



Visual Landscape Quality Assessment of Natural Parks Nearby The Urban Area in Kastamonu, Türkiye

Türkiye Kastamonu Kentsel Alan Yakınındaki Doğal Parkların Görsel Peyzaj Kalitesi Değerlendirmesi

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Abstract

Designing recreational areas in line with the wishes and needs of users is of great importance for individuals to benefit from these areas more effectively and to increase the quality of their time in recreational areas. The present study aims to determine the relationship between user characters and visual landscape quality by analyzing visual quality, and revealing ideas, thoughts, and preferences of potential users in recreation areas of a different character in Kastamonu province. To this end, a quality analysis was performed using the Scenic Beauty Estimation Method for Dipsizgol Natural Park (DNP) in Kastamonu province (Tosya), Şehit Şerife Bacı Natural Park (SSNP) (Kastamonu), and Yeşil Yuva Natural Park (YYNP) (Abana). When the results were evaluated in general, among all parameters, the recreational "diversity parameter" had the lowest scores in the three sample areas. Another significant result is the scenic beauty parameter of DNP has been highlighted. When the sample areas were compared, it was found that YYNP was evaluated with the lowest scores of all parameters except mobility. The number and satisfaction of visitors can be increased by improving the visual quality in the decision-making processes of national parks, which have severe tourist and recreational potential and are critical areas of the world that keep oscillations.

Keywords: Recreational Area, Nature Parks, Visual Landscape Quality Assessment, User Preferences, Kastamonu.

Özet

Rekreasyon alanlarının kullanıcıların istek ve ihtiyaçları doğrultusunda tasarlanması, bireylerin bu alanlardan daha etkin yararlanabilmesi ve rekreasyon alanlarında geçirdikleri zamanın kalitesinin artması açısından büyük önem taşımaktadır. Bu çalışma, Kastamonu ilinde farklı karakterdeki rekreasyon alanlarındaki potansiyel kullanıcıların fikir, düşünce ve tercihlerini ortaya çıkararak, görsel kaliteyi analiz ederek kullanıcı karakterleri ile görsel peyzaj kalitesi arasındaki ilişkiyi belirlemeyi amaçlamaktadır. Bu amaçla Kastamonu ili (Tosya) Dipsizgöl Tabiat Parkı (DNP), Şehit Şerife Bacı Tabiat Parkı (SSNP) (Kastamonu) ve Yeşil Yuva Tabiat Parkı (YYNP)'nin Manzara Güzellik Tahmin Yöntemi kullanılarak kalite analizi yapılmıştır. Abana). Sonuçlar genel olarak değerlendirildiğinde tüm parametreler arasında rekreasyonel "çeşitlilik parametresi" en düşük puanı almıştır. Bir diğer önemli sonuç ise DNP'nin doğal güzellik parametresinin vurgulanmış olmasıdır. Örnek alanlar karşılaştırıldığında

YYNP'nin hareketlilik dışındaki tüm parametrelerden en düşük puanlarla değerlendirildiği tespit edilmiştir. Ciddi bir turizm ve rekreasyon potansiyeline sahip olan ve dünya üzerinde salınımlar yapan kritik alanlar olan milli parkların karar alma süreçlerinde görsel kalitenin iyileştirilmesiyle ziyaretçi sayısı ve memnuniyetinin artırılması mümkündür.

Anahtar Kelimeler: *Rekreasyonel Alan, Doğal Parklar, Görsel Peyzaj Kalite Değerlendirmesi, Kullanıcı Değerlendirmeleri, Kastamonu*

