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An evaluation of green areas from the point of user satisfaction in Ankara, Turkey: Gap analyses method

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Green spaces contribute to the urban environment by producing positive ecological impacts and providing spaces for recreation and contact with nature. It is proven in various researches that urban green spaces and especially the parks increase the quality of life by presenting a variety of recreational experiences. Benefits and performances of green spaces are assessed by user satisfaction studies. This study aims to reveal the satisfaction level of users by using gap analyses method in significant green spaces of Ankara namely Altınpark, Gençlik Parkı, Göksu Parkı, Harikalar Diyarı and Mogan Park. In these daily used recreation areas, quality of service, important comments (importance) of the users prior to their visits and experiences after use (satisfaction) are evaluated by ranking. With this purpose a questionnaire survey is applied to 289 people in September and November 2009. The results show that in order to raise the satisfaction level of users, the number of entertainment areas should be increased and access to information services, park keepers and wards that can react immediately to the needs of the visitors should be provided.

Key words: Ankara, green areas, gap analyses, satisfaction, recreation.

INTRODUCTION

Satisfaction of users is an important research subject for the service sector. According to Peterson and Wilson (1992) there exists around 15 000 studies on the subject of user satisfaction in the years of 1970 -1990. A major part of these studies states that all the experiences gained from the areas do not affect the satisfaction level of the clients in a correlative way (Tse and Wilton, 1988; Oliver and De Sarbo, 1988). The satisfaction gained by recreation behavior in green areas is investigated in a number of researches (Driver and Tocher, 1970; Absher et al., 1996, Burns ve et al., 1997, Muderrisoglu et al., 2006). In this study a joint method is followed which evaluates the user expectations and experiences together to determine the user satisfaction. A gap can exist between the user expectations and user experiences and if the size of the gap is large that it points out problems of management in the area. The gap analysis is the examination process of the inequality between the existing situation and the desired one (Muderrisoglu et

al., 2009).

The study aims to reveal the user expectations and the degree of fulfillment of them in selected green areas which have different characters. With the implementation of gap analysis method; how unfulfilled and fulfilled expectations affect the degree of general fulfillment is determined in the research area. According to results the management measures are suggested. In the 1990s, discussions on the satisfaction level of service and management qualities' effectiveness was started (Crompton and Love, 1995). The correlation between the quality of management and satisfaction is emphasized by MacKay and Crompton, (1990); Wright et al. (1992). On the other hand some researchers decline this relationship (Lacobucci et al., 1995). While some researchers state that evaluation of expectations and quality of experiences are not sufficient for explaining the general satisfaction level of visitors however these outputs reveal important data for the resource managers (Crompton and MacKay, 1989). Servqual, the most cited method, is developed by Parasuraman et al. (1985) and presented as a tool for service quality measurements in user satisfaction. In this study, researchers use 10 criteria to determine the

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service quality: Access, communication, competence, courtesy, credibility, reliability, responsiveness, security, understanding and tangibles. This list is formed by the studies conducted with service providers and the focus groups. User expectations and experiences are evaluated in the study as well. Studies on the recreation satisfaction show that user features, expectations, area features and the management of the area are effective on the satisfaction level. Satisfaction level of the users also change when the experience of the users on the recreation activity in the area increase. Research results prove that, people who used the area before are more content than the first time users (Muderrisoglu, 2002). Stankey (1973) shows that the satisfaction level of natural area users is affected negatively meeting with other users on site. Similarly according to many research findings with the increased degree of use the expectations of the users change (Muderrisoglu, 2002). Using gap analysis Parasuman et al. (1988) finds that motivations of the users are dynamic and change by time. It is seen that people are more motivated participating in recreation activities when they come to the area alone than with other people (Aşikkutlu, 2008). There is a positive relation between general satisfaction and the motivation factors like area features and management, experience, information and facility. Many research on tourism and recreation evaluate the relationship between expectations (or the importance factor) and the degree of its fulfillment (Crompton and MacKay, 1989; Weiermair and Fuchs, 1999; Cengiz and Çalişkan, 2009; Uzun and Yilmaz, 2009). However in this research how differences between the recreation expectations and the experiences on the area change the general satisfaction level is determined.

