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Evaluation of Urban Park in Alanya County with Visual Quality Assessment Method Antalya/ Turkey*

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Abstract

With the Industrial Revolution that took place in 18th century, a rapid transition from agriculture to industrial society has started and it had different impacts on all around the globe. During this process, the cities where the majority of the human population lived were negatively affected from these changes. Contemporary environment creating disciplines are showing great efforts to renew the cities which have functional and aesthetic problems and make them more livable environments. The most important components of the urban aesthetic are outdoor and green fields. Due to their active use, city parks constitute a component of urban outdoor green field system which serves the urban society the most. Scientific researches which aim at discovering the visual quality of the urban parks through assessment and description of the components which compose this visual quality will also contribute towards increasing the aesthetics value of the urban. In this research, Abdurrahman Alaettinoğlu Urban Park in Alanya County is designated to be study material and in this urban park photo-questionnaire application has been performed on local and foreign users. According to results of the research, with the findings obtained from the study, proposals which may contribute to planning, design and management of Urban Park were put forward.

Keywords: Photo- Questionnaire, Urban Park, Visual Perception, Visual Quality

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INTRODUCTION

According to Cranz [1] parks are cultural landscape areas born by the result of industrial revolution. These public service fields bear very important and several functions in re-sustaining the broken link between the nature and human which develops inside the complex urban organization as a condition of urbanization [2].

The contribution of parks to aesthetic and physical quality of the city has been known for a long time [3]. They provide recreational opportunities, positively modify natural environment and thus increase the urban life quality [4]. Urban parks may contribute a lot to the environments where daily events can be realized and shared with different persons [5]. Parks also provide a resource for the education of school kids and adults. Well-designed parks are attractive from historical, cultural, botanical and wild life perspectives [6-7]. With mass-based activities for children and youth, by helping them develop major capabilities, knowledge and tendencies they serve in the best manner and increase social development by decreasing the crime rates [6-8].

In addition to their physical benefits, urban parks also have very significant contributions to the visual qualities of the cities. They soften the urban rigid texture besides providing richness in form and color at the same time. They can camouflage the negative visual components of the cities and form the background for some city views. For this reason, studies undertaken to develop the visual quality of the park landscapes will also contribute to increase the urban quality.

Landscape Visual Quality

While the perception of the environment is realized with several senses (sight, feeling, hearing and touching), the most important one of them is the sight. More than 80 % of the sensual input of the human is provided by the sight. Therefore, for the most part the perception of the environment is born visually [9]. The changing visual structure of the environment continuously affects the perception of the user and the development of this visual quality acquires significance for meeting the aesthetic needs and expectations of the people [10-11].

The quality of the landscaping can be evaluated in the scope of preferences and judgments. Preference is a thought related to the "appreciation" based experience of a person. According to Kaplan [12] considering the evolution process of the humans, preferences are closely related to basic requirements. In other words, the preferred environments will be the places where humans are more active and their requirements are met more. In studies which take user needs, appreciation and preferences, in addition to functional appreciation the importance of visual appreciation is also emphasized [10-11]. For example; Kaplan showed that people prefer natural views over urban views in his studies in 1979 [13].

The objective and scientific detection of the visual quality of a view is difficult since the beauty cannot be defined with environmental characteristics only and it depends on human judgment [14-15]. Visual landscaping quality is a mutual product of distinct (visible) landscaping features which are in interaction with the perceptual and emotional psychological processes of the observer. The way this effect of the environment on humans which is converted into behavior is interpreted and evaluated is defined as "visual landscape quality" formed as a result of visual perception process. Visual landscape quality can be defined as "relatively aesthetic impeccability of a landscape" and it can be measured through the appreciation of the observer [16, 17,-18].

Objective and Target of the Research

In this research, it is aimed to determine the visual quality and the impacts of some conceptual parameters (coherence, naturalness, maintenance, complexity, order, activity, excitement and safety) on the visual quality of Abdurrahman Alaettinoğlu City Park. Furthermore, it is aimed that the obtained results will be used in planning, design, field use, renewal and management operations for urban parks, in elsewhere.

MATHERIALS AND METHODS

Research Area

Abdurrahman Alaettinoğlu City Park located in Alanya is designated as the research area (Figure 1). The location of the city park is 36°32¢41.69² northern parallel and 31°59¢07.96² eastern latitude. Located at 3 m. altitude on the shoreline, the park is built by Alanya Municipality, Directorate of Parks and Gardens and opened for public service in March 2007.