1. INTRODUCTION

Today, more than half of the world's population lives in urban areas (Miller, 2005; Gale et al., 2011; Brenner and Schmid, 2014; Sun et al., 2022). It is estimated that this rate will increase to 70% by 2050 (WHO, 2021; Cufali and Donmez, 2022; Bogenc et al., 2023). Low income and education levels in rural areas accelerate migration toward cities (Kubas et al., 2010; Antic et al., 2017). Emerging industrial and urban life affects almost all human relations with nature (Ozturk et al., 2018a). Rapid urbanization and industrialization have distanced people from nature, which has increased people's longing for nature (Gokyer et al., 2015). This phenomenon further recreational areas' importance (Chahardowli and Sajadzadeh, 2022). Especially near urban areas, natural, functional, and qualified rural recreation areas are scarce. Due to the gradual decrease of available areas, people tend to resort to recreational tourism areas that are farther away from time and economic opportunities (Habron, 1998; Vasovic et al., 2016). Green areas, which can be used primarily for large-scale recreation, have many functions, such as biodiversity, nature protection, climate change mitigation, aesthetic value, and a resting area for people (Trojanowska, 2022). Recreation areas provide active and passive forms of recreation, significantly contributing to making urban areas more livable and healthy. (Jim and Zhang, 2013; Li, 2020; Husam et al. 2021).

The interaction between the natural environment and human activities forms the background of daily life (Hou et al., 2022). Natural areas increase people's wellbeing and quality of life (McNeill, 2022). In addition, health, quality of life, parks and recreation are important in tourism studies. The typical result of the studies carried out is the contribution of park areas to recreation and tourism areas (Chen and Petrick, 2013; Peters and Schuckert, 2014; Uysal et al., 2016; Yilmaz and Isinkaralar, 2021). It helps to get rid of difficult situations such as busy and stressful working life by providing relaxation. (Tveit et al., 2018). Visual or landscape quality is critical when people choose certain recreational areas (Füger et al., 2021). The benefits of landscape areas with landscape value are not limited to the individuals living in them. These areas contribute to the region's attractiveness and create economic benefits for the region. This is because visual characters affect the quality of an entire touristic and/or recreational experience (Clay and Daniel, 2000). Visual landscape quality is increasingly important in environmental management and policy (Wartmann et al., 2021; Roth et al., 2021; Tan et al., 2022). This situation has made visual landscape quality a crucial scientific research area (Daniel, 2001; Ozturk et al., 2018a). Visual landscape quality assessment or visual assessment refers to the methods and tools used to describe and evaluate the natural beauty of landscape areas (Daniel, 2001; Gobster et al., 2019). Participatory assessments based on photographic presentations of these areas are frequently used in the visual quality assessment of landscape areas (Fuante et al., 2006; Bulut and Yilmaz, 2007; Kurdoglu, 2015; Ozturk et al., 2018b; Ozturk et al., 2023).

There have been more than 33 million confirmed cases and more than 1 million deaths worldwide during the COVID-19 process (Geng et al, 2021). Restrictions on social gatherings, movement, and closure of workplaces and indoor recreation areas, as well as concerns about contracting the disease, have increased the preference for open spaces, which are considered the least likely to transmit respiratory ailments. Park areas have played an essential role in the psychological relaxation of society during the pandemic (Ugolini et al., 2020; Olszewska-Guizzo et al., 2021; Poortinga et al., 2021). The primary purpose of this research is whether there is a change in people's perspective on these areas while the strict closure decisions of the pandemic are ending.

Since nature parks have the potential to be visited in four seasons, they attract more attention from people. These areas, which have many functions, also make significant contributions to the increase of the quality of urban life. There has been a vere increase in the need to go out to open spaces, especially with the closure of many people's homes due to restrictions during the Covid-19 pandemic process. In this process, park areas tonear urban areas and have started to be preferred for activities such as walking, healthy living, and sports. Kastamonu is among the important cities in Turkey in terms of its natural beauty and historical-cultural importance. In this context, it was chosen as the sample area for visual landscape quality assessment. The visual landscape quality survey, which was carried out through 3 photographic questionnaires belonging to 3 nature parks, was applied in. The study aims to determine the impact of COVID-19 on the perception of visual landscape quality regarding recreational areas and to reveal the priority problems of the areas with a user-oriented approach.

2. MATERIAL and METHOD

The study was conducted in Dipsizgol Natural Park (DNP) (Tosya), Sehit Serife Baci Natural Park (SSNP) (Kastamonu Center) and Yesil Yuva Natural Park (YYNP) (Abana) in Kastamonu (Figure 1).