MATERIALS AND METHODS

Important cases of the Ankara urban green are selected as the study areas. These cases present different characters: Altınpark, Gençlik Parki, Göksu Park are urban parks, Harikalar Diyarı is a theme park and Mogan Park is a recreation ground. All of the selected sites have the high potential of visitor attraction in terms of the area size and activity variety. The questionnaire survey is applied to 289 people in Sepember and November 2009. In Ankara people use urban green areas intensively in these months because of their return from the holiday destinations by the beginning of the school terms and optimum climate conditions by the end of hot summer days. Altınpark is located in Aydınlıkevler District of Keçiören County in the northern part of the city. The park stands on a 640 000 m² of land of which 85% of it is allocated to green spaces and water surfaces and 15% of it is covered by buildings and paved surfaces.

Gençlik park which is the first urban park of Ankara covers 275 000 m² of land in a central location of the city. Göksu Park is established on a 550 000 m² of land of which 127 000 m² is a natural Susuz lake. It is on the western part of the city at a distance of 20 km to the center. Harikalar Diyarı is designed on the theme of fables and covers a total land of 651 000 m² in the western part of the city. It consists of 40 000 m² parking lot, 67 000 m² building area, 92 000 m² water surface, 25 000 m² fairy tales islands for kids

and 330 000 m² paths and paved spaces. Mogan Park recreation ground is located in the Gölbaşı County in the southern part of the city on a 601 000 m² of land at a distance of 15 km to the center. Park is established on a water front area of Mogan Lake and consists of a number of activities like restaurants and cafés, picnicking facilities, lake fishery and water cycling etc (Figure 1). A questionnaire survey is applied to a total of 289 people by random sampling method to define the important management criteria of users and to evaluate the fulfillment of users about the existing situation of green areas. In the first step, to be able to define the expectations of users, 23 criteria are presented to users and they are asked to rank these in order of importance. In the second step users are asked to asses the same criteria depending on their satisfaction in order to evaluate their experiences that gained after the park visits. Likert scale with seven response categories is used for the measurements. The rating scale is defined as follows: 1 (very important), 7 (not important at all), 1 (very satisfied), 7 (not satisfied at all). Gap value for each criterion is found by the subtraction of satisfaction value from the importance value. In order to define the satisfaction value likert scale is used with five response categories as from 5 (very satisfied) to 1 (not satisfied). Linear regression analysis is used to explain how the criteria of factor groups which measure the quality of experience affect the general satisfaction level gained from the areas. One - way variance analysis (ANOVA) is used to analyze the differences of general satisfaction levels of the study areas. Tukey test is applied in order to present the statistical differences of arithmetic averages. One-way variance analysis (ANOVA) is also used to analyze the differences of general satisfaction levels of the study areas and management criteria. All the analyses are done by SPSS 15 package program.

