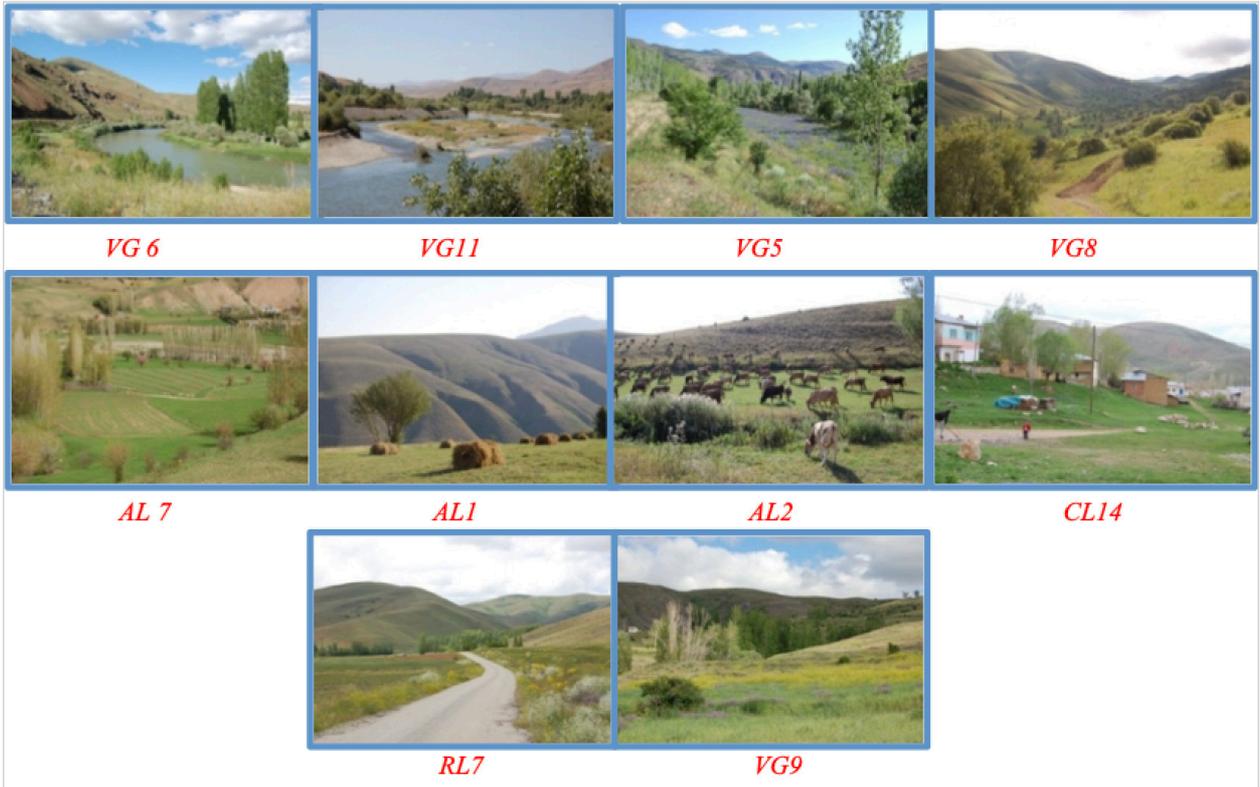

Figure 7. The images with highest score of landscape beauty

Figure 8. The images with lowest score of landscape beauty

ing to the significance value in Anova, the value was p < 0.01; for this reason, the model was found to be significant (Table 10).

The relation between all the parameter and the beauty of the scenery was significant at p<0,01 level. However, there was no statistically significant relation between the beauty of the scenery and 'openness' parameter. It was understood that the factor that had the highest effect on the beauty of the scenery was 'Naturalness', and 'trust' and 'cohesion' followed this (Table 11). This situation may be characterized with the following formula;

$y=0.213+0.245x_1+0.045x_2 + 0.079x_3 + 0.166x_4 + 0.081x_5+ 0.290x_6$
In the image with the highest beauty of the scenery score in visual landscape quality parameters, the distribution of the scores was

as; naturalness (M=1.56); openness (M=1.19); variety (M=0.74); order (M=0.90); reassurance (M=0.72) and cohesion (M=-0.92).