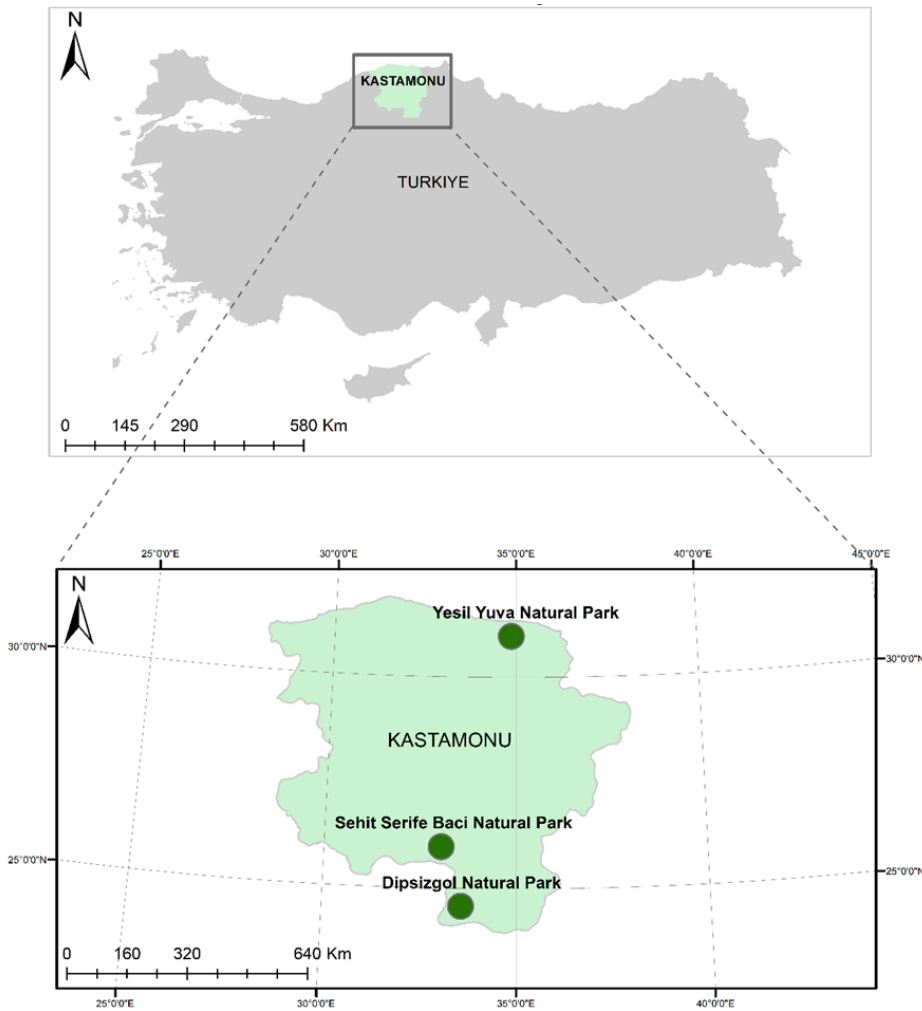


Figure 1. Locations of Sample Areas

By the purpose and method of the study, care was taken to select areas with different characteristics in Kastamonu province. In this context, three different recreational areas were determined as study areas. The three selected sample areas were declared and registered as "Natural Park", a legal protection status in Türkiye, on 11.07.2011 by Article 3 of the National Parks Law No:

2873. The development plan for recreation areas in three natural parks is available, and construction of the development plan is in progress. DNP is located at the border of Çiftler Village in Tosya district of Kastamonu province with a total size of 5 ha. It is possible to hike around the lake, watch the scenery, have a tent camp, and picnic. SSNP covers an area of approximately 10 ha and is located in the central district of Kastamonu, Kadıdağı. Nature walks, picnics, and various outdoor sports can be done in the area. Located in the Abana district of Kastamonu province, YYNP is about 5 ha. Since YYNP is situated on the coastal line, it provides opportunities for swimming, picnics, enjoying the scenery, nature walks, tents, and caravan camps.