FINDINGS

In the first phase of the research, participants are questioned about their important management criteria for green spaces in order to make recommendations to increase the satisfaction level of the users. 23 criteria are classified in to 4 factors as; facilities management, information and experience and presented to participants. In order to determine the reliability of factors, Cronbach's alpha reliability analysis has been used ($0.6 \leq \alpha \leq 0.8$ scale quite reliability $0.8 \leq \alpha \leq 1$ scale high reliability) (Table 1). After the first phase of the survey application is completed, respondents are asked to spend some time in the green area. In the second phase of the research, respondents are questioned about their experience in the park and requested to fill out the forms in order to evaluate the 4 factors depending on their experiences during their use. It is seen that responses are generally in between "quite satisfied" and "very satisfied". However it is observed that there are significant differences between the mean values of "importance" and "satisfaction" by using the paired samples t-test, eventhough the values are quite near to each other. When the gap values are examined according to the criteria; the highest gap values are on hygienic condition of toilets; to obtain current and correct information; attitudes of park keepers and the amount of money paid for the activities respecttively. In addition gap values according to factor groups are as follows; experiences, information, management and facilities (Table 1). It is not possible to make
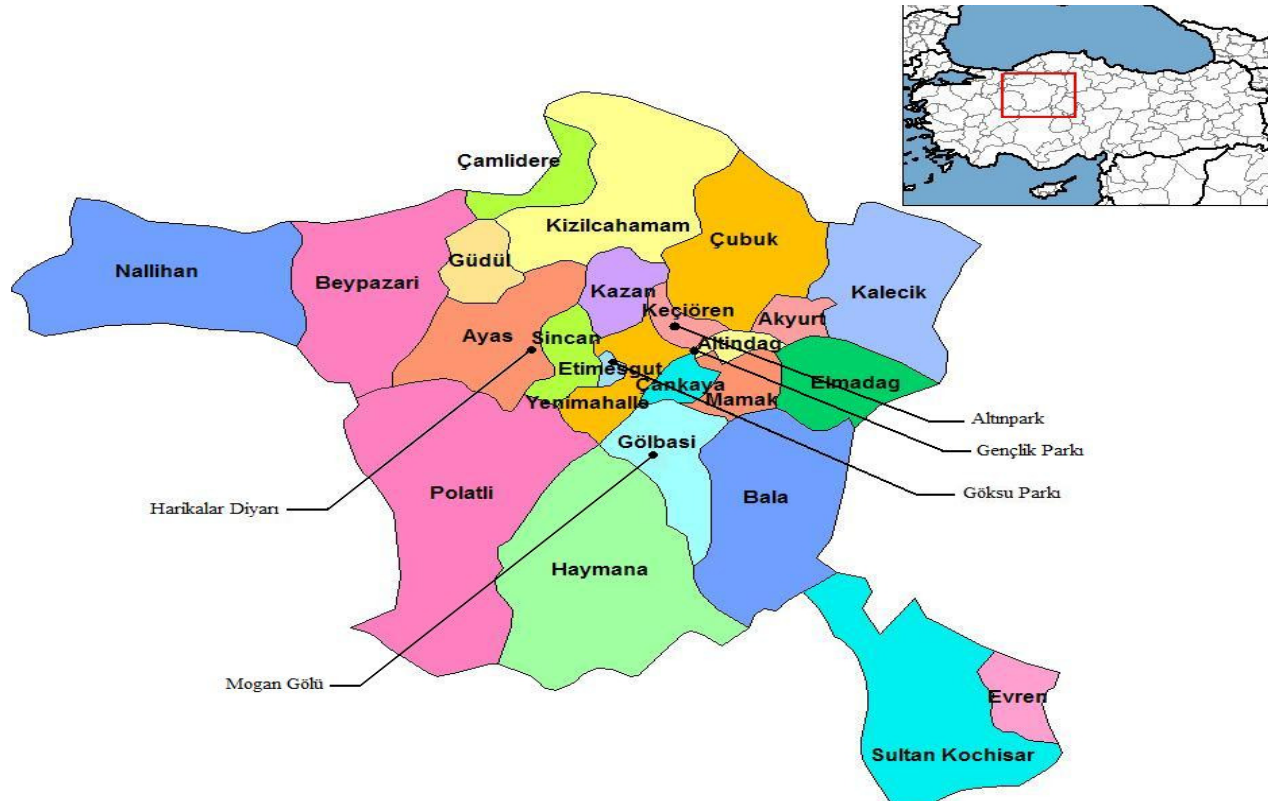
Figure 1. The location of studied Ankara Parks.

Table 1. Users gap, importance and satisfaction values.