In this research, visual quality assessment method has been used. Psychophysical studies which investigate the relations between the perception of humans and the physical properties if the environment are taken as basis [16, 19, 20, 21, -22]. The research has three phases. In the first phase, photographs which may represent the selected parks are taken according to distinct criteria. In the second phase, photo-survey is prepared and applied on park users. In the final phase, the data acquired from photo-questionnaire are evaluated with the help of statistical analyses.

Photographing

Approximately 600 photographs were taken from the

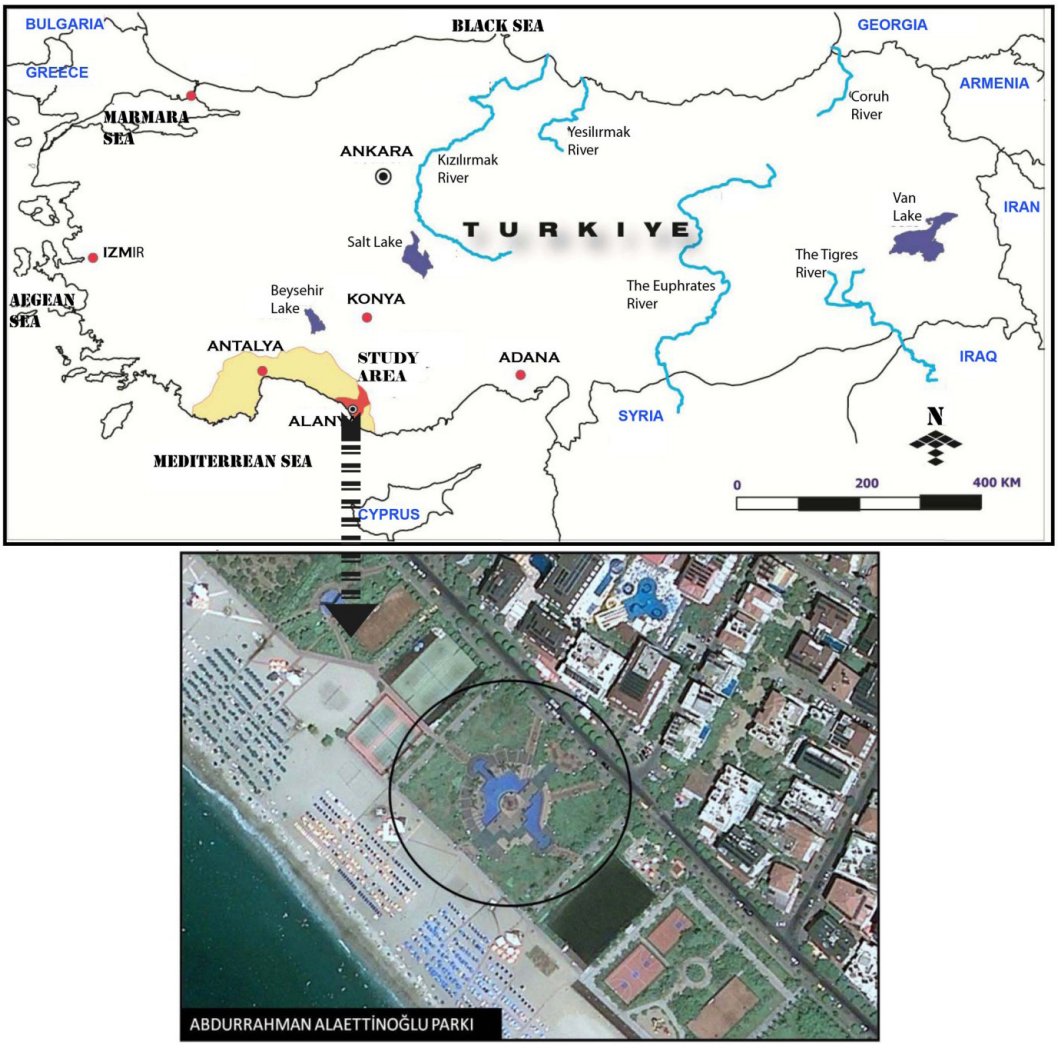

Fig.1. Geographical Location of the Research Area

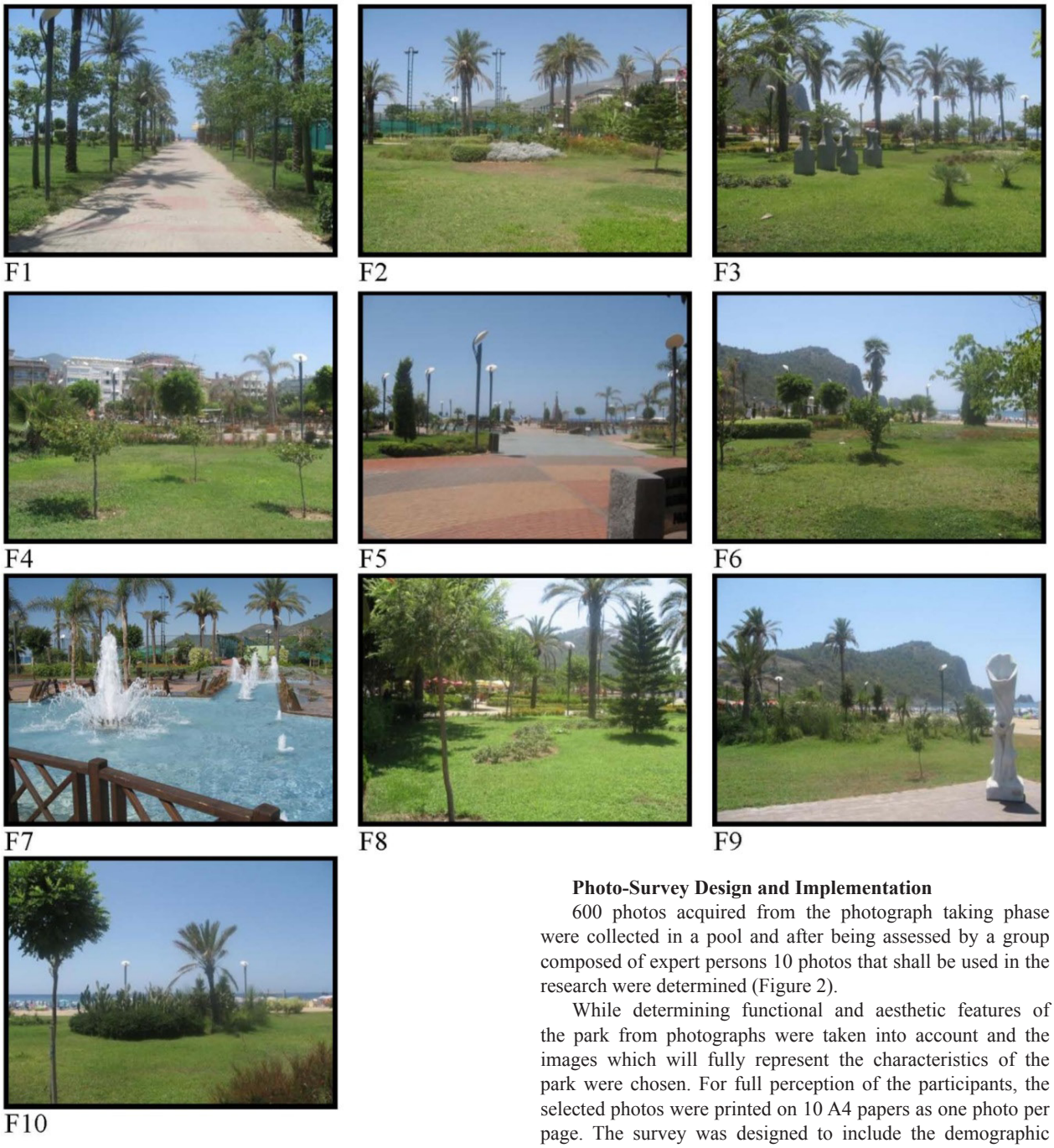

Fig.2. Urban Park Photos Used in the Research

research area between June and July 2010 period. Photographing has been performed from the edges of the park towards its center from the main axes and important viewing points. Photographing has been performed with a digital camera which has 10 megapixel resolutions, 4x digital zoom, 10x optical zoom, 3648 x 2048 maximum image resolution, 3 inch display size and 230000 pixel LCD resolution. Photos were taken every day of the week between 11.00 and 15.00. During photograph taking, special attention was paid that the sky was clear and the component which may negatively affect the human perception was decreased. Furthermore, subjective photograph taking which might affect the result of the research was avoided. In the scope of the research photograph taking operation was completed so that all features of the park were represented.

Photo-Survey Design and Implementation

600 photos acquired from the photograph taking phase were collected in a pool and after being assessed by a group composed of expert persons 10 photos that shall be used in the research were determined (Figure 2).

