

**Araştırma Makalesi**  
(Research Article)

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**University Students' Use of Campus Open and Green Spaces and  
Their Satisfaction**

Üniversite Öğrencilerinin Kampüs Açık ve Yeşil Alanlarını Kullanımları ve  
Memnuniyetleri

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**ABSTRACT**

**Purpose:** The purpose of this study was to determine the satisfaction level of students regarding their use of open-green spaces on the Niğde Ömer Halisdemir University campus and to ensure the active use of these spaces.

**Materials and Methods:** A questionnaire was administered to 680 people aged 18-24 who were randomly selected from different faculties in the campus. Percent values were used to determine the demographic and green space usage characteristics of the participants. In order to determine the satisfaction factors, and demographic characteristics and green space usage characteristics, frequency analysis was employed, whereas in order to reveal differences, Independent T-Test, One-Way ANOVA Analysis and Post Hoc Test were employed.

**Results:** There was a correlation between the participants' monthly income and their mothers' education status and their satisfaction levels. Participants, majority of whom had low monthly income, mostly preferred to be in nature, spend their free time in nature and be alone in doing so. Similarly, it was determined that the participants with low education level preferred to be alone in these areas. There was also a relationship between the physical structure and activities in green spaces they saw as necessary and their satisfaction levels. Also majority of the participants, who wanted sportive activities in the open and green spaces. It was determined that the participants did not spend much time in the open green spaces on campus but whenever they use these spaces, they spend time in groups to have fun with their friends, and they wanted to have sportive activities. In order to ensure that students at Niğde Ömer Halisdemir University Central Campus spend more time in these open and green spaces, these spaces should be made more attractive in terms of design by taking into account their demands. Thus, Life quality on campus for both campus employees and students will improve and users' academic life will be positively affected.

**ÖZ**

**Amaç:** Çalışmada, Niğde Ömer Halisdemir Üniversitesi Merkez Kampüsündeki öğrencilerin kampüs içi açık-yeşil alan kullanımlarına yönelik memnuniyet durumunun belirlenmesi ve bu alanların daha aktif kullanılmasının sağlanması amaçlanmıştır.

**Materyal ve Metot:** Kampüs içerisinde farklı fakültelerden tesadüfi olarak seçilen, öğrenci olarak eğitim gören, 18-24 yaşları arasındaki 680 kişiye anket uygulaması yapılmıştır. Katılımcıların demografik durumu ve yeşil alan kullanım özelliklerinin belirlenmesinde yüzde değerler kullanılmıştır. Yeşil alanlara ait memnuniyet faktörleri ile demografik özellikler ve yeşil alan kullanım özelliklerinin belirlenmesinde frekans analizi ve farklılıkları ortaya koymak için Bağımsız Örneklem T Testi, Tek Yönlü Anova Analizi ve Post Hoc Testi uygulanmıştır.

**Bulgular:** Katılımcıların aylık gelirleri ve anne eğitim durumları ile memnuniyet düzeyleri arasında bağlantılı bir ilişki bulunmuştur. Çoğunluğu aylık geliri düşük olan katılımcıların doğada olmayı, boş vakitlerini doğada geçirmeyi ve bunu yaparken yalnız olmayı tercih ettikleri tespit edilmiştir. Benzer şekilde anne eğitim durumu da düşük olan katılımcıların bu alanlarda yalnız kalmayı tercih ettikleri belirlenmiştir. Yeşil alanlarda olmasını gerekli gördükleri fiziksel yapı ve aktiviteler ile memnuniyet düzeyi arasında da ilişki olduğu belirlenmiştir. Ayrıca katılımcıların çoğu açık ve yeşil alanlarda sportif faaliyetlerin olmasını istemiştir.