Criteria	Gap mean value difference	Importance[a] (M.V)	Satisfaction[b] (M.V)	t
Easy access	-1.02	1.40	2.42	-8.36***
The number of entertainment areas	-0.82	1.90	2.72	-7.12***
The amount of money paid for the food	-1.43	1.91	3.34	-10.62**
The amount of money paid for the activities	-1.44	1.88	3.32	-11.29***
Parking	-1.26	1.86	3.12	-8.70***
The amount of childrens' playground	-0.98	1.72	2.70	-8.35***
Facilities	-1.16	α 0.704	α 0.869	
Availability of park commissioner who can answer the questions	-1.28	1.85	3.13	-10.15***
Fast access to park commissioners	-1.44	1.78	3.22	11. -11.57***
Safety and security in the areas	-1.47	1.43	2.90	-12.51***
Attitudes of park keepers	-1.52	1.54	3.06	-13.33***
Communication for complaints and recommendations	-1.41	1.78	3.19	-11.60***
The adequate amount of park wardens	-1.41	1.64	3.05	-11.06***
Management	-1.43	α 0.822	α 0.953	
General notification about the area	-1.00	2.32	3.32	-8.50***
Notification about the history of areas	-0.97	2.54	3.51	-7.99***
Notification about the security of the area	-1.32	2.14	3.46	-11.18***
Easy access to information	-1.46	2.10	3.56	-12.64***
Availibity of current and correct information	-1.53	2.08	3.61	-12.71***
Information	-1.26	α 0.878	α 0.944	

Table 1. Cont'd.

Hygienic condition of the toilets	-2.47	1.38	3.85	-17.30***
Esthetic quality and maintenance of the area	-1.30	1.42	2.72	-10.99***
Crowdness of the area	-0.66	2.32	2.98	-5.11***
Use of the area with conflict to other people	-1.03	1.67	2.70	-9.01***
Availibity of appropriate activities	-0.94	1.76	2.70	-8.57***
Spending time without offending of others'uses	-0.98	1.61	2.59	-8.41***
Experience	-1.23	α 0.727	α 0.894	

** ≤ 0.01; *** ≤ 0.001; M.V. Mean value
a1 (very important), 7 (not important at all); b1 (very satisfied), 7 (not satisfied at all)

Table 2. The effect of facilities to the satisfaction level.

Criteria	Satisfaction[a](B)
Facility factor f = 9,36*** r^2 = 0,17	
Constant	4.31***
Easy access	-0.09*
The number of entertainment areas	-0.18***
The amount of money paid for the food	0.013
The amount of money paid for the activities	-0.03
Parking	-0.02
The amount of children's playground	0.01

* ≤ 0.05; *** ≤ 0.001
[a] 1 (not satisfied), 5 (very satisfied)

management decisions for the areas by only looking at the gap values (Burns et al., 2003). According to Burns et al. (2003) there is a miss assumption about the researches which claim that to decrease the gap values would increase the general satisfaction level of the visitors all the time. Therefore before making the management decisions, gap analysis should be done which shows the differences between the given importance of criteria and the satisfaction level gained by the experience for the criteria; and than a general satisfaction assessment for the criteria should be made by correlating satisfaction measurements and gap values. For this purpose a regreation analysis is done in order to reveal the relation between the criteria that form the factor groups and the satisfaction level. The results show that the statistically significant criteria for facility factors are the number of entertainment areas and easy access (Table 2).

The number of entertainment areas which has the highest gap value in factors (Table 1) and is also evaluated the most effective satisfaction factor (Table 2). Therefore this criterion should be considered primarily for the management of recreation areas. Research findings reveal that availibity of park commissioners who can answer the questions; attitudes of park keepers; safety and security in the areas are significant management factors which affect the satisfaction level of users (Table 3). Attitudes of park keepers have the highest gap value among these criteria therefore park authorities should deal with the user's communication problem with the park keepers and be very careful about the inappropriate behaviors. Easy access to information is found significant and the most effective one among the notification factors (Table 4). This criterion has the lowest gap value therefore improvements on the easy access to information may not increase the general satisfaction level of the users. Survey findings indicate that experience factor is not significant on the general satisfaction level of users (Table 5). It is seen that management factor has both the highest mean gap value (1.43) (Table1) and most effective on the general satisfaction level of users. Therefore the measures stated by the users should be taken for management of the urban green spaces. Differences in satisfaction level of users in the green areas which have various qualities are examined by using Tukey test (Table 6). Results reveal that respondents mostly satisfied with their use of Mogan park. Factors are evaluated in all the studied green areas in order to determine the reasons of higher satisfaction level of users by using one way varience analysis (Table 7). Mogan park is the most preferred green area in terms of satisfaction level for all factor groups.