Within the scope of the study, the Scenic Beauty Estimation Method developed by Daniel and Boster (1976) for visual quality assessment was used (Daniel, 2001; Ozhanci and Yilmaz, 2011). A literature review was conducted regarding the method used in the study (Clay and Daniel, 2000; Fuente et al. 2006; Gobster et al. 2019; Wartman et al. 2021; Qi et al. 2022) and the study areas. Field work was carried out in the study areas and 300 photographs were taken from different angles with a personal camera. Then, a total of 30 photographs, 10 from each work area, were selected to best represent the work areas by landscape architects and urban planners who are experts in their fields (Figure 2).

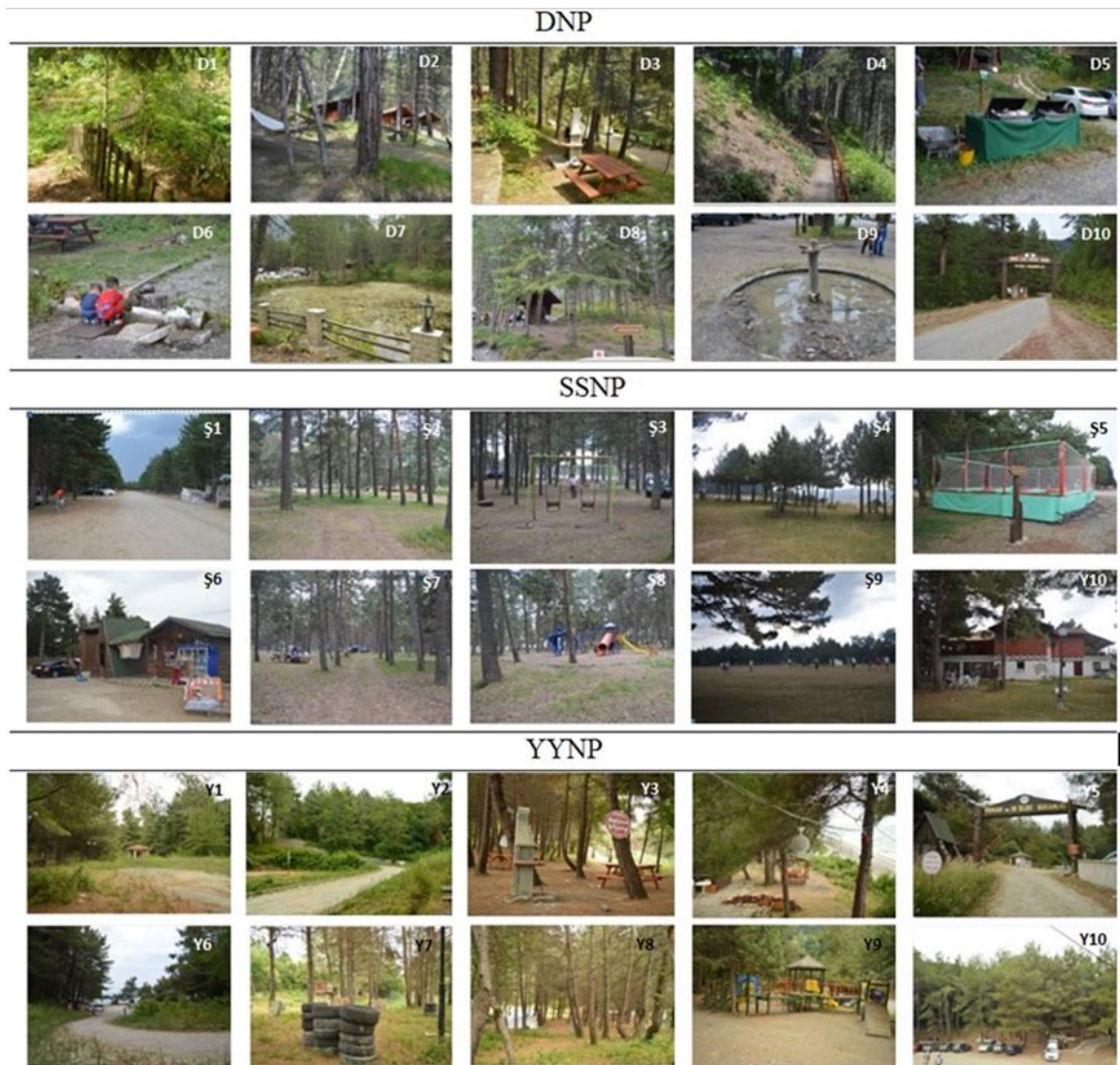


Figure 2. Visual Reflections of DNP, SSNP, and YYNP

Then, a photo survey was applied to 120 users within 11 parameters (harmonious, natural, well-maintained, openness, ordered, mobile, exciting, safe, beautiful scenery, recreation diversity, and natural material). In the photo survey, users were shown each image for 50 seconds. Then, users

were asked to score these photos with a 5-point Likert scale (1 being the lowest, 5 being the highest visual quality score) regarding visual quality parameters. The parameters used in the photo survey are as follows:

- Harmony; if there are elements that do not integrate with natural landscape elements, low; otherwise high,
- Naturalness; if you detect an apparent mismatch between the characteristics of natural and artificial landscapes, low; otherwise high,
- Well-maintained; maintenance of equipment in the area,
- Openness; the ratio between the openness and closedness of the area,
- Order; if the field is confusing, low; otherwise high,
- Mobility; possibility of moving items and performing activities,
- Exciting; having features that increase the feeling of excitement,