**Sonuç:** Katılımcıların kampüs içerisindeki açık yeşil alanlarda fazla vakit geçirmediği ancak bu alanlarda arkadaşlarıyla eğlenmek için grup halinde buldukları ve sportif faaliyetlerin olmasını istedikleri tespit edilmiştir. Niğde Ömer Halisdemir Üniversitesi Merkez Kampüsündeki öğrencilerin açık ve yeşil alanlarda daha fazla vakit geçirmesini sağlamak için talepleri de dikkate alınarak, bu alanların tasarımsal açıdan daha cezbedici hale dönüştürülmesi gerektiği, böylece hem kampüs çalışanları hem de öğrenciler için kampüste yaşama kalitesinin artırılabilceği ve kullanıcıların akademik hayatlarına da katkı sağlanabileceği düşünülmektedir.

## INTRODUCTION

Excessive growth and population increase in cities caused an increase in concrete structures, and the damaged nature was faced with various environmental problems such as pollution and climate change (Bakhshi et al., 2015). For this reason, the quality of life in cities has started to decrease. Architectural structures, open and green spaces, and the relationship and integrity amongst these constitute the general character of a city (Gül and Küçük, 2001). Especially providing economic, ecological and social contribution to the region, open and green spaces play an important role in providing identity to cities. Just like a small city, university campuses are a part of the city's landscape. So, as part of the city's landscape, they change the city's skyline and life, and the places where university students spend their lives in at least four years (Yılmaz, 2015). Like cities, university campuses are places where functions such as work, housing, resting, recreation, and transportation take place and social communication is provided (Yıldız and Şener, 2006; Kalaycı Önaç et al., 2018). A campus should not only be a place where the basic needs of its residents are met, but also it should be a place where the memories are collected, meanings are created and individuals feel they belong (Broussard, 2009; Yalçın, 2012; Söğüt et al., 2016).

In today's environment, where environmental problems have been increasing, universities have a great responsibility develop environmental awareness both in the campus and in the city since they provide a practical and theoretical flow of knowledge in the attainment of these responsibilities. In addition, the individual and social development of students who participate in and organize social activities during their education are directly related to the social and cultural activity areas and their use in universities. In this respect, they are integrated brought to the society as individuals, and learn to establish right relationships with the environment (Erçevik and Önal, 2011). However, in addition to their duty to solve environmental problems and raise environmental awareness, universities put pressure on the environment just like many other institutions and organizations. Especially in developing universities, damage done to the environment can increase while trying to meet the increasing demands. At this point, it is very important that environmental sustainability be achieved. In addition, giving importance to open and green spaces on campus is also effective in the creation of conceptual and spatial constructs of campuses.

One of the fundamental spaces, open spaces represent the clearings and empty spaces outside the

structures and transportation areas, whereas green spaces are comprised of surface areas where the existing open spaces are filled with botanic materials. Also, green spaces refer to all open spaces covered by vegetation, which are suitable for human use, either directly or indirectly (Fratini and Marane, 2011). Green spaces have many social, psychological, environmental and economic benefits for people. It has many positive effects such as improving air quality, improving regional climate, protecting biodiversity, providing recreational activities and improving health (Önder and Polat, 2012; Tuzcuoğlu, 2013; Bakhshi et al. 2015).

Urban open and green areas are divided into two main categories according to their **usage status** and **functions and activities** (Önder and Polat, 2012). They are divided into three groups as general, semi private and special areas according to usage status. **General open and green areas** are areas where recreational activities are carried out such as urban and neighborhood parks, urban forest, graveyards, sports area. **Semi private open and green areas** are areas open to use under certain conditions such as factory gardens, school gardens and public institutions and organizations. **Special open and green areas** are areas that can be used by their owners such as community buildings. Urban open and green areas are divided into four according to their functions and activities. **Green areas at the housing level** constitute the smallest unit of green areas such as roof garden, single or multi storey residential garden. **Green areas at the level of neighborhood unit** can cover a maximum of 15 hectares. The green spaces at this level consist of children's gardens, sports and playgrounds and public housing gardens. **The green areas at the locality level** cover an area of 15 hectares with a population of at least 15.000 as much as the capacity of three neighborhood units such as school gardens, playgrounds, locality parks. **Green Areas at the urban level** have the size and function to serve the whole city population. It should have a population of 45 thousand, an area of at least 135 hectares and a capacity of at least 350 people per hectare such as urban parks, recreational areas, botanical gardens.