Expert Evaluation
The scores given to the images as a result of expert evaluation in general silhouette images and their VPS scores are given in Table 12.

The scores given to the images as a result of expert evaluation in vegetation images and their VPS scores are given in Table 13.

The scores given to the images as a result of expert evaluation in agricultural landscape images and their VPS scores are given in Table 14.

Table 4. Features used in the evaluation of agricultural landscape images by the expert group

	SCORING				
Parameters	1	2	3	4	5
VISUAL AREA	Closed	Filtered	Open		
VISUAL AREA DEPTH	<100m	100 m-2 km	>2 km		
VEGETATION AROUND IT					
*Covered with vegetation area ratio	0–25%	25–50%	50–75%	75-100%	
* Vegetation type	No vegetation	Herbaceous plants and shrubs	Culture plants	Mixed shrubs and trees	Trees
AGRICULTURAL PRODUCTS	Inactive in view	Active in view			
TOPOGRAPHY	Plain / near flat	Partially wavy	Partly mountainous	Mountainous	
CULTURAL ELEMENTS					
* Presence of man-made positive elements / places and typical houses	Not at all	One item	Two items	Three or more	
* The existence of man-made negative elements / roads, industry, energy lines etc.	Three or more	Two items	One item	Not at all	
* Proportion of man-made elements	75-100%	50–75%	25–50%	0–25%	
COLOR					
*Number of color	One color	Two color	Three or more		
*Color harmony	Clear color harmony	Poor color harmony			
COMPOSITION					
*Focus	No focus image	Focus image			
PERCEPTIBILITY					
*Kitle-Bosluk Oranı	Low	Medium	Clear		
VARIETY	Low	Medium	Clear		
OPENNESS	Low	Medium	Clear		
ORDER	Low	Medium	Clear		
THE REAL VALUE OF THE LANDSCAPE	Landscape may be completely eliminated, or converted into another landscape	Landscape must be developed	Landscape may stay as is		
IDEAL LANDSCAPE FUNCTION	Existing use	Meadow-grassland	Recreation / Tourism	Protection	

The scores given to the images as a result of expert evaluation in road landscape images and their VPS scores are given in Table 15.

The scores given to the images as a result of expert evaluation in cultural landscape images and their VPS scores are given in Table 16.

The images that had the highest average scores in expert evaluation in expert evaluation are CL5 (M=2.90) from CL images; VG6 (M=2.65) from VG images; AL3 (M=2.65) from AL images; RL1 (M=2.58) from RL images; G1 (M=2.31) from G images (Figure 9).

According to the results of the correlation analysis (Spearman's RHO). which was conducted to question the relation between the landscape features and VPS scores. it was observed that the relation with the vegetation rate was significant in GS images. the relation with water flow and water source type was very significant in VG images. and the relation with the existence of man-made positive elements; and the relation with topography contribution was significant in CL images. The results for all landscape units are given in Table 17.