- Safety; if you perceive that the components in the area evoke risks or hazards, low; if you sense a non-hazardous, welcoming, and confident appearance, high,
- Scenic beauty; low or increased according to the beauty of the scenery,
- Diversity; diversity of geographic characteristics and equipment in the area,
- Natural material; the compatibility of the equipment materials with the ecological aspects of the site.

At the end of the study, Spearman Correlation and Chi-square test were performed in the SPSS 22.0 program to determine whether there is a statistical relationship between the demographic information (gender and age) of the users obtained from the surveys and the characteristics of the park areas (harmony, naturalness, etc.).

3. RESULTS

According to survey data, 120 users were asked to evaluate the parameters in a photo survey consisting of the selected photos. First, the demographic characteristics of the participants were asked (Figure 3).

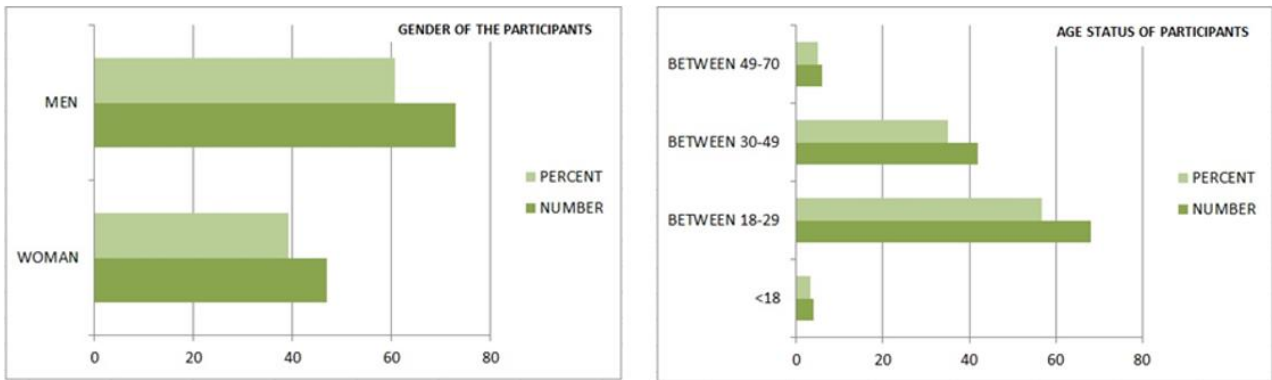


Figure 3. Demographic Characteristics of Participants

When the natural parks were evaluated according to the determined parameters, the highest score for DNP was obtained by the scenic beauty parameter (4.28) and the lowest score by the recreational diversity (3.30) parameter. The participants evaluated SSNP with the highest score in terms of being harmonious with the natural features and equipment elements (3.89), while they evaluated it with the lowest recreational diversity (3.31). When assessing the assessments made for the YYNP, they indicated that the highest mobility (3.55) was here while they considered it with the lowest recreational diversity (3.08). The fact that the area is located in the coastal city by location and that the site is more entertaining than other districts, especially during the summer season, supports this situation (Figure 4).

