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Determination and Evaluation of Recreation Potentials of Forest Resting Places According to the Gülez Method; Manisa-Demirci District Example

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Özet – Kentsel ve kırsal alanlarda bir planlama yapılmadan önce en uygun olan alan kullanım ölçütlerinin belirlenmiş olması gerekmektedir. Eğer bu ölçütler göz önünde bulundurulmaz ise amaca uygun olmayan kullanımlar oluşacak ve birçok sorunu beraberinde getirecektir. Bu bağlamda kırsal peyzajın içerisinde yer alan rekreasyon alanları da ekolojik, kültürel, sosyal ve ekonomik açıdan değerlendirilerek oluşturulmalıdır. Çünkü rekreasyon alanları açık-yeşil alan aktiviteleri gereksinimine olanak sağlayan alanların en başında gelmektedir. Rekreasyonel alanlar arazi kullanımında, doğal ve kültürel peyzaj varlıklarının değerlendirilmesi ve hizmete sunulmasında önemli bir araçtır. Eğer bu alanlar plansız ve amaçsız olarak oluşturulursa, doğanın tahribatına ve peyzaj özelliklerinin bilinçsiz kullanımına yol açacaktır.

Bu çalışmada, Manisa İli Demirci İlçesindeki Başalan, Güldürdek ve Sarıçayır orman içi dinlenme yerlerinin mevcut potansiyellerinin ve bu alanları kullanan ilçe halkının talep ve eğilimlerinin belirlenmesi amaçlanmaktadır. Belirleme aracı olarak Gülez yöntemi ve anket uygulaması kullanılmıştır. Başalan ve Sarıçayır'ın düşük, Güldürdek'in ise orta rekreasyon potansiyeline sahip olduğu tespit edilmiştir. Yapılan anket uygulaması ile rekreasyon alanlarında halkın talep ve eğilimleri belirlenmiştir. Elde edilen bu veriler ile Demirci'deki orman içi dinlenme yerlerinin rekreasyon potansiyellerinin artırılması için öneriler getirilmiştir.

Anahtar Kelimeler- *Kırsal Peyzaj, Orman İçi Dinlenme Yeri, Rekreasyon Alanı, Rekreasyon Potansiyeli, Peyzaj Planlama.*

Abstract – Before planning in urban and rural areas, it is necessary to determine the most suitable land use criteria. If these criteria are not kept in sight, inappropriate use will occur and many problems ascertain. In this context, the recreation areas within the rural landscape should be created by taking ecological, cultural, social and economic aspects into consideration since recreational areas are at the top of the fields that meet the need for open-green space activities. Recreational areas are an important tool for land use, for the evaluation and service of natural and cultural landscape assets. If these areas are unplanned and purposeless, they will lead to destruction of nature and unconscious use of landscape features.

In this study, it is aimed to determine the current potentials of the resting places of Başalan, Güldürdek and Sarıçayır in Manisa province Demirci District and the demand and tendencies of the district people using these areas. Gülez method and questionnaire survey are used as the determining tool. It has been determined that Başalan and Sarıçayır have low recreation potential and Güldürdek has medium recreation potential. With the questionnaire survey, the demands and tendencies of the people are determined for the recreation areas. With these data obtained, suggestions are done to increase the recreation potentials of the forest resting places in Demirci.

Keywords – *Rural Landscape, Forest Resting Place, Recreation Area, Recreational Potential, Landscape Planning.*

I. INTRODUCTION

Aran (1970) recreation; after boring, disciplined, monotonous work of everyday life, people are interested in a work that is loved, interested; It defines the renewed body as a preparation for a new and efficient working phase with the renewal and energy recovery. Bayraktar (1972), avoiding a definite definition of recreation, firstly, leisure, recreation, leisure and leisure activities such as recreation, the opportunity to see the concept of recreation by referring to the importance of elements of pleasure and education [1].

The pressure on business life in the cities, intensive environmental pollution and the rapid increase in the population have negative effects on people and people living in urban areas need more intensive recreation than people living in rural areas. In areas where urbanization or urbanization begins, the need for recreation in the forest is met by rural areas, rural areas and urban forests. While most of the urban areas have a little green space and a recreation area before they are exposed to adverse conditions, they lose these areas with unplanned construction and distorted

urbanization. Due to the lack of recreation areas within the city, people are directed to recreation areas in the vicinity of the forest. In order to prevent any misuse of users in the forest, the planning of the forests should be properly planned.

With the increasing importance of environmental phenomenon in recreation and tourism day by day, the traditional tourism concept of mass character is no longer important [2]. To prevent the negative impact of recreation and tourism on natural resources and cultural resources is only possible with sustainable tourism. Sustainable tourism does not cover the use or protection of natural data only in the narrow sense. Nature is not abstracted from social relations and is not considered only in physical scope. In order to be able to talk about the sustainability of tourism, both the natural and the social aspects of tourism must be handled in integrity [3].

In the study, Basalan, Güldürdek and Sarıçayır Forest Resting Areas in Demirci District of Manisa, which serve the settlement, were investigated in terms of recreation potentials and user preferences. In this direction, forest settlements in the vicinity of Demirci District were determined and information was collected about these places. The results obtained from the study and suggestions for better utilization and improvement of recreational facilities were presented.

II. Materials and Method

A. Materials

The working areas are the Başalan, Güldürdek and Sığırova forest resting areas located in the Demirci district of Manisa, Demirci is a district of Manisa. Demirci's distance to Manisa city center is 165 km. Başalan, Güldürdek and Sarıçayır forest resting places are located in Demirci district respectively; It is 10 km, 22 km and 25 km away. Güldürdek Demirci is 22 km away from Söğütçük Village. There are 2 concrete, 4 soil ponds, rural casino, playgrounds, benches, drinking water and toilets in the picnic area inside the larch forest [4]. There are fountains, picnic tables and toilets in the recreation area. There is also a building that is established with the purpose of restaurant but not active today. (Fig.1, fig.2, fig. 3 ve fig. 4).