The common features of the high point area vegetation images were that they had dominant naturalness in them. integrity and
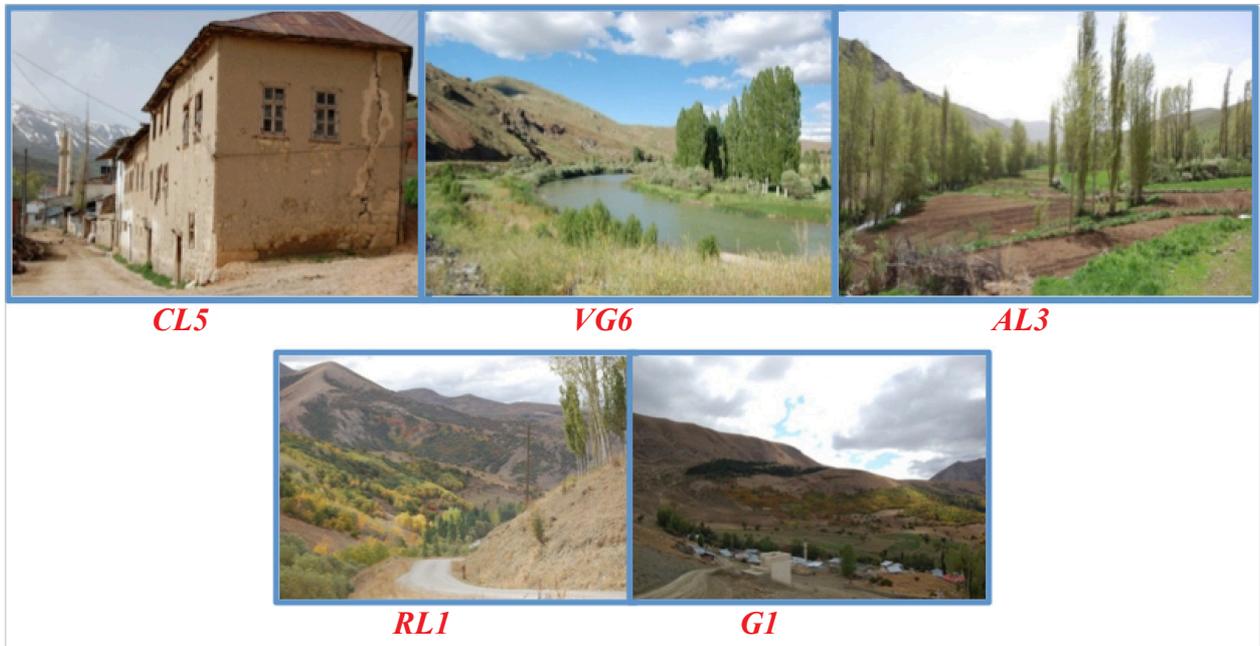

| CL5 | VG6 | AL3 |
| RL1 | G1 | |

Figure 9. The highest rated images in Experts Review

Table 5. Features used in the evaluation of cultural landscape images by the expert group

| Parameters | SCORING | | |
	1	2	3
SIMILARITY	Low	Medium	Clear
CLOSENESS	Low	Medium	Clear
TOPOGRAPHY CONTRIBUTION	Low	Medium	Clear
SENSE OF AREA	Low	Medium	Clear
TRADITIONALISM LEVEL	No traditional structure	Some traditional structures	Completely traditional structures
DEFINABLE FORM	Yok	Var	
IMAGE CLARITY	Low	Medium	Clear
THE SUSTAINABILITY OF THE STREETS	Low	Medium	Clear
THE REAL VALUE OF THE LANDSCAPE	Landscape may be completely eliminated, or converted into another landscape	Landscape must be developed	Landscape may stay as is
IDEAL LANDSCAPE FUNCTION	Existing use	Recreation / Tourism	Potection

Table 6. Average score of landscape beauty of the images made GPKD

Landscape Types	Photo cod	VPS and Std. Deviation	Landscape Types	Photo cod	VPS and Std. Deviation
GENERAL SILHOUETTE (GS)	G1	0.02±1.31	ROAD LANDSCAPE (RL)	RL1	0.73±1.24
	G2	0.13±1.28		RL2	0.93±1.13
	G3	0.43±1.27		RL3	0.39±1.22
	G4	-0.44±1.28		RL4	0.67±1.20
	G5	0.72±1.23		RL5	0.73±1.22
	G6	0.63±1.28		RL6	0.66±1.25
	G7	0.30±1.19		RL7	0.99±1.14
	G8	0.21±1.22		RL8	0.70±1.31
	G9	0.75±1.20			
VEGETATION (VG)	VG1	0.34±1.09	AGRICULTURAL LANDSCAPE (AL)	AL2	1.10±1.14
	AL1	1.14±1.15		AL3	0.94±1.13
	VG2	0.97±1.25		AL4	0.37±1.75
	VG3	0.13±1.30		AL5	0.58±1.20
	VG4	0.24±1.40		AL6	0.61±1.23
	VG5	1.28±1.01		AL7	1.24±1.03
	VG6	1.40±0.97		AL8	0.47±1.23
	VG7	0.24±1.35		AL9	0.44±1.26
	VG8	1.27±1.04		AL10	0.50±1.26
	VG9	0.99±1.13		AL11	0.31±1.33
	VG10	0.83±1.20			
	VG11	1.37±1.02			
	VG12	0.29±1.26			
CULTURAL LANDSCAPE (CL)	CL1	-0.74±1.30			
	CL2	-1.00±1.23			
	CL3	-0.86±1.17			
	CL4	-0.88±1.18			
	CL5	-0.14±1.34			
	CL6	-0.28±1.35			
	CL7	-0.91±1.13			
	CL 8	-0.92±1.14			
	CL 9	-0.69±1.29			
	CL10	-0.75±1.22			
	CL11	-0.29±1.30			
	CL2	-0.20±1.39			
	CL13	-0.43±1.30			
	CL14	1.03±1.14			
	CL15	0,64±1,30			