Addressing different audiences and within semi private open and green areas university campuses should have an aesthetic appearance and a common character since they include natural environmental characteristics, and interaction between human behavior and physical spaces, and since they are based on visual preference and visual sensation (Erçevik and Önal, 2011; Yılmaz, 2015). Well-designed campus open

spaces according to this will contribute to improving the life quality of individuals using the university, will decrease stress level as a result of communication with natural elements and will have positive physical and mental effects on individuals. Lau et al. (2014) stated that the beauty and peace of the open spaces on campus, natural sounds coming from the birds and water, flowers, sunlight and other natural elements can help cope with stress and improve health. Similarly, many studies put forth that interaction with nature is effective in increasing self-esteem and reducing stress level ([Cammack et al. 2002](#); [Waliczek et al. 2005](#); [Asamoah et al. 2017](#)). McFarland et al. (2008) found a relationship between the life quality of students who frequently use campus green areas and the frequency of use of space. Many experts argued that the amount and quality of green space affect life quality ([Cohen et al. 2007](#); [Wolch et al. 2014](#); [Mensah et al. 2016](#)). It is also known that individuals who have access to vegetation, water surfaces or forest areas are generally happier at home, work and in life ([Heerwagen, 1990](#); [White and Heerwagen, 1998](#)). Lau et al. (2009) emphasized that the natural areas on the university campus are physical spaces that have positive effects on the mental health of people. This affects both students' future and creates a positive environment for campus employees. Indeed, it has been reported that students' academic performances have been positively influenced by the physical environment of their university ([McFarland et al. 2010](#); [Speake et al. 2013](#); [Wentworth and Middleton, 2014](#); [Scholl and Gulwadi, 2015](#)).

William White accepted the number of people who use a specific space as the first criterion for the success of that space. Many professional designers and public space owners agree on this viewpoint. Therefore, there are numerous studies on user satisfaction and user trends. These studies aim to understand the reasons why the users use outdoor spaces and to develop successful places with more intensive use. Continuity of these studies is vital ([Erdogan et al. 2011](#); [Erdogan et al. 2016](#); [Olgun et al. 2016](#)).

One of the key institutions that are able to raise individuals with a certain attitude towards life, not just towards their professions, play an important role in social, political and economic changes and to reach sustainable developments in different scales and with all their dimensions are universities ([Lauder et al. 2015](#); [Özdal Oktay and Özyılmaz Küçükyağcı, 2015](#); [Çetinkale Demirkan, 2018](#)). Also in this study, the demographic characteristics of the students of Niğde Ömer Halisdemir University, which has been developing and

facing increased population and demand, their use of on-campus green spaces and the satisfaction factors were determined, and the effects of these variables were examined in order to support the sustainable planning and management of the green spaces on campus. In the light of the data obtained, various recommendations were provided for the open and green spaces on campus.

## MATERIAL and METHOD

The present study, a questionnaire study, was conducted with participants between the ages of 18 and 24 studying at Niğde Ömer Halisdemir University Central Campus to determine their use of open and green spaces on campus and their satisfaction with these spaces. According to the calculation made by Arcgis 10.1 program, 64.30% of the campus area of Niğde Ömer Halisdemir University consists of open and green spaces (Figure 1).