Fig. 1 A view from the area of Başalan the forested recreation [5].

Fig. 2 A view from the area of Başalan the forested recreation [5].

Fig. 3 A view from the area of Başalan the forested recreation [5].

Fig. 4 A view from the area of Başalan the forested recreation [5].

Demirci is very rich in terms of forest assets that provide the protection of the natural balance. The forested area in the district constitutes 65.157 hectares and 52.9% of its surface area. There is a forest rest area in Demirci in three different places. Başalan, Güldürdek and Sığrova, which the local people benefit from as a picnic area, are the in-forest recreation areas which should receive enough share from domestic tourism with its natural landscape and richness, cold water resources and fresh air. The absence of public facilities in Başalan, Güldürdek and Sarıçayır is the most important factor in not mobilizing the existing potential [5]. The

recreation area within the forest is the most forested area among the recreation areas in Demirci. There is a children's playground in the area (Fig. 5, fig. 6 and fig. 7). The recreation area in Sarıçayır Forest is suitable for camping. Previously used for camping activities in Demirci (Fig. 8).

Fig. 5 A view from the area of Güldürdek the forested recreation [6].

Fig. 6 A view from the area of Güldürdek the forested recreation [7].

Fig. 7 A view from the area of Güldürdek the forested recreation [8].

Fig. 8 A view from the area of Güldürdek the forested recreation [9].

B. METHOD

Information about the recreation areas in the forest was given and definition of recreation was made. The recreation potentials of the forest recreation areas were determined by 'Gülez Method üle and the survey method was used to determine user preferences. In order to determine the relationships between the items in the iştir Gülez Method belirlenmiş formula, the analysis was made with SPSS 11.5, the current situation was determined and recommendations were made.

In our country, forest recreation areas have an important place in meeting the outdoor recreation needs. The method of recreation evaluations on the extent to which these fields have or may have potential is a method of GÜLEZ (1980).

B.1. Survey Study

The subjects to be surveyed were selected from people using the recreational areas in Demirci. Demirci was determined as 73 people using the formula [10] given below and in the 95% confidence interval taking into account the population of the district center. In order to give a healthier result, the questionnaire was applied to 100 people selected by simple random method.

$$n = \frac{Z^2 PNQ}{ND^2 + Z^2 PQ}$$

$$n = \frac{1.96^2 \times 41676 \times 0.95 \times 0.05}{41679 \times 0.05^2 + 1.96^2 \times 0.95 \times 0.05} = \frac{7604,86776}{104,372476} = 72,863$$

n = Sample Size

Z= Coefficient of Trust

P= The possibility of finding the mass we want to measure (taken as 95% in the study.)

Q =1-P

N= Main Mass Size (41679)

B.2. Method of Evaluation of Recreation Potential - Gülez Method

In our country, most of the methods used to determine the potential of recreation and forest rest areas are not in the sub-region scale, do not include the natural landscape features and do not reflect the current situation.

A basic knowledge of statistics is needed for some of the methods that give the recreation value of a field with formulas. In the methods which measure the actual natural landscape and geophysical characteristics of a region, generally the negative factors present do not participate in the evaluation or they are taken into consideration in a small proportion. Likewise, the weight and scores within the climate factor are more subjective. Moreover, few of these methods are prepared for forest recreation areas. For all these reasons, it has been emphasized that, in accordance with the conditions of our country, the necessity of a method that can

allow the easy determination of the outdoor recreation potential of a forest recreation area. The developed method provides a very practical calculation method to easily find recreation potentials in forest recreation areas and finds a simple mathematical formula as shown below. [11]:

P + 1 + U + RK + OSE = % RP

The meaning of the symbols entered into the formula with specific weights and the distribution of the maximum (maximum) points (or weights) that they can take is as follows [11]:

Table 1. Method for finding recreation potentials in forest recreation areas.

Symbol	Meaning	Maximum Point (item weight)
P	Landscape Value	35
I	Climate Value	25
U	Accessibility	20
RK	Recreative Convenience	20
OSE	Negative Factors	0 (-10)
%RP	**Recreation Potential %**	**100**

Since the total score will be the maximum of 100, the sum of the points that the items in the formula can take is the percentage of the outdoor recreation potential of an area.

In order to be easy to calculate the items in the method, a için Forest Recreation Potential Evaluation Form (ORPDF) was prepared, which also showed the most detailed scores for these recreation sites. A person who takes the form of this method which is the essence of the method has the opportunity to decide in a short time according to his observations. [11].

B.2.1 Parameters of the Method

"P " Landscape Value

The most important feature in the evaluation of the potential of recreation and forest recreation areas was determined as the landscape value. The highest score is determined by having a 35% weight point landscape value.

"I" Climate Value

After the landscape value, the most points in the method were the climate value. Climate factors have a great impact on the activities in the area. Therefore, in the method; It has the second highest score with a weight of 25%.

Elements of climate; Temperature, Precipitation, İnsolation and Windiness conditions have taken place in the climate value with specific weights according to their effects on recreation. In this case, climate rating is the most scoring [11]:

Table 2.

Climate Value=	Temperature	Precipitation	İnsolation	Windiness
25=	10	8	5	2

Climate value is given by the maximum 10 points on the formula affects the temperature value. In the summer months, the average of June, July and August is taken as the activities are performed more frequently. According to this formula, the best temperature value for recreation activities is 25 ° C and 10 points. 1 point for 16 ° C and 34 ° C and intermediate points for intermediate values are given. Rainfall, which is the second most important factor in the impact of climate on recreation activities, was considered to be evaluated with a maximum of 8 weight points. Considering the negative impact of rainfall on recreation, the highest score (8) is given to regions with a total rainfall of 50 mm or less in June, July and August, and then with decreasing rainfall, the scores are reduced. (Table 3).