Table 7. The scores obtained by the landscape character units

Landscape Character Unıt	VPS and Standart Deviation
GENERAL SILHOUETTE	0.31±1.30
VEGETATION	0.78±1.30
ROAD LANDSCAPE	0.71±1.22
AGRICULTURAL LANDSCAPE	0.70±1.24
CULTURAL LANDSCAPE	-0.43±1.38

that they did not have any negative and inconsistent elements. In addition. in all images. almost an image pool appeared with the contribution of the topography. In the "Scenery/Traffic Island" Theory of Appleton (1975). topography plays a significant role in the evaluation of the spatial structure of the landscape. This is closely related with the feeling that landscape has a typical or panoramic view (Hagerhall. 2001; Fuente de Val et al. 2006).

The AL7 image. which was taken from Masat Village agricultural landscape. shows a neatly-planned agricultural parceling.

Table 8. ANOVA test showing the results of inter-group and intra- group analysis of different units of images

	Sum of squares	Sd	Mean squares	f	p
Between groups	2832.518	4	708.130	419.732	.000*
Within groups	19199.199	11380	1.687		
Total	22031.717	11384			

*$p<0,01$, statistically very significant

Table 9. The Regression model between landscape beauty and parameters

R	R^2	Adjusted R^2	Std. error of the estimate
0,689[a]	0.474	0.473	0.79

Table 10. Anova Test between landscape beauty and parameters

Model	Sum of squares	Sd	Mean squares	F	p
Regression	1165.216	6	194.203	310.029	0.000[a]
Residual	1292.266	2063	0.626		
Total	2457.483	2069			

Table 11. The Regression Analysis results of the interpretation of landscape beauty

	Unstandardized coefficient		Standardized coefficient		
	B	Std. Hata	Beta	t	Significance
CONSTANT	0.213	0.037		5.768	0.000
Naturallness(x_1)	0.245	0.024	0.039	1.872	0.000
Openness (x_2)	0.045	0.019	0.084	4.250	0.061
Variety (x_3)	0.079	0.025	0.188	9.830	0.000
Order (x_4)	0.166	0.024	0.170	6.920	0.000
Safety (x_5)	0.081	0.019	0.093	4.225	0.000
Cohesion (x_6)	0.290	0.023	0.301	12.616	0.000

Table 12. The average scores VPS and landscape features of general silhouette images

	G1	G2	G3	G4	G5	G6	G7	G8	G9
MEAN SCORE	2.31	1.69	1.75	2.19	2.5	2.19	1.60	1.94	2.19
VPS	0.02	0.13	0.43	-0.44	0.72	0.63	0.30	0.21	0.75

the cultural plants among them. and the residential area in the background. The Populus sp. and Prunus sp.. which are placed in a certain order. agree with the linear structure of the agricultural landscape.

Cultural Landscape images received low scores in general evaluation and the CL14 image (Helva Village) ranked 7th among the first group. When the details are considered. it is observed that this image reflects the natural structure better when compared with other images. Image is a network of parts with humans animals green elements and trees. In the background the mountain silhouette strengthens the effect. In expert evaluation it was included in images that had low scores. It was observed that this image was weak in terms of the architectural features that were questioned.