While determining functional and aesthetic features of the park from photographs were taken into account and the images which will fully represent the characteristics of the park were chosen. For full perception of the participants, the selected photos were printed on 10 A4 papers as one photo per page. The survey was designed to include the demographic questions about the participants such as gender, age, education level, occupation, income status, residence and to inquire nine conceptual parameters which were coherence, naturalness, maintenance, complexity, order, activity, excitement, safety and visual quality [20]. For every image, conceptual parameters and physical features were scored on Likert Scale as 1, 2, 3, 4, 5 (1 the lowest, 2 low, 3 medium, 4 high and 5 the highest) [23, 24, 25, 26,-27].

The survey was evenly distributed over the days of the week and performed by personal interaction with the participants between 10.00 and 14.30. The participants were randomly chosen in the park environment and it was tried to have the same number of participants from each gender. Firstly, the participants were informed about the research and short explanations were given regarding the parameters and scoring scale. On average, a one-on-one survey took 7 minutes with each participant. The

information obtained from the participants was detailed on the prepared inventory papers without any mistakes and, thus, raw data were prepared. Photo-survey was performed in the related park with 159 participants between August and October 2010.

Statistical Analysis

Data acquired from the photo-survey were firstly arranged in Microsoft Excel Software and made suitable for statistical analysis. Using SPSS 15.0 software visual quality and other psychological parameter averages were calculated for each photograph. In order to determine the direction of relations between visual quality and parameters Spearman Correlation Analysis was performed [28-29].

RESULTS AND DISCUSSION

Demographical Characteristics of the Participants

Demographical characteristics of the participants of the photo-survey undertaken in Abdurrahman Alaettinoglu Park for the research are given in Table 1. Almost 58% of the participants were males. It was observed that especially the young (between 18 and 29 years of age) participants were dominant. On the other hand, there was no participant who is older than 70 years. When the education level of the participants was examined, the half of the participants was made up of high school and university graduates. Half of the participants were students. The young population in Alanya district could be shown as the reason. The income level of the participants was generally low. As mentioned above, since the participants were composed of students and a young population resulted in a low income level. In terms of residence, the participants show a homogeneous distribution. In survey study, an effort was made to have diversity in terms of demographical characteristics. However, due to the location of the parks in the city, usage variations in parallel with the seasons and the difficulties imposed by the fact that survey had to be performed by personal interaction this cannot be fully achieved in demographical characteristics (age, income and occupation) of the participants.

Scores Obtained for Visual Quality and Other Conceptual Parameters

The visual quality and average scores towards 8 conceptual parameters pertaining to the 10 images taken from the urban park which was determined to be the research area are given in Table 2.

Table.1. Demographical characteristics of the participants

Demographical Characteristics	Participants	N (159)	Percentage (%)
Gender	Male	93	58,5
	Female	66	41,5
Age	<18	43	27,0
	between 18-29	70	44,0
	between 30-49	33	20,8
	between 50-70	13	8,2
	70<	0	0,0
Education	Primary school	15	9,4
	High School	58	36,5
	University	83	52,2
	Post-graduate	3	1,9
Occupation	Worker	8	5,0
	Public Sector Employee	10	6,3
	Merchant	10	6,3
	Retired	7	4,4
	Student	98	61,6
	Housewife	11	6,9
	Unemployed	1	0,6
	Other	14	8,8
Income	0-1000 TL.	103	64,8
	1000-2000 TL.	31	19,5
	2000-3000 TL.	13	8,2
	3000-5000 TL.	9	5,7
	5000 TL. And above	3	1,9
Residence	Local	65	40,9
	Tourist	94	59,1

Table.2. Visual Quality Parameter Point Averages of the Photographs

Photo No	Visual Quality	Coherence	Naturalness	Maintenance	Complexity	Order	Activity	Excitement	Safety
F1	4.04	4,14	4,08	4,26	4,09	4,21	3,22	3,31	3,68
F2	3.23	3,42	3,53	3,82	3,66	3,53	2,94	2,73	3,33
F3	3.80	4,06	3,69	4,09	3,94	3,96	3,36	3,35	3,63
F4	2.90	3,11	3,11	3,46	3,26	3,19	2,93	2,60	3,18
F5	3.74	3,92	3,21	4,13	3,98	4,02	3,63	3,41	3,66
F6	3.44	3,68	3,99	3,75	3,71	3,61	3,28	3,04	3,45
F7	4.11	4,23	3,45	4,37	4,27	4,36	4,25	4,03	3,78
F8	3.91	4,17	4,22	4,30	3,95	4,07	3,62	3,52	3,77
F9	3.65	3,62	3,56	3,91	3,79	3,47	3,32	3,08	3,45
F10	3.73	3,81	3,82	4,07	4,06	3,97	3,47	3,38	3,64