For the realization of the activities in the recreation areas in the climate value, the insolation element was evaluated with 5 weight points. It was scored according to the cloudiness of the air and the ratio of it being open and covered. It is indicated by values between 0 and 10. The value indicated by 0 represents an open air, 10 is a closed air, while the intermediate values represent a cloudy weather. In this case, an open air is shown with 5 points, the increase in cloudiness, that is, decreases in the rate of insolation decreases.

Whether the wind is the last element of climate value or not, it can be a factor in recreation activities. For this reason, the average wind speed in the summer months is 1 point for the zones between 1-3 m / sec and 2 points for the places with average wind speed less than 1 m / sec.

"U" Accessibility

Accessibility of recreation areas is important in measuring the potential. It is proportional to being easily accessible by people. More people will benefit from an area with easy access. In addition, problems in transportation will cause doubts about the suitability of the area and will not be preferred in use. In the method, accessibility was given to the scoring by giving 20% weight. The details used in scoring are detailed in Table 2.

" RK" Recreative Convenience *(Recreational Equipment)*

In recreation areas and in the determination of the in-forest recreation potential, all the existing recreational facilities in the place have a positive effect on the increase of the recreation potential. The facilities owned by the site are important factors that affect positively the potential of tools and equipment, landscape value and water element for use. It is considered appropriate to take the recreation facilities with a weight of 20%.

"OSE" Negative Factors

In determining the recreation potential in the forest, there is a need to take into account the negative factors present in that place. The best case is undoubtedly that there is no negative effect, that one place has a negative score of zero. In addition, it is assumed that there may be negative factors that may have a maximum score of -10. The scores of negative factors are taken as minus (-) in the evaluation and are therefore subtracted from the total score (Table 3), [11].

Table 3. According to Gülez; inland recreation potential assessment form [11].

Elements in the formula	Item Properties	Max. Ratings	Explanation	Rating	Evaluation score
Landscape Value (P)	Size of Field	4	Greater than 10 ha 5-10 ha 1-5 ha 0.5-1 ha	4 point 3 point 2 point 1 point	
	Plant Cover	8	Woodland, thicket, meadow Lonely woodland and meadow Bushy, meadow, sparse tree Pasture, sparse woodland Alone thicket and meadow Bushy, sparse woodland Meadow, sparse thicket Alone meadow	7-8 point 6-7 point 5-6 point 4-5 point 3-4 point 3-4 point 2-3 point 1-3 point	
	Sea, Lake, Streams	8	Seashore Lakeside River bank Creeks	7-8 point 6-7 point 4-5 point 1-4 point	
	Superficial Condition	5	Flat area Light wavy Slightly inclined, ground flatness Less bumpy Moderately rough	5 point 4 point 3 point 2 point 1 point	
	Visual Quality	4	Panoramic views Beautiful views and vistas General visual aesthetic value of the area	3-4 point 2-3 point 1-3 point	
	Other Features	6	Ex. natural monument, waterfall, cave, historical and cultural values, wild animals, birds etc.	1-6 point	
Climate Value (İ)	Temperature	10	Average of the summer months °C 16-17-18-19-20-21-22-23-24-25 34-33-32-31-30-29-28-27-26-25	P. 1, 2, 3, 4,…10	
	Precipitation	8	Summer months totals mm -50-100-150-200-250-300-350-400	P. 8, 7, 6, 5,…,1	
	Insolation	5	Average cloudiness in summer months Cloudiness: 0-2,2-4, 4-6, 6-8, 8-9	P: 5 4 3 2 1	
Accessibility (U)	Windiness	2	Average wind speed in summer months Less than 1 m / sec 1 -3 m/sec	2 point 1 point	
	The Tourism Importance of the Region	4	Mediterranean, Aegean, Marmara shore tape Black Sea coastal band Important highway routes, priority areas in tourism	3-4 point 2-3 point 1-3 point	
	Being a City with a Population of at least 100.000	5	Distance to 20 km 50 ” " 100 ” " 200 " ”	4-5 point 3-4 point 2-3 point 1-2 point	
	Time reached (at least 5000 inhabitants)	4	Up to 1 hour on foot or Vehicle 0-1 / 2 hours " 1/2-1 hour " U- 2 hour " 2 – 3 hour	4 point 3 point 2 point 1 point	
	Transportation (except taxi and private car)	4	Walkable or findable vehice Transport at certain times to find	3-4 point 1-3 point	
	Other conveniences in transportation	3	For example, being a ropeway, reachable from the sea etc.	1-3 point	
	Picnic Facilities	4	Fixed picnic table, cooker etc.		

Recreative Convenience (RK)			(according to qualifications)	1-4 points	
	Water condition	3	Drinking and using water facilities (according to qualifications)	1-3 point	
	Overnight Facilities	2	Fixed overnight facilities Tent or no-go camping facilities	2 point 1 -2 point	
	WCs	2	According to qualifications	1 -2 point	
	Car park	2	According to qualifications	1 -2 point	
	Dirt Gasino, Sales Buffet	2	According to qualifications	1 -2 point	
	Guard and Officers	2	Permanent Caretaker On weekends "	2 point 1 point	
	Other Facilities	3	For example, beach, cabin and shower facilities, rental facilities, ball etc. play and sports areas, facilities etc. (according to qualifications)	1 -3 point	
	Air pollution	-3	According to the degree of pollution	-1 - (-3) point	
	Not Secured	-2	According to assurance status	-1 - (-2) point	
	Noise	-1	For sea, lakes and streams	-1	
	Other Negative Factors	-1	Inadequate maintenance in the area	-1	
	Noise	-1	Traffic, crowd etc. noise	-1	
	Other Negative Factors	-2	Ex. stone and gravel quarries, construction and factory remains etc.	-1 - (-2) point	
Overall Total Score or In-Forest Recreation Potential%:					

According to the Gülez method, the recreation potentials of the Başalan, Güldürdek and Sarıçayır forest areas located in the boundaries of Demirci District were determined (Table 5, Table 6 and Table 7). It was determined in the areas where the recreation potential will be determined by the people who will perform the field survey for the area value (p) and accessibility (u) and recreational convenience (rk) from the values specified in the formula. For climate values (i); General climate data were downloaded using the internetclim [12] internet address and necessary information and ratings were made. Scores were performed by evaluating the current situation. When the values that increase the potential in the future are improved, their potential score can be increased.