DISCUSSION AND CONCLUSION

Management and maintenance of green areas in Ankara is undertaken by private firms via Ankara metropolitan municipality. Even though the municipality is the decision maker, responsible and executive authority; it does not hold the strategic plans and policies for the green spaces for long, middle and short terms. Therefore generally projects are carried out individually. The first step is to produce plans and policies which are away from political influences and have a holistic perspective which reflect the scientific approaches and researches that reveal the existing situation of green areas. In this context this research provides results for the existing situation of the

Table 3. The effect of management to the satisfaction level.

Criteria	Satisfaction[a] (B)
Management factor F=7,69*** R^2=0,15	
Constant	4.23***
Availibility of park commissioner who can answer the questions	-0.14*
Fast access to park commissioners	0.07
Safety and security in the areas	0.05
Attitudes of park keepers	-0.11*
Communication for complaints and recommendations	0.04
The adequate amount of park wardens	-0.15*

* ≤ 0.05; *** ≤ 0.001   [a] 1 (not satisfied), 5 (very satisfied)

Table 4. The effect of notification to the satisfaction level.

Criteria	Satisfaction[a] (B)
Notification factor F = 8,12*** R^2 = 0,13	
Constant	4.25***
General notification about the area	-0.03
Notification about the history of areas	0.02
Notification about the security of the area	-0.01
Easy access to information	-0.21**
Availibity of current and correct information	0.03

* ≤ 0.05; *** ≤ 0.001   [a] 1 (not satisfied), 5 (very satisfied)

Table 5. The effect of experience to the satisfaction level.

Criteria	Satisfaction[a] (B)
Experience factor F = 9,40*** R^2 = 0,17	
Constant	4.38***
Hygienic condition of the toilets	-0.02
Esthetic quality and maintenance of the area	-0.03
Crowdness of the area	-0.06
Use of the area with conflict to other people	-0.06
Availibity of appropriate activities	-0.07
Spending time without offending of others' uses	-0.04

* ≤ 0.05; *** ≤ 0.001   [a] 1 (not satisfied), 5 (very satisfied)

green areas and presents information for management and satisfaction levels from the point of users. The evaluation of the findings obtained by the research through Parks and Environmental Protection Directorate of the Municipality would undoubtedly provide measures for green areas which is the applicable contribution of the research.

In the research criteria for the determination of satis-faction level are classified as management, facilities, notification and experiences. Research findings reveal that the satisfaction level of Ankara green area users change between quite satisfied and very satisfied which prove the positive effects and contribution of green areas to citizens' quality of life. Altınpark, Göksu Park, Harikalar Diyari ve Mogan Park are the new recreation areas which are added to urban green in the last years. The rapid increase on population and the distribution of settlement areas bring along the establishment of new parks and recreation areas especially on the western and southern parts of the city which are at a distance from the center. In these areas the general satisfaction level of users are high in terms of the number of entertainment areas and easy access. Accesibility and proximity are very effective on the determination of satisfaction level of users and the research present similar findings with the earliear researches on the subject (Kaplan and Kaplan, 1989; Thompson, 1996).

Parks and recreation areas that established in recent years offer many activity opportunities. Variety of activities is the leading attraction element and brings people together from the different regions of the city (Oğuz, 2000; Beler, 1993). As an example mountain coaster and go-cart in Göksu Park, fable characters in Harikalar Diyari, and roller skate in Altınpark are the favorite activities of young people. Evaluation of the results show that the amount of money paid for the activities has the highest gap value which affect the satisfation level of users. In Ankara while entertainment areas and commercial areas are allocated in green spaces, profit making out of these commercial sites become a current issue.