While F7 had the highest score (4.1) from quality perspective, F4 received the lowest score (2.90). When F7 was examined the dominant design elements of the photograph were ornament pool and water games. Additionally date palms, wooden limitation elements, plantation, clear sky and topography in the background were other composition components forming the photograph. Some studies in the literature also supported this fact. It is proven that steep mountainous and high slope areas [30], water element [31-32] and near-by view [18] affect the visual quality positively.

The most coherent photograph in Abdurrahman Alaettinoğlu Park was F7 (4.23) and the photograph that received the lowest score from coherence perspective was F4 (3.11) (table 2). As shown in the results the lowest and highest scores of the visual quality were repeated for coherence parameter of the images. Coherence parameter affects the value of the visual quality in a positive manner [18].

The most naturalness photograph in the park was F8 (4.28) while the photograph that received the lowest score from naturality perspective was F4 (3.11). The majority of F8's photograph area was composed of decoration plants and grassland. In the background, F4 photograph included buildings with hotel and residence functions. Trees had strong positive impacts of landscape preference. The presence of the trees was an important sign that they were preferred. The preference scores of the views including trees were higher as compared to others [23, 33,-34].

From park maintenance parameter perspective photographs F7 and F4 received the highest (4.37) and lowest (3.46), respectively. Maintenance parameters had a very deterministic position from visual preference point of view [30]. From complexity parameter perspective photograph F7 and F4 received the highest (4.27) and lowest (3.26), respectively. Sevenat and Antrop [31] mentioned that complexity parameter did not have a significant impact on landscaping aesthetics in their studies. Being one of the components of data processing theory proposed by Kaplan and Kaplan [23], complexity was an important parameter to describe the visual quality.

From order parameter perspective photographs F7 and F4 received the highest (4.36) and lowest (3.19), respectively. According to Wong and Domroes [20], along with naturalness and maintenance the order parameter increased the visual quality. From park activity parameter perspective photographs F7 and F4 received the highest (4.25) and lowest (2.94), respectively. From park excitement parameter perspective photograph F7 and F4 received the highest (4.03) and lowest (2.60), respectively.

From park safety parameter perspective photograph F7 and F4 received the highest (3.78) and lowest (3.18), respectively. Safety perception of a person was in a close relation with visual closure and visual permeability situations [36].

Relations Between Visual Quality and Conceptual Parameters

Spearman correlation analysis was applied to the data obtained from the survey to determine the correlations between the visual quality and the 8 conceptual parameters selected in the scope of the project as well as the nature how these parameters affect the visual quality. Analysis results obtained for 10 photographs representing Abdurrahman Alaettinoğlu Urban Park are given in Table 3.

Table.3. Correlations between the Visual Quality of the Photographs and Conceptual Parameters

	Photo No	Coherence	Naturalness	Maintenance	Complexity	Order	Activity	Excitement	Safety
VISUAL QUALITY	F1	0.56* 0.000	0.54* 0.00	0.54* 0.000	0.45* 0.000	0.54* 0.000	0.39* 0.000	0.42* 0.000	0.38* 0.000
	F2	0.55* 0.000	0.55* 0.000	0.50* 0.000	0.49* 0.000	0.53* 0.000	0.53* 0.000	0.55* 0.000	0.47* 0.000
	F3	0.68* 0.000	0.55* 0.000	0.64* 0.000	0.65* 0.000	0.68* 0.000	0.51* 0.000	0.52* 0.000	0.46* 0.000
	F4	0.73* 0.000	0.66* 0.000	0.64* 0.000	0.66* 0.000	0.66* 0.000	0.53* 0.000	0.58* 0.000	0.59* 0.000
	F5	0.65* 0.000	0.56* 0.000	0.57* 0.000	0.57* 0.000	0.57* 0.000	0.56* 0.000	0.64* 0.000	0.50* 0.000
	F6	0.68* 0.000	0.56* 0.000	0.56* 0.000	0.68* 0.000	0.66* 0.000	0.57* 0.000	0.62* 0.000	0.60* 0.000
	F7	0.68* 0.000	0.52* 0.000	0.61* 0.000	0.65* 0.000	0.60* 0.000	0.53* 0.000	0.65* 0.000	0.60* 0.000
	F8	0.63* 0.000	0.67* 0.000	0.66* 0.000	0.58* 0.000	0.74* 0.000	0.47* 0.000	0.61* 0.000	0.65* 0.000
	F9	0.58* 0.000	0.59* 0.000	0.58* 0.000	0.56* 0.000	0.64* 0.000	0.55* 0.000	0.63* 0.000	0.58* 0.000
	F10	0.65* 0.000	0.64* 0.000	0.58* 0.000	0.57* 0.000	0.57* 0.000	0.73* 0.000	0.73* 0.000	0.51* 0.000

* Correlation is significant at a level of 0,01.