According to Gülez (1990); according to the results of this method, an evaluation method can be proposed [Table 4]:

Table 4. Point classification of in-forest recreation potential [11].

Forest Recreation Potential	Total Points %
1. Very low	(Less than 30%)
2. Low	(% 30 - % 45)
3. Medium	(% 46 - % 60)
4. High	(% 61 - % 75)
5. Very high	(More than 75%)

Table 5. Başalan, Determination of the recreation potential of the Forest Recreation Area according to the Gulez Method [11].

Elements in the formula	Item Properties	Max. Point	Description	Points	Değerl. Pointsı
Landscape Value (P)	Size of Field	4	Greater than 10 ha 5-10 ha 1-5 ha 0.5-1 ha	4 points 2 points 2 points 2 points	15 ha 4 points
	Plant Cover	8	Woodland, thicket, meadow Lonely woodland and meadow Bushy, meadow, sparse tree Pasture, sparse woodland Alone thicket and meadow Bushy, sparse woodland Meadow, sparse thicket Alone meadow	7-8 points 6-7 points 5-6 points 4-5 points 3-4 points 2-3 points 1-3 points	7 points
	Sea, Lakes, Rivers	8	Seashore Lakeside River bank Creeks	7-8 points 6-7 points 4-5 points 1-4 points	1 Point
	Superficial Status	5	Flat area Light wavy Slightly inclined, ground flatness Less bumpy Moderately rough	5 points 4 points 3 points 2 points 1 points	3 Points
	Visual Quality	4	Panoramic views Beautiful views and vistas General visual aesthetic value of the area	3-4 points 2-3 points 1-3 points	2 Points
	Other Properties	6	Ex. natural monument, waterfall, cave, historical and cultural values, wild animals, birds etc.	1-6 points	3 Points
Climate Value (İ)	Temperature	10	Average of the summer months °C 16-17-18-19-20-21-22-23-24-25 34-33-32-31-30-29-28-27-26-25	P. 1, 2, 3, 4,…10	5 Points
	Precipitation	8	Summer months totals mm -50-100-150-200-250-300-350-400	P. 8, 7, 6, 5,…,1	7 Points
	İnsolation	5	Average cloudiness in summer months Cloudiness: 0-2,2-4, 4-6, 6-8, 8-9	P: 5 4 3 2 1	3 Points
Accessibility (U)	Windiness	2	Average wind speed in summer months Less than 1 m / sec 1 -3 m/sec	 2 points 1 points	1 Point
	Currently In The Importance Of The Region's Tourist Attractions	4	Mediterranean, Aegean, Marmara shore tape Black Sea coastal band Important highway routes, priority areas in tourism	 3-4 points 2-3 points 1-3 points	1 Point
	Being a City with a Population of at least 100.000	5	Distance to 20 km 50 ” " 100 ” " 200 " ”	4-5 points 3-4 points 2-3 points 1-2 points	2 Points
	Time reached (at least 5000 inhabitants)	4	Up to 1 hour on foot or Vehicle 0-1 / 2 hours " 1/2-1 hour " U- 2 hour " 2 – 3 hour	 4 points 3 points 2 points 1 points	4 Points
	Transportation (except taxi and private car)	4	Walkable or findable vehice Transport at certain times to find	 3-4 points 1-3 points	3 Points
	Other conveniences in	3	For example, being a ropeway,		

	transportation		reachable from the sea etc.	1-3 points	1 Point
Recreative Convenience (RK)	Picnic Facilities	4	Fixed picnic table, cooker etc. (according to qualifications)	1-4 points	3 Points
	Water condition	3	Drinking and using water facilities (according to qualifications)	1-3 points	3 Points
	Overnight Facilities	2	Fixed overnight facilities Tent or no-go camping facilities	2 points 1 -2 points	1 Points
	WCs	2	According to qualifications	1 -2 points	1 Point
	Car park	2	According to qualifications	1 -2 points	1 Points
	Dirt Gasino, Sales Buffet	2	According to qualifications	1 -2 points	1 Point
	Guard and Officers	2	Permanent Caretaker On weekends "	2 points 1 points	1 Point
	Other Facilities	3	For example, beach, cabin and shower facilities, rental facilities, ball etc. play and sports areas, facilities etc. (according to qualifications)	1 -3 points	1 Point
	Air pollution	-3	According to the degree of pollution	-1 - (-3) points	-1 Point
	Not Secured	-2	According to assurance status	-1 - (-2) points	-2 Points
	Noise	-1	For sea, lakes and streams	-1	-1 Point
	Other Negative Factors	-1	Inadequate maintenance in the area	-1	-1 Point
	Noise	-1	Traffic, crowd etc. noise	-1	-1 Point
	Other Negative Factors	-2	Ex. stone and gravel quarries, construction and factory remains etc.	-1 - (-2) points	-1 Point
Overall Total Score or In-Forest Recreation Potential%: 52					

Table 6. Güldürdek, Determination of the recreation potential of the Forest Recreation Area according to the Gulez Method [11].