According to data from December 2017, the number of students studying on campus was 14222. While calculating the sample size for this study that would represent the universe, the sample size calculation formula appropriate for its specific situation was used ([Yazıcıoğlu and Erdoğan, 2004](#)). As stated in [Erdoğan and Yazıcı \(2004\)](#), the sample was 665 for a universe of 10.000-25.000 when  $\pm 0.03$  sampling error (d),  $p=0.8$  and  $q=0.2$  for  $\alpha=0.05$ . Based on this, the developed questionnaire was administered to a total of 680 students who were randomly selected from different faculties in the campus. The questionnaire consisted of three sections: demographics, on-campus green area usage and satisfaction factors about the on-campus green area usage. A questionnaire was prepared by drawing on the studies conducted by [Dawson et al \(1997\)](#), [Newman and Dawson \(1998\)](#), [Uzun \(2005\)](#), [Çetinkaya et al \(2015\)](#) and [Virtanen \(2017\)](#) in order to determine the satisfaction factors of the participants. The data obtained from the questionnaires were analyzed using the SPSS 24.0 package program. The distribution frequency of the participants' user characteristics was given in percentages (%). In addition, frequency analysis was used to determine the relationship between the satisfaction factors regarding green spaces, and the demographic characteristics and green space usage characteristics. In order to determine the differences amongst them, Independent T-Test, One-Way ANOVA Analysis and Post Hoc Test were employed. The data obtained as a result of the analyses are given in tables.

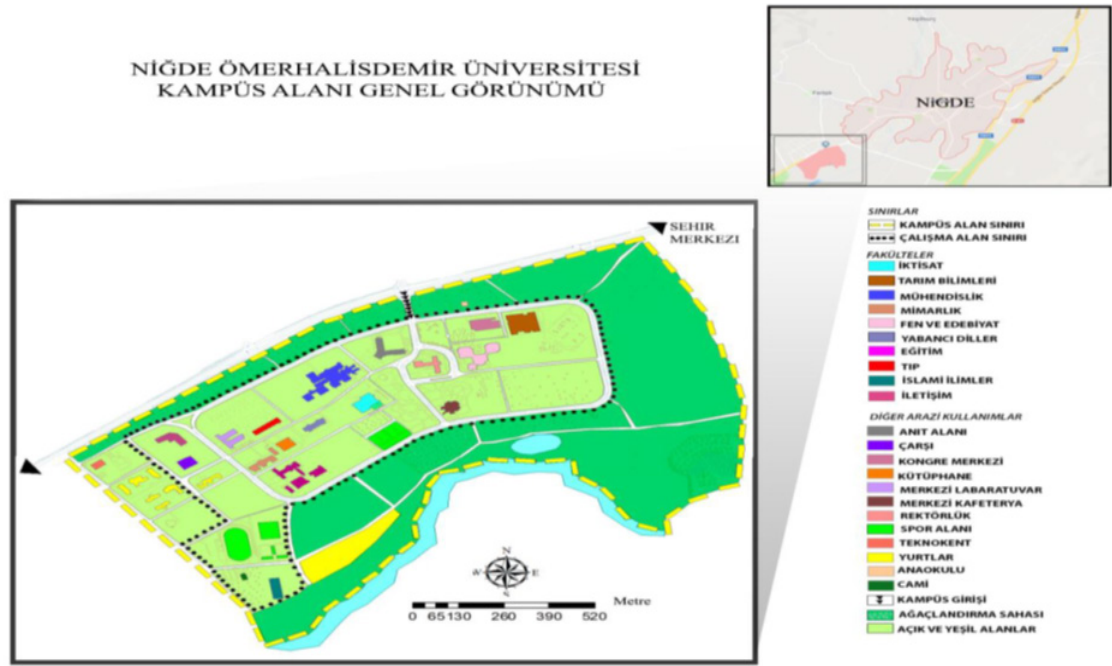


Figure 1. Study Area (Gökçek et al. 2019)

Şekil 1. Çalışma Alanı

## Findings

The 680 participants of the study were students from Niğde Ömer Halisdemir University's different faculties, which were randomly selected. 58.3 % of these 680 participants were female and 41.7% were male. When the settlement units where the participants lived the longest before coming to university were examined, the findings showed that most of the students lived in cities (60.9%) and that they had lived in this type settlement unit for 16 to 20 years (47.1%). The findings also revealed that the participants' housing type in their hometowns were mainly apartment buildings (47.4 %), most of their income level was less than 1000 TL (68.3%), and their current place of residence were public dormitories (61.0%). When the participants' parents' education levels were examined, the findings showed that they were mainly elementary school graduates (50.9 % - 40.1 %) (Table 1).