In some of the study areas entrance fee for cars is required as well as fees for partipating the activities like Mogan park and Altınpark. This fact contradicts with the idea of public space. In Altınpark inspite of the fact that there are many restaurant and cafes people generally complain about the lack of picnic areas where they can spend time without paying extra fees. Therefore it is really important to abide the idea of public welfare and to avoid the commercialization of the space by the

Table 6. Differences in satisfaction level of users in green areas.

Green areas		Mean value differences
A	**B**	**A-B[a]**
Altınpark	Gençlik	- 0.15
	Göksu	0.01
	Harikalar	0.14
	Mogan	-0.53*
Gençlik	Altınpark	0.15
	Göksu	0.17
	Harikalar	0.29
	Mogan	-0.37
Göksu	Altınpark	-0.01
	Göksu	-0.17
	Harikalar	0.12
	Mogan	-0.54*
Harikalar	Altınpark	-0.14
	Gençlik	-0.29
	Göksu	-0.12
	Mogan	-0.67**
Mogan	Altınpark	0.53*
	Gençlik	0.37
	Göksu	0.54*
	Harikalar	0.67**
F = 3,57 **		

*≤ 0.05; ** ≤ 0.01 [a]1(not satisfied), 5 (very satisfied)

Table 7. Evaluation of satisfaction factor in green areas.

Green area	Facility[a]	Management	Notification	Experience
Altinpark	3.36	3.48	3.92	3.31
Gençlik	3.02	3.01	3.64	3.16
Göksu	2.95	3.21	3.43	2.74
Harikalar	2.88	3.49	3.90	2.18
Mogan	2.26	2.20	2.61	1.96
F	4.32**	5.80***	5.76***	8.47***

** ≤ 0.01; *** ≤ 0.001   [a] 1 (very satisfied), 7 (not satisfied at all)

municipalities. Hereby green spaces can provide a gathering area for everyone. All the green areas studied have picnic areas which are appreciated by users providing them the continuation of the traditional picnicking and habit of barbeque. Mogan park has the largest picnic area among the study areas. The area is situated on the waterfront and provides a qualitative landscape. Recreation activities and user preferences are concentrated on waterfont areas. The good combination of waterfront landscape with the picnic activity makes Mogan park the most prefered green area in all areas. According to the research findings, among the criteria which form the management factor like accessibility to responsible park commissioners in green areas, attitute of the park keepers towards users and the existence of security wardens are found to be very effective on the satisfaction level. It is observed that there is an expectation for participatory management approach of which users can

express their comments and recommendations. In order to realize such a constructive approach different methods can be developed by establishing consulting units in green areas and collecting opionions and recommenda-tions by internet facilities. Maintaining the participation will increase the degree of sense of belonging in green areas which will enhace the satisfaction level of users. On the notification factor which affects the satisfaction level, users are more interested in the way how they receive notification than the subject of it. The simplicity of accessing information in today's world is one of the crucial services to mankind. Notification of users by the planned park programs for the year beforehand and dissemination of information at a maximum level by communication tools and internet turn out to be very essential. Examining the gap value related with experience it is observed that there is a need for desinging appropriate activities in green areas and deve-loping new ideas to sustain them. Municipalities should take actions for the maintenance of green areas and provide hygienic conditions and increase the control in these areas for health and satisfaction of users.

REFERENCES

Absher JD, Howat G, Crilley G, Milne I (1996). Toward customer service: Market segment differences for sports and leisure centres. Australian Leisure 7(1): 25-28.

Aşikkutlu SH (2008). Rekreasyonel motivasyon ve kısıtlayıcılar; Anakara Göksu Parkı ve Harikalar Diyarı Parki örneği. Düzce Üniversitesi, Fen Bilimleri Enstitüsü (in Turkish). p. 134.

Beler F (1993). The distributional impacts of urban public services: parks and recreational services in Ankara. Unpublished PhD Thesis, METU, Ankara.

Burns RC, Graefe AR, Absher JD (2003). Alternate Measurement Approaches to Recreational Customer Satisfaction: Satisfaction-Only Versus Gap Scores. J. Consum. Satisf. Dissatisf. Complain. Behav. 25(4): 363-380.