Elements in the formula	Item Properties	Max. Point	Description	Points	Değerl. Pointsı
Landscape Value (P)	Size of Field	4	Greater than 10 ha 5-10 ha 1-5 ha 0.5-1 ha	4 points 3 points 2 points 1 points	(8,8 ha) 3 Points
	Plant Cover	8	Woodland, thicket, meadow Lonely woodland and meadow Bushy, meadow, sparse tree Pasture, sparse woodland Alone thicket and meadow Bushy, sparse woodland Meadow, sparse thicket Alone meadow	7-8 points 6-7 points 5-6 points 4-5 points 3-4 points 3-4 points 2-3 points 1-3 points	8 Points
	Sea, Lakes, Rivers	8	Seashore Lakeside River bank Creeks	7-8 points 6-7 points 4-5 points 1-4 points	3 Points
	Superficial Status	5	Flat area Light wavy Slightly inclined, ground flatness Less bumpy Moderately rough	5 points 4 points 3 points 2 points 1 points	4 Points
	Visual Quality	4	Panoramic views Beautiful views and vistas General visual aesthetic value of the area	3-4 points 2-3 points 1-3 points	4 Points
	Other Properties	6	Ex. natural monument, waterfall, cave, historical and cultural values, wild animals, birds etc.	1-6 points	3 Points

Climate Value (İ)	Temperature	10	Average of the summer months °C 16-17-18-19-20-21-22-23-24-25 34-33-32-31-30-29-28-27-26-25	P. 1, 2, 3, 4…10	5 Points
	Precipitation	8	Summer months totals mm -50-100-150-200-250-300-350-400	P. 8, 7, 6, 5,..,1	7 Points
	İnsolation	5	Average cloudiness in summer months Cloudiness: 0-2,2-4, 4-6, 6-8, 8-9	P: 5 4 3 2 1	3 Points
Accessibility (U)	Windiness	2	Average wind speed in summer months Less than 1 m / sec 1 -3 m/sec	2 points 1 points	1 Point
	Currently In The Importance Of The Region's Tourist Attractions	4	Mediterranean, Aegean, Marmara shore tape Black Sea coastal band Important highway routes, priority areas in tourism	3-4 points 2-3 points 1-3 points	1 Point
	Being a City with a Population of at least 100.000	5	Distance to 20 km 50 ” " 100 ” " 200 " ”	4-5 points 3-4 points 2-3 points 1-2 points	2 Points
	Time reached (at least 5000 inhabitants)	4	Up to 1 hour on foot or Vehicle 0-1 / 2 hours " 1/2-1 hour " U- 2 hour " 2 – 3 hour	4 points 3 points 2 points 1 points	3 Points
	Transportation (except taxi and private car)	4	Walkable or findable vehice Transport at certain times to find	3-4 points 1-3 points	1 Point
	Other conveniences in transportation	3	For example, being a ropeway, reachable from the sea etc.	1-3 points	1 Point
Recreative Convenience (RK)	Picnic Facilities	4	Fixed picnic table, cooker etc. (according to qualifications)	1-4 points	4 Points
	Water condition	3	Drinking and using water facilities (according to qualifications)	1-3 points	3 Points
	Overnight Facilities	2	Fixed overnight facilities Tent or no-go camping facilities	2 points 1 -2 p.	1 Point
	WCs	2	According to qualifications	1 -2 points	2 Points
	Car park	2	According to qualifications	1 -2 points	1 Point
	Dirt Gasino, Sales Buffet	2	According to qualifications	1 -2 points	1 Point
	Guard and Officers	2	Permanent Caretaker On weekends "	2 points 1 points	1 Point
	Other Facilities	3	For example, beach, cabin and shower facilities, rental facilities, ball etc. play and sports areas, facilities etc. (according to qualifications)	1 -3 points	1 Point
	Air pollution	-3	According to the degree of pollution	-1 - (-3) points	-1 Point
	Not Secured	-2	According to assurance status	-1 - (-2) points	-2 Points
	Noise	-1	For sea, lakes and streams	-1	-1 Point
	Other Negative Factors	-1	Inadequate maintenance in the area	-1	-1 Point
	Noise	-1	Traffic, crowd etc. noise	-1	-1 Point
	Other Negative Factors	-2	Ex. stone and gravel quarries, construction and factory remains etc.	-1 - (-2) points	-1 Point
Overall Total Score or In-Forest Recreation Potential%: :				**54**	

Table 7. Sarıçayır,Determination of the recreation potential of the Forest Recreation Area according to the Gulez Method [11].

Elements in the formula	Item Properties	Max. Point	Description	Points	Değerl. Pointsı
Landscape Value (P)	Size of Field	4	Greater than 10 ha 5-10 ha 1-5 ha 0.5-1 ha	4 points 3 points 2 points 1 points	42975 m^2 4,3 ha 2 Points
	Plant Cover	8	Woodland, thicket, meadow Lonely woodland and meadow Bushy, meadow, sparse tree Pasture, sparse woodland Alone thicket and meadow Bushy, sparse woodland Meadow, sparse thicket Alone meadow	7-8 points 6-7 points 5-6 points 4-5 points 3-4 points 3-4 points 2-3 points 1-3 points	3 Points
	Sea, Lakes, Rivers	8	Seashore Lakeside River bank Creeks	7-8 points 6-7 points 4-5 points 1-4 points	1 Point
	Superficial Status	5	Flat area Light wavy Slightly inclined, ground flatness Less bumpy Moderately rough	5 points 4 points 3 points 2 points 1 points	4 Points
	Visual Quality	4	Panoramic views Beautiful views and vistas General visual aesthetic value of the area	3-4 points 2-3 points 1-3 points	2 Points
	Other Properties	6	Ex. natural monument, waterfall, cave, historical and cultural values, wild animals, birds etc.	1-6 points	1 Point
Climate Value (İ)	Temperature	10	Average of the summer months °C 16-17-18-19-20-21-22-23-24-25 34-33-32-31-30-29-28-27-26-25	P. 1, 2, 3, 4,..10	5 Points
	Precipitation	8	Summer months totals mm -50-100-150-200-250-300-350-400	P. 8, 7, 6, 5,…,1	7 Points
	İnsolation	5	Average cloudiness in summer months Cloudiness: 0-2,2-4, 4-6, 6-8, 8-9	P: 5 4 3 2 1	3 Points
	Windiness	2	Average wind speed in summer months Less than 1 m / sec 1 -3 m/sec	2 points 1 points	1 Point
	Currently In The Importance Of The Region's Tourist Attractions	4	Mediterranean, Aegean, Marmara shore tape Black Sea coastal band Important highway routes, priority areas in tourism	3-4 points 2-3 points 1-3 points	1 Point