Table 13. The average scores VPS and landscape features of vegetation images

	VG1	VG2	VG3	VG4	VG5	VG6	VG7	VG8	VG9	VG10	VG11	VG12
MEAN SCORE	2.47	2.35	2.23	2.06	2.47	2.65	2.35	2.12	2.00	1.88	2.59	2.00
VPS	0.34	0.97	0.13	0.24	1.28	1.40	0.24	1.27	0.99	0.83	1.37	0.29

Table 14. The average scores VPS and landscape features of agricultural landscape images

	AL1	AL2	AL3	AL4	AL5	AL6	AL7	AL8	AL9	AL10	AL11
MEAN SCORE	2.05	1.75	2.65	2.45	2.25	2.15	2.2	2.2	1.6	2.35	1.8
VPS	1.14	1.10	0.94	0.37	0.58	0.61	1.24	0.47	0.44	0.50	0.31

Table 15. The average scores VPS and landscape features of road landscape images

	RL1	RL2	RL3	RL4	RL5	RL6	RL7	RL8
MEAN SCORE	2.58	1.92	2.50	1.75	2.50	1.83	2.25	2.00
VPS	0.73	0.93	0.39	0.67	0.73	0.66	0.99	0.70

Table 16. The average scores VPS and landscape features of cultural landscape images

	CL1	CL2	CL3	CL4	CL5	CL6	CL7	CL8
MEAN SCORE	2	2.6	2.4	2.2	2.9	1.7	2.1	1.3
VPS	-.74	-1.0	-.86	-.88	-.14	-.28	-.91	-.92
	CL9	CL10	CL11	CL12	CL13	CL14	CL15	
MEAN SCORE	2.3	2.4	2.7	2.1	2.6	1.5	2.3	
VPS	-.69	-.75	-.29	-.20	-.43	1.03	.64	

Table 17. The correlation analysis between landscape characteristics and VPS scores

Landscape Unit	Landscape features	VPS	Significance
General silhouette	DOMINANT VEGETATION		
	Covered with vegetation area ratio	0.725*	0.027
Vegetation	WATER		
	Water flow	0.753**	0.005
	Water source type	0.753**	0.005
	CULTURAL ELEMENTS		
	Presence of man-made positive elements / places and typical houses	0.585*	0.046
Cultural Landscape	THE CONTRIBUTION OF THE TOPOGRAPHY	0.549*	0.042
*p<0.05. statistically significant			
**p<0.01. statistically very significant			

The weakest feature of the rural residential areas was that it is not possible to see an efficient architectural character. Together with the new and uncontrolled construction. The culture of wooden adobe and stone structures that dominated in the past have been lost and architecturally unidentified structures appeared in the area. This attracts the attention both in construction technique and in the colors used. In this context. plans must be made in further studies to regain the architectural character; and the village townhouse culture. Which has been brought until our present day through a tradition that exists almost in every village. must be placed in the very center of this structure. The governmental buildings that are built by the state (school. healthcare center. etc.) must also reflect this culture. Tempesta (2010) conducted a study on rural areas and reported that traditional structures contributed to the visual value of the landscape; however. other manmade elements weakened this effect and left a deep and negative trace. However which is more important is that these traditional structures must represent a certain architectural identity. The basic source of the visual activity is the existence of this identity. RL7 image is the image of a road landscape near Devetası Village. The natural vegetation which surrounds the road as a belt. Increases the quality of the image with its colors. While the trees bring the vertical effect in the skyboard line of the road. The active topography is another component in the background. In this image. The clarity and naturalness come to the forefront together with the topography contribution. which is also the case in vegetation images.

The G9 image is the only image with high score in its group (General Silhouette). The thing that makes it unique is the efficiency of the water element in the landscape. In the image of Aslandede Village. It attracts attention that there appear bends and curves when the Coruh River passes through the village and runs towards the plain. It brings the wealth of morphology of the valley to the forefront in its group.

In the whole of the unit groups the highest score belongs to the area landscape unit vegetation. The second highest score belongs to the road landscape unit and the third highest score belongs to agricultural landscape unit. The cultural landscape ranked the last in this context. As a matter of fact Lokocz et al. (2011) conducted a preference study and reported that natural landscape photograph category (including the road images) ranked the first and agricultural landscapes followed it.