Burns RC, Graefe AR, Titre JP (1997) Costomer Satisfaction At US Army Corps of Engineers-Administered Lakes: A Compilation of Two Years of Performance Data. Proceedings of the 1997 Northeastern Recreation Research Symposium, USDA Forest Service, GTR, NE. 241: 12-13.

Cengiz T, Çalişkan E (2009). Ecological approach in sustainable tourism: Şavşat district example. Sci. Res. Essay 4(5): 509-520.

Crompton JL, Love LL (1995). The predictive validity of alternative approaches to evaluation quality of a festival. J. Travel Res. 34(1): 11-24.

Crompton JL, MacKay KJ (1989). Users' perceptions of the relative importance of service quality dimensions in selected public recreation programs. Leisure Sci. 11: 367-375.

Driver BL, Tocher SR (1970). Toward a behavioral Interpretation of Recreational Engagements, with Implications for Planning. In B.L. Driver (Ed.) Elements of Outdoor Recretion Planning. Ann Arbor, MI: University Microfilm, pp. 9-31.

Kaplan R, Kaplan S (1989). Experience of Nature –a psychological perspective, Cambridge University Press.

Lacobucci D, Ostrom A, Grayson K (1995). Distinguishing service quality and customer satisfaction: The voice of the consumer. J. Consum. Satisf. Dissatisf. Complain. Behav., 6: 24-26.

MacKay KJ, Crompton JL (1990). Measuring the quality of recreation services. J. Park Recreat. Adm., 8(3): 47-56.

Muderrisoglu H (2002). Mekanda kalabalık algısı ve kullanıcı memnuniyeti. İ.Ü. Orman Fakültesi Dergisi (in Turkish), B., 52(1): 125-131.

Muderrisoglu H, Aydın S, Ak K, Eroglu E (2006). Visitor satisfaction evaluated for Abant Nature Park, Turkey. J. Balkan Ecol., 9(1): 55-62

Muderrisoglu H, Aydın S, Demir Z (2009). Su kenarı rekreasyon aktivitelerinde kullanıcı memnuniyetinin belirlenmesi; Boşluk (GAP) analizi yöntemi. I. Ulusal Batı Karadeniz Ormancılık Kongresi, Bartın Orman Fakültesi Dergisi (in Turkish)., 1: 186-192.

Oğuz D (2000). User surveys of Ankara's urban parks, Landscape Urban Plann., 52: 165-171.

Oliver RL, DeSarbo WS (1988). Response determinants in satisfaction judgments. J. Consum. Res., 14: 495-507.

Parasuraman A, Zeithaml VA, Berry LL (1985). A conceptual model of service quality andits implications for further research. J. Mark., 49: 41-50.

Parasuraman A, Zeithaml VA, Berry LL (1988). SERVQUAL: A multiple-item scale formeasuring consumer perceptions of service quality. J. Retail., 64: 12-40.

Peterson RA, Wilson WR (1992) Measuring customer satisfaction: Fact or artifact. J. Acad. Mark. Sci., 20 (1): 61-71.

Stankey GH (1973). Visitor Perception of Wilderness Recreational Carrying Capacity. USDA For. Serv. INT-142. Ogden.

Thompson CW (1996). "Updating Olmsted", Landscape Design, pp. 26-31.

Tse DK, Wilton PC (1988). Models of consumer satisfaction formation: An extension. J. Mark. Res., 25: 204-212.

Uzun O, Yılmaz O (2009). Landscape Assessment and Development of Management Model for Duzce, Asarsuyu Watershed. Tarım Bilimleri Dergisi, 15(1): 79-87

Weiermair K, Fuchs M (1999). Measuring tourist judgement in service quality. Ann. Tourism Res., 26(4): 1004-1021.

Wright BA, Duray N, Goodale TL (1992). Assessing perceptions of recreation center service quality: An application of recent advancements in service quality research. J. Parks Recreation Adm., 10(3): 33-47.