Accessibility (U)	Being a City with a Population of at least 100.000	5	Distance to 20 km 50 ” " 100 ” " 200 " ”	4-5 points 3-4 points 2-3 points 1-2 points	2 Points
	Time reached (at least 5000 inhabitants)	4	Up to 1 hour on foot or Vehicle 0-1 / 2 hours " 1/2-1 hour " U- 2 hour " 2 – 3 hour	4 points 3 points 2 points 1 points	3 Points
	Transportation (except taxi and private car)	4	Walkable or findable vehice Transport at certain times to find	3-4 points 1-3 points	1 Point
	Other conveniences in transportation	3	For example, being a ropeway, reachable from the sea etc.	1-3 points	1 Point
Recreative Convenience (RK)	Picnic Facilities	4	Fixed picnic table, cooker etc. (according to qualifications)	1-4 points	2 Points
	Water condition	3	Drinking and using water facilities (according to qualifications)	1-3 points	2 Points
	Overnight Facilities	2	Fixed overnight facilities Tent or no-go camping facilities	2 points 1-2 points	1 Point
	WCs	2	According to qualifications	1 -2 points	1 Point
	Car park	2	According to qualifications	1 -2 points	1 Point
	Dirt Gasino, Sales Buffet	2	According to qualifications	1 -2 points	1 Point
	Guard and Officers	2	Permanent Caretaker On weekends "	2 points 1 points	1 Point
	Other Facilities	3	For example, beach, cabin and shower facilities, rental facilities, ball etc. play and sports areas, facilities etc. (according to qualifications)	1 -3 points	1 Point
	Air pollution	-3	According to the degree of pollution	-1 - (-3) points	-1 Point
	Not Secured	-2	According to assurance status	-1 - (-2) points	-2 Points
	Noise	-1	For sea, lakes and streams	-1	-1 Point
	Other Negative Factors	-1	Inadequate maintenance in the area	-1	-1 Point
	Noise	-1	Traffic, crowd etc. noise	-1	-1 Point
	Other Negative Factors	-2	Ex. stone and gravel quarries, construction and factory remains etc.	-1 - (-2) points	-1 Point
Overall Total Score or In-Forest Recreation Potential%: 40 Points					

III. Results

Recreation potential identification areas are located in Başalan, Güldürdek and Sarıçayır forest resting areas in Demirci district of Manisa. Beyond these areas, there is a forest resting area called ler Pirmehmet ve within the boundaries of Demirci District but it was excluded from the surveys and method because it was not known by the public. The method given in Table 5, Table 6 and Table 7 is given in the forest recreation areas available in the Demirci.

Table 7. Evaluation scores of recreation potentials according to the Gülez method of Forest Recreation Areas in Demirci (Orijinal 2019).

	Güldürdek Evaluation Points	**Başalan Evaluation Points**	**Sarıçayır Evaluation. Points**
Overall total points/ Recreation scores in the forest. %:	54 (medium)	52 (medium)	40 (medium)

Evaluation points are examined; In the classification given in Table 4, the rest areas in Güldürdek and Başalan forests are in the middle and the rest area in Sarıçayır forest has low potency.

In Demirci, 100 people answered the questionnaire. Of these, 56% are women and 44% are men (Figure 8).

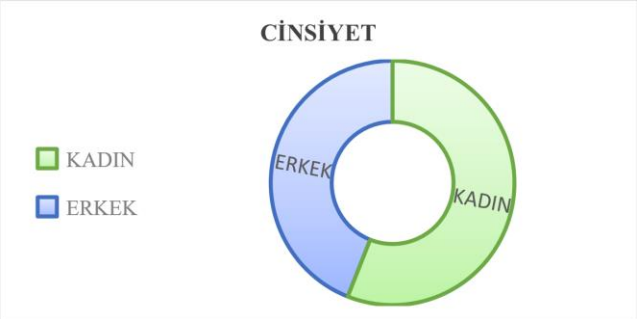

Fig. 8 Gender status of respondents in determining the user preferences of the Demirci forest recreation areas (Orijinal 2019).

Those who answer the survey questions; 42% in the age range of 15-20, 45% in the 21-30 age range, 2% in the 31-35 age range, 3% in the 36-45 age range and 8% in the age of 46 years and over (Figure 9).

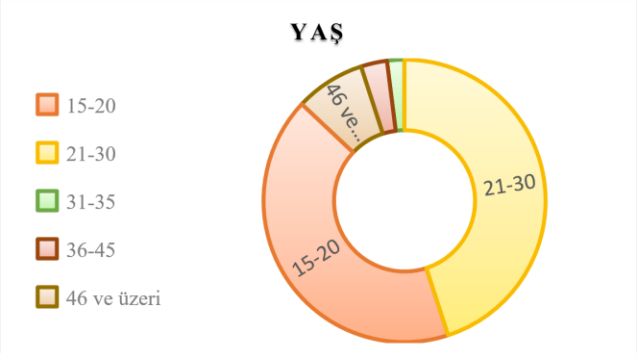

Fig. 9 The age of the respondents in determining the user preferences of the Demirci forest recreation areas (Orijinal 2019).

Educational conditions; 5% graduate, 79% undergraduate, 15% high school, 1% secondary school and 0% primary school graduate (Figure 10).