When the table is examined, strong relations were found between the visual quality of Urban Park and all of the conceptual parameters determined in the research. In all of the 10 photographs representing the urban park statistically meaningful results have been found. When F7 photograph which received the highest visual quality value is examined, the variation degrees between visual quality and parameters are, in proper order, 68% coherence, 65% complexity, 65% excitement and 61% maintenance. When F4 photograph which received the lowest visual quality value is examined, the variation degrees between visual quality and parameters are, in proper order, 73% coherence, 66% naturalness, 66% order, 66% complexity and 64% maintenance.

In general, it is detected that the visual quality of the park has strong positive relations with the selected conceptual parameters. Analyses of all of the photographs which are used for the research verified this result.

CONCLUSION

The common objective of visual quality assessment studies is to develop visual criteria and modeling processes which can be used in planning and design processes and expand the environmental sequence required for environment protection and development [37]. The results of the research conducted on the urban park in Alanya district are assessed in this framework. From the perspective of visual quality and the parameters related thereof, some detections have been made which will contribute to the literature and support it.

In landscaping resource analysis studies several natural and cultural features are taken as basis. One of the most prominent of these features is visual quality value. Visual quality values calculated in a distinct region are also accepted as resource values of that region. In the study conducted in Alanya district the values obtained towards visual quality of the urban parks can also be used in detecting the resource values of the district.

It is an obligation that landscaping shall be recognized as a variable in area usage decisions and its visual value shall be determined. Field usage is an important factor in landscape planning and design studies which shall be performed in urban areas and it shall be taken into account. Especially in urban areas special care shall be paid that green areas are located inside urban areas. This situation shall also be assessed from urban park perspective. Especially, the parks which will be formed adjacent to natural landscape and cultural landscape will bear higher values from visual quality point of view. The reason is that these areas can also form very good background views for the parks.

The visual values of the environment which is corrupted due to rapidly growing population, internal migration, unplanned urbanization. Alanya district has a high natural and cultural landscape potential. For the protection and sustenance of this potential the determination and development of the visual quality figure is very important from protection point of view. In the center of the district many historical and cultural elements are present. These values shall play a big role in this respect for the parks and green areas formed in their closed vicinities.

According to Clay and Daniel [38] the main component of the natural environment from tourism and recreational perspective is visual or view quality. Landscapes which are important for the view are not only beneficial for the individuals living them. They significantly contribute to the attractiveness of the area; therefore they can be correlated to financial benefits of the region. Because visual character affects the whole quality of a touristic/recreational experience [14]. The study area is one of the most popular touristic places in our country. Areas such as this are very important for the vision of the country. Therefore it is required that these areas are studied and developed from, especially, visual quality perspective. The demand will be higher for the tourism and recreation areas with higher visual quality and this will significantly contribute to the local and national finance.

Sight is effective in green area usage and management decisions [11-39]. According to Meitner [40] inasmuch as landscape quality assessment is an active study field in environmental perception research, it is an important component in environmental planning and management, therefore it is a ring which should not be ignored. Especially, there are strong relations between maintenance works and the visual quality of the area.

In studies which take user needs appreciation and preferences as basis, in addition to functional satisfaction the importance of visual satisfaction is also emphasized [10-11]. Visual quality studies which include psycho-physiological methods take evaluation of the landscape by users as basis. It is an obligation that the designed and implemented landscapes are in line with the preferences of the users. Otherwise, the studies which are put forward only by the views and the preferences of the experts will not receive the sufficient demand from the public. With this study, the preferences of the user groups in Alanya district are determined to a certain level.

It is thought that the results obtained from the research will be beneficial for organizations operating in environment, recreation and tourism fields, local governments being the first. Moreover, it is proposed to continue similar studies to prepare the common profiles towards the preference and requests of the regional green area users and determine the design properties of parks which will be newly built or revised.

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