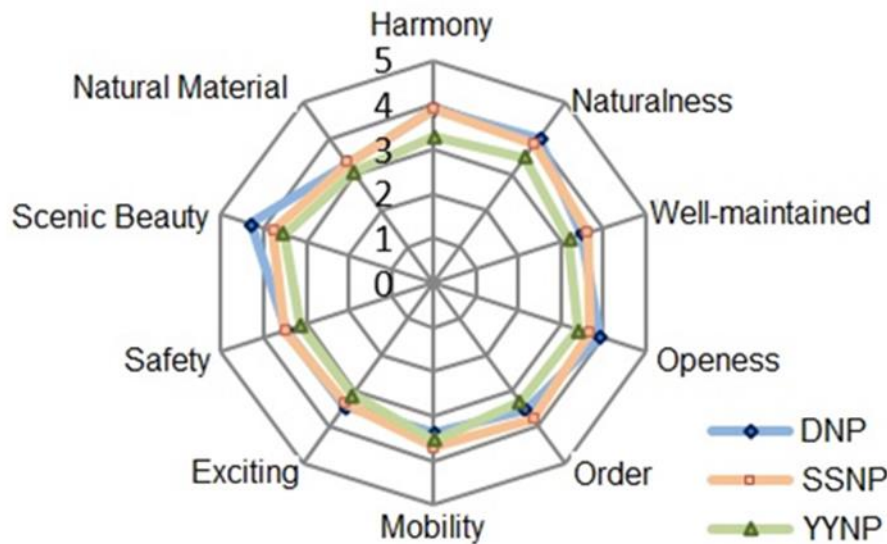


Figure 4. Visual Quality Parameters of Sample Areas

The chi-square test was applied to the data obtained from the surveys conducted via SPSS 22.0 software to determine whether there was a statistically significant relationship between the participants' demographic characteristics, gender and age profiles, and their visual quality evaluations. The significance level was accepted as $p < 0.05$. The relationship of the participants according to their gender was questioned; while harmony and safety parameters were found to be significant for YYNP, men found the area safer and more harmonious than women. The scenic beauty and mobility parameters for DNP were significantly different. In both areas, women evaluated the scenery as more beautiful and more favorable in terms of mobility than men. There is also a significant difference in scenic beauty parameters for SSNP. Here, women evaluated it as positive with a higher rate than men (Table 1).

Table 1. The Relationship between the Criteria and the Gender of the Participants

	GENDER	DNP			SSNP			YYNP		
		AO	N	P	AO	N	P	AO	N	P
HARMONY	W	3.94	47	0.806	3.98	47	0.124	3.02	47	0.017*
	M	3.88	73		3.84	73		3.48	73	
NATURALNESS	W	4.02	47	0.48	3.94	47	0.112	3.26	47	0.084
	M	4.03	73		3.74	73		3.62	73	
WELL-MAINTAINED	W	3.68	47	0.181	3.70	47	0.505	3.06	47	0.317
	M	3.38	73		3.56	73		3.27	73	
OPENESS	W	3.98	47	0.752	3.79	47	0.343	3.30	47	0.598
	M	3.85	73		3.60	73		3.47	73	
ORDER	W	3.51	47	0.774	3.94	47	0.17	3.19	47	0.617
	M	3.52	73		3.71	73		3.38	73	
MOBILITY	W	3.66	47	0.023*	3.89	47	0.092	3.60	47	0.87
	M	3.22	73		3.58	73		3.52	73	
EXCITING	W	3.36	47	0.721	3.53	47	0.309	2.91	47	0.768
	M	3.47	73		3.23	73		3.22	73	
SAFETY	W	3.45	47	0.766	3.64	47	0.183	2.87	47	0.012*
	M	3.48	73		3.41	73		3.29	73	
SCENIC BEAUTY	W	4.60	47	0.008*	4.19	47	0.046*	3.49	47	0.983
	M	4.08	73		3.53	73		3.53	73	
DIVERSITY	W	3.19	47	0.345	3.47	47	0.642	2.96	47	0.292
	M	3.37	73		3.21	73		3.16	73	
NATURAL MATERIAL	W	3.60	47	0.212	3.79	47	0.459	2.94	47	0.206
	M	3.93	73		3.53	73		3.41	73	