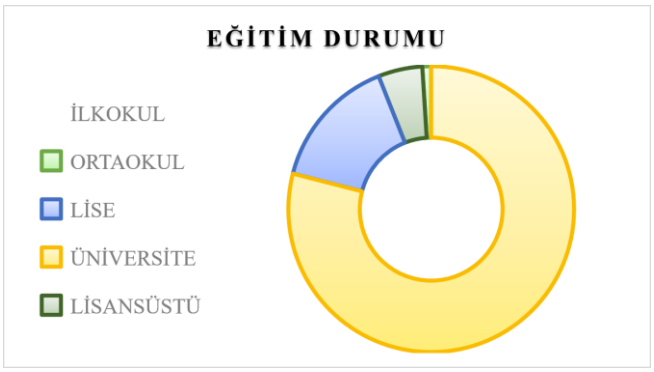

Fig. 10 Educational status of the respondents in determining the user preferences of the Demirci forest recreation areas (Orijinal 2019).

The distribution of the respondents according to their professions is 7% unemployed, 49% are civil servants, 31% are students, 4% are workers and 9% are free / private employees. (Figure 11).

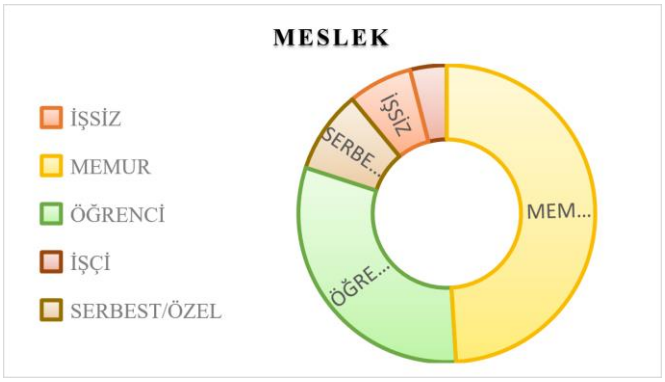

Fig. 11 Occupational status of the respondents in determining the user preferences of the Demirci forest recreation areas (Orijinal 2019).

When the respondents were asked about the importance of the recreational areas; 21% is very important, 69% is important and 10% is insignificant (Figure 12).

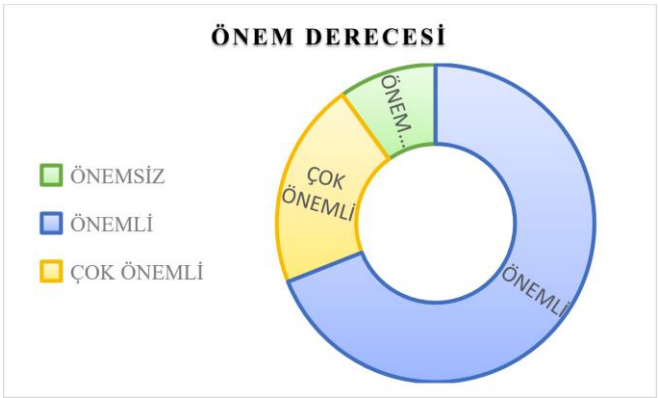

Fig. 12 The importance of recreation areas according to the survey participants in determining the user preferences of the in-forest recreational areas (Orijinal 2019).

In the recreation areas within the Demirci forest, the most common activity was a picnic. The picnic is followed by walking with a rate of 14%, resting with a rate of 12%, landscape with a rate of 8% and sports activities. There are other recreational activities in the area. The results of the survey are given in Figure 13 with other recreation actions and rates.

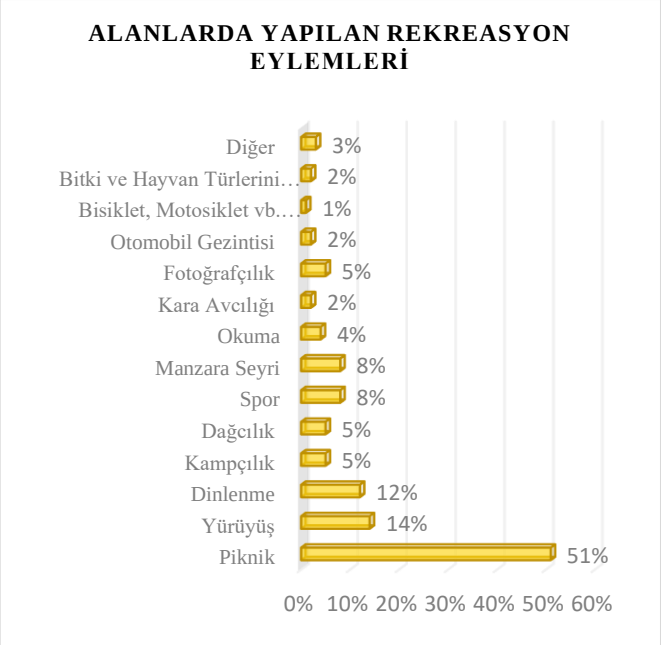

Fig. 13 Gender status of respondents in determining the user preferences of the Demirci forest recreation areas (Orijinal 2019).

When asked the participants to participate in the forest recreation areas; 42% have fun, 28% have friends, or spend time with family, 14% say they use areas for picnic, barbecue or urn activity and 9% relax. (Figure 14).

Fig. 14 Gender status of respondents in determining the user preferences of the Demirci forest recreation areas (Orijinal 2019).

When the respondents were asked about their reasons for not participating in forest recreation areas; 21% stated that they did not participate due to lack of facilities, 14% due to lack of facilities, 10% due to lack of activity and 8% because they did not find the area to be aesthetic. (Figure 15).