When industrial elements are included in rural landscape. there appear changes in negative ways in concepts like fineness and naturalness. Meanwhile asphalt roads also cause negative changes in these concepts (Cloquell-Ballester et al.. 2012). In this study. the road images that were used in the evaluations did not cause a negative effect because it did not create a direct contrast with the natural texture. The natural vegetation of the area must be preserved. and must be evaluated together with the colorful road landscape. Stations and facilities must be established to enable people find the opportunity of stopping by or spending the night and watch the vista points where the vegetation can be watched in the best manner in the roads with scenery.

In the analysis that was made to determine to which extent the visual quality parameters were effective on the beauty of the scenery factor. It was determined that there was no statistically significant relation between the beauty of the scenery and 'openness' parameter. The 'naturalness' was the factor that had the highest effect on the beauty of the scenery (Purcell and Lamb. 1984; Hartig. 1993; Hagerhall et al.. 2004; Cloquell-Ballester et al.. 2012). and 'trust' and 'cohesion' followed this.

The images that had the highest average scores in the expert evaluation were CL5. VG6. AL3. RL1. and G1. The CL5 image. which is the image of a cultural landscape of the Masat Village residential area. has several architectural elements like the clarity and continuity. In other images it was observed that aside from the agricultural landscape image. The water and especially the topography elements increase the visual efficiency aside from the agricultural landscape image.

In the literature the two determiners that are effective on the preference have been reported as "attracting people to visit and see" and "worth preserving" concepts (Sevenant and Antrop, 2009). The "attracting people to visit and see" concept has been considered as the need of humans to discover and as the discovery behavior in the literature (Hagerhall, 2000). "Attractive vegetation", "being not under the influence of humans" and "being not disrupted" refer to the naturalness level that is perceived (Sevenant and Antrop, 2009).

It was observed that the results of the evaluation done by the experts do not overlap with the evaluation of the people. As a matter of fact the indicators that have visual and ecological importance may not be interpreted in the same manner in both viewpoints. The differences expressed by this indicator may be positive in terms of ecological aspect and negative in terms of visual aspect. The visual and ecological function scale of humans shows differences. For example if we are talking about an open area in a landscape. a major-scale open area may be perceived as positive in terms of visual aspect and a minor-scale open area will have many ecological functions (Fry et al.. 2009).

When the relation between the landscape features and visual preference scores was considered. It was determined that the relation with *the rate of area covered with vegetation* is important in general silhouette images and the existence of the *water flow. water source type and manmade positive elements* is significant in vegetation images and the relation between the topography contribution is significant in cultural landscape images. As a matter of fact studies conducted so far revealed that the elements that were perceived as natural developed landscape; and anthropogenic elements deteriorated the visual quality (Schroeder. 1988; Franco et al.. 2003; Arriaza et al.. 2004; Rogge et al.. 2007; Palmer. 2008; Tempesta. 2010). In addition another important point that must be kept in mind is the level of the effect created by the perspective of the image. The photographer must add a perspective comment before the viewer.

CONCLUSION

In Visual Quality Analysis. it was determined that the VG6. VG11. VG5. VG8 and VG9 images had the highest scores in Vegetation Images; the AL7. AL1. AL2 images had the highest scores in Agricultural Landscape Image; CL14 had the highest score in Cultural Landscape Images; RL7 had the highest scores in Road Landscape Images in terms of "the beauty of the scenery score"; and the first three images were VG6. VG11 and VG5. respectively. The images that had the highest scores in each Landscape Character Unit were G9 in the GS Unit; B6 in the VG Unit; Y7 in the RL Unit; T7 in the AL Unit; K14 in the CL Unit. As a whole of the unit groups. The Area Landscape Unit Vegetation had the highest score; the Road Landscape Unit had the second highest score; the Agricultural Landscape Unit had the third highest score; and the Cultural Landscape ranked the latest. It was determined that there was no statistically significant relation between the beauty of the scenery and 'openness' parameter; and the factor that had the highest effect on 'the beauty of the scenery' was 'naturalness'; and 'trust' and 'cohesion' followed it.

The images that had the highest Landscape Feature Scores in expert evaluations were K5. B6. T3. Y1. and G1. The K5 image. which is one of the Cultural Landscape Images from Masat Village residential area has several architectural elements like image clarity and continuity. In other images it attracts attention that aside from the agricultural landscape image. Visual efficiency is also increased by especially water and topographical elements.

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