*THE SIGNIFICANCE LEVEL: $P < 0.05$

The relationship between the age distribution of the participants and the parameters was questioned. According to the results, the parameters of harmony, order, and natural material usage for YYNP differ significantly according to the age of the participants. Participants in the 30-49 age group stated that there are more compatible materials than other age groups, the area is more organized and natural, and materials are suitable for this (Table 2).

Table 2. The Relationship between the Criteria and the Age of the Participants

	DNP				SSNP			YYNP		
	AGE	AO	N	P	AO	N	P	AO	N	P
HARMONY	<18	4.25	4	0.600	4.25	4	0.63	2.75	4	0.013*
	18-29	3.81	68		3.94	68		2.99	68	
	30-49	4.00	42		3.74	42		3.81	42	
	50-70	4.00	6		4.17	6		3.67	6	
NATURALNES S	<18	3.75	4	0.322	4.25	4	0.903	3.25	4	0.201
	18-29	3.85	68		3.76	68		3.16	68	
	30-49	4.24	42		3.79	42		3.90	42	
	50-70	4.67	6		4.33	6		4.17	6	
WELL- MAINTAINED	<18	3.75	4	0.757	4.25	4	0.759	3.25	4	0.078
	18-29	3.37	68		3.63	68		2.93	68	
	30-49	3.71	42		3.48	42		3.62	42	
	50-70	3.33	6		4.00	6		3.17	6	
OPENESS	<18	4.25	4	0.405	4.00	4	0.415	3.00	4	0.302
	18-29	3.76	68		3.68	68		3.24	68	
	30-49	4.10	42		3.62	42		3.69	42	
	50-70	3.83	6		3.83	6		3.50	6	
ORDER	<18	4.00	4	0.586	4.25	4	0.96	3.25	4	0.025*
	18-29	3.32	68		3.81	68		3.07	68	
	30-49	3.71	42		3.71	42		3.71	42	
	50-70	4.00	6		4.00	6		3.17	6	
MOBILITY	<18	3.25	4	0.834	3.50	4	0.573	4.00	4	0.98
	18-29	3.35	68		3.68	68		3.44	68	
	30-49	3.48	42		3.79	42		3.67	42	
	50-70	3.33	6		3.50	6		3.67	6	
EXCITING	<18	3.25	4	0.713	3.25	4	0.979	2.50	4	0.099
	18-29	3.31	68		3.34	68		2.84	68	
	30-49	3.67	42		3.36	42		3.50	42	
	50-70	3.17	6		3.50	6		3.67	6	
SAFETY	<18	3.50	4	0.771	4.00	4	0.188	3.25	4	0.139
	18-29	3.34	68		3.46	68		2.91	68	
	30-49	3.69	42		3.45	42		3.43	42	
	50-70	3.33	6		4.00	6		3.33	6	
SCENIC BEAUTY	<18	4.50	4	0.710	4.00	4	0.084	3.75	4	0.376
	18-29	4.25	68		3.87	68		3.25	68	
	30-49	4.31	42		3.60	42		3.81	42	
	50-70	4.33	6		4.17	6		4.33	6	
DIVERSITY	<18	3.50	4	0.794	4.00	4	0.208	3.50	4	0.079
	18-29	3.16	68		3.28	68		2.74	68	
	30-49	3.16	42		3.28	42		2.74	42	
	50-70	3.16	6		3.28	6		2.74	6	
NATURAL MATERIAL	<18	4.25	4	0.751	4.00	4	0.056	3.25	4	0.006*
	18-29	3.62	68		3.71	68		2.79	68	
	30-49	4.02	42		3.38	42		3.79	42	
	50-70	4.00	6		4.33	6		4.17	6	

**THE SIGNIFICANCE LEVEL: P<0.05*

4. CONCLUSION and DISCUSSION

The importance of a healthier relationship between the environment and humans has been increasing. The COVID-19 pandemic has also greatly affected the quality of urban life, necessitating the evaluation of recreation areas. Being aware of the types, components, and importance of recreational areas such as national parks, which are an essential part of our daily lives, is necessary for more conscious design and planning.