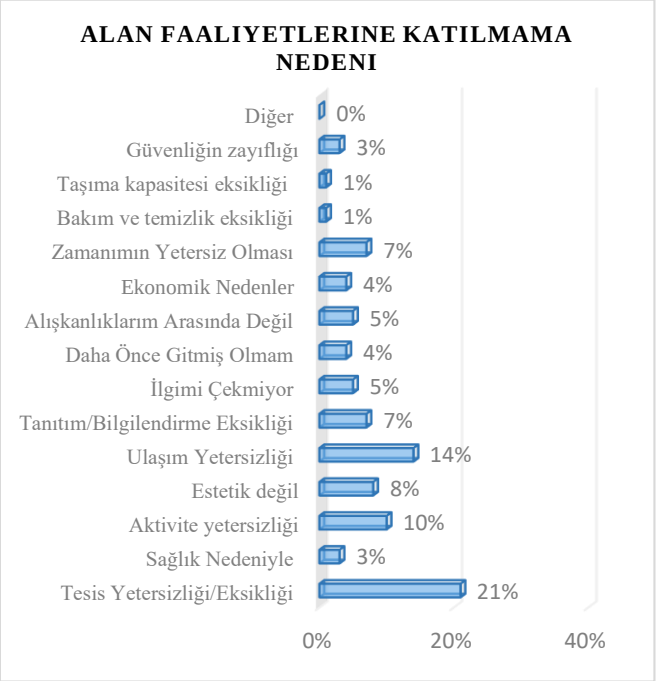

Fig. 15 Gender status of respondents in determining the user preferences of the Demirci forest recreation areas (Orijinal 2019).

Participants were asked about the desired uses in recreation areas to increase participation. 32% demand the increase of light green areas, 31% cafeteria and restaurant creation, 28% increase of picnic areas, 16% of the toilets to be built / improved and 15% of the walkways are planned. (Figure 16).

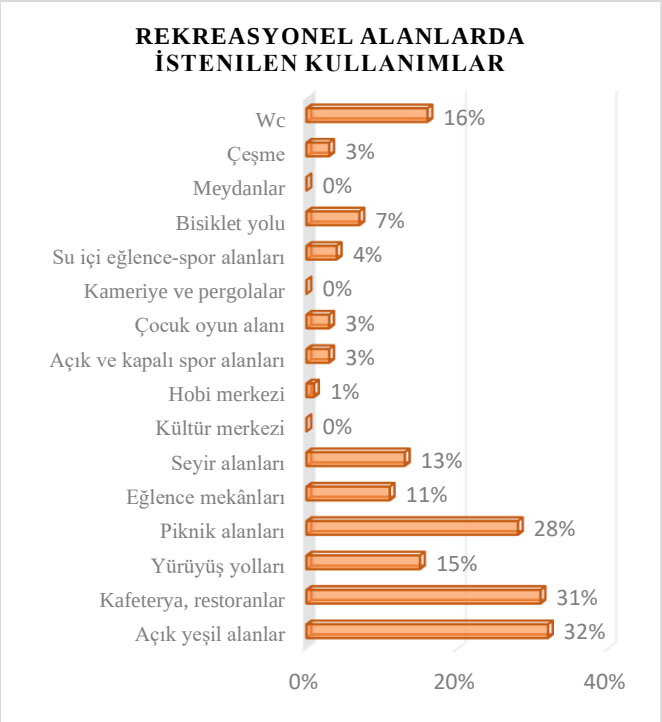

Fig. 16 Gender status of respondents in determining the user preferences of the Demirci forest recreation areas (Orijinal 2019).

One of the most important questions asked in the survey is; Among the forest recreation areas, which was the most preferred. The participants stated that they preferred the most forested recreation area. The recreation area in the forest is followed by the Güldürdek ormqn recreation area with 24%. Sarıçayır is used as the least preferred forest recreation area with 7%. (Figure 17).

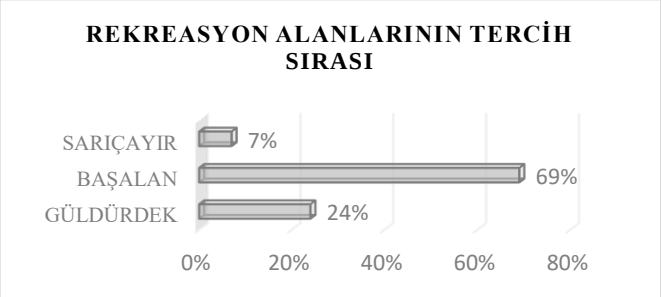

Fig. 17 Gender status of respondents in determining the user preferences of the Demirci forest recreation areas (Orijinal 2019).

IV. DISCUSSION

Demirci has a rich potential as the amount of green space. However, it is seen that the open-air recreation resources of the district are not sufficient in terms of quality and quantity and they cannot meet the recreational needs of the people. In order to ensure the continuity of resources, this supply-demand relationship needs to be balanced.

According to the results of the survey, although the number of existing facilities is inadequate, there are still recreational facilities provided by the public at the beginning of the reasons for choosing this area. However, the existing facilities such as picnic units (table, cooker, rubbish bin, fountain), car park, children's playgrounds, sanitary facilities (WC, shower, dishwashing place) are not sufficient to meet the needs. and they did not provide enough functions expected from them. Recreational activities should be diversified and increased.

Although the recreation area in the forest is not an official recreational area in the boundaries of the Demirci Orman İşletmeleri, it is the most preferred forest recreation area with a rate of 69%. Güldürdek and Sarıçayır forests are preferred due to the lack of transportation problems and facilities due to distance. The most prominent recreational area, the recreation area in the forest, should be officially given to the management of the Forest Enterprise, thus providing better service to recreation.

V. CONCLUSION

As a result, the potentials of the recreation areas in the Demirci district were evaluated according to the Gülez method. The survey was carried out by highlighting the recreation areas and determining the statistical ratios, and the demands and demands of the public were discussed. In line with these results, deficiencies in the areas and misleading practices were determined. It is seen that the most important problems of the recreation areas are due to lack of transportation, activity equipment and lack of facilities. As a result of the field surveys, all of them lacked planning. Since recreation areas have forest and area that can be preferred especially in summer months, transportation facilities and facility shortcomings need to be eliminated. Thus, the demand for recreation areas in the district, which suffers from the inadequacy of social activity, can be increased and circulations can be provided in the district with its natural assets.

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