In the study, visual quality analyses of Dipsiz Göl Nature Park, Şehit Şerife Bacı Nature Park, and Yeşil Yuva Nature Park, which are essential in terms of natural beauty and located in the city of Kastamonu, were made. In line with the determined parameters, an evaluation was created using the photo-survey method on the visuals of the areas. With the visual quality analysis applied to these three crucial areas that meet the recreation need of Kastamonu province, deficiencies and the parameters required to be protected were revealed. As a result of the analysis, it is noteworthy that all the subject areas obtained the lowest scores from the 'recreational diversity' parameter, indicating that the participants think that their activities in these areas are limited. This situation reveals the necessity of increasing the variety of recreational activities in all three sample areas. However, these areas are important recreational areas within the status of protected areas for both Kastamonu province and the nearby region. Therefore, to evaluate these areas, especially their landscapes, from an integrated perspective, it is necessary to take into account the distribution of the landscape, land use, or what is evaluated as potential, as well as how people perceive these areas. An approach that integrates with people's perceptions is a prominent feature in the European Landscape Convention. The results of the study are important in terms of both determining the factors that determine the visual and functional quality of the areas where the research is conducted and determining what kind of deficiencies the people using the areas perceive. In recreational areas, in addition to protecting natural resources, users' expectations must also be met. In this case, the necessity of making recreational management plans within the framework of the protection-use principle emerges. Outdoor activities, exhibitions, fairgrounds, musical performance areas, children's playgrounds, etc., that support physical and mental development are proposed according to the size of the regions. On the other hand, developing alternative activities such as nature walks in these areas will also contribute to their development. These areas, especially with dense vegetation, constitute a critical potential source for increasing aesthetic quality. Constructing landscape viewing areas in suitable locations will further increase the importance of the areas.

YYNP was qualified with lower points in all parameters compared to other areas, which implies that maintenance and landscaping work for this area should be performed immediately. The fact that this area is located in the district of Abana, where the secondary dwellings (summer houses) of the urban dwellers, which are especially popular in summer months, exist is very important in the region. In the district, whose population can go up to 5 times in the summer, it is important to make functional as well as visually aesthetic works and to choose the equipment that is compatible with nature but which shows diversity.

When the natural parks subject to the study were evaluated according to the determined parameters, the highest score for the DNP was obtained in the landscape beauty parameter with 4.28. It is thought that the lake in DNP has a significant effect on this result. As a matter of fact, Ozhanci and Yilmaz (2011) found that there is a substantial relationship between the type of water source and the scenic beauty and that the water ratio positively affects the visual quality. When planning in the study areas, especially the needs and desires of modern society should be considered. Cleaning and maintenance are among these needs and wants, in particular. Aytas and Uzun (2015) state that neglected areas negatively affect the naturalness factor compared to well-maintained areas. In addition, it is stated that neglected areas reduce the level of visual perception and appreciation.

Visual landscape quality assessments have become the essential components of spatial planning, landscape planning, and management in evaluating the changes in the physical environment and the data they create visually. While planning an area, it is important to determine the visual quality value, that is, to reveal its aesthetic value. It is an essential method of determining the existing landscape structure with visual quality assessment and the potential of the elements

that make up the landscape in that area. In this study, which was carried out in the sample of Kastamonu city, the deficiencies and visual evaluations of nature parks were presented. The results obtained from the study are essential in determining the factors affecting the visual and functional quality of the sample recreation areas as well as revealing the perceived deficiencies of the users in the regions and constituting the basis for future comprehensive recreation planning studies related to the areas.

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