Most of the participants were not members of any student clubs (87.0%). They had been using public transportation on their way to the campus (64.6%). They generally preferred indoor venues such as cafes and dormitories to spend their free time (83.8%) (Table 2).

In the present study, four criteria were evaluated to determine students' use of open and green spaces on campus. Accordingly, it was determined that they spend less than an hour in open and green spaces on campus (60.9%), they were mainly in groups of three-five (66.0%), they preferred these spaces to have fun with their friends (45.6%), and they wanted to have walks in these spaces (29.5%) (Table 3).

Different statistical analyses were used in order to evaluate whether there was any relationship between the satisfaction criteria and participants' certain characteristics.

According to the T-test performed to determine the relationship between the sex of the green area users on campus and their satisfaction levels, there was no statistically significant difference. Satisfaction did not change according to sex (Table 4).

According to the ANOVA test conducted to determine the relationship between the participants' settlement unit, duration they had lived in this settlement unit and the type of housing they lived in, there was no statistically significant difference. Participants' settlement unit, duration they had lived in this settlement unit and the type of housing they lived in did not affect their satisfaction with green spaces (Table 5).

**Table 1.** Participants' demographic and various characteristics  
**Çizelge 1.** Katılımcıların demografik ve çeşitli özellikleri

	n	%		n	%
<b>Sex</b>			<b>Mother's Education Level</b>		
Female	407	58.3	Illiterate	82	11.7
Male	291	41.7	Elementary School Graduate	355	50.9
<b>Settlement Unit They Have Lived Before</b>			Middle School Graduate	109	15.6
Village	79	11.3	High School Graduate	122	17.5
Town	31	4.4	University or above	30	4.3
District	163	23.4	<b>Father's Education Level</b>		
City	214	30.7	Illiterate	23	3.3
Metropolis	211	30.2	Elementary School Graduate	280	40.1
<b>Their Living Duration in Their previous Settlement Unit</b>			Middle School Graduate	146	20.9
0-5 years	35	5.0	High School Graduate	157	22.5
6-10 years	58	8.3	University or above	92	13.2
11-15 years	94	13.5	<b>Place of Residence</b>		
16-20 years	329	47.1	With Family	105	15.0
20+	182	26.1	Public Dormitory	426	61.0
<b>Housing Type They Previously Lived in</b>			Private Dormitory	37	5.3
Apartment	331	47.4	House	126	18.1
House	280	40.1	Guest House	4	0.6
Mass Housing/Complex	64	9.2			
Shanty house	23	3.3			
<b>Monthly Income</b>					
Less Than 1000 TL	477	68.3			
1001-1500	119	17.0			
1501-2000	39	5.6			
2001-2500	22	3.2			
2500+	41	5.9			

**Table 2.** Participants' Personal Preferences and Various Characteristics  
**Çizelge 2.** Katılımcıların kişisel tercih ve çeşitli özellikleri

	n	%
<b>Membership to student Clubs</b>		
Yes	91	13.0
No	607	87.0
<b>Transportation Type On Their Way to Campus</b>		
Public Transportation	451	64.6
Bicycle	29	4.2
Walking	191	27.4
Private transportation/Personal Vehicle	27	3.9
<b>Venues Preferred to Spend Free Time</b>		
Indoor Venues Like Cafes and Dormitories	585	83.8
Around the Pond and the Lake	25	3.6
Picnic and Park Spaces	5	0.7
City parks, Landscaped Spaces	32	4.6
Other	51	7.3

**Table 3.** Participants' use of open and green spaces on campus

**Çizelge 3.** Kullanıcıların kampüs içerisindeki açık ve yeşil alan kullanımları

	n	%
<b>Duration Spent in Open and Green Spaces</b>		
Less Than 1 hour	425	60.9
1-3 hours	216	30.9
3-5 hours	51	7.3
5+	6	0.9
<b>Group Size in Open and Green Spaces</b>		
Alone	51	7.3
2 people	133	19.1
3-5 people	461	66.0
6-10 people	46	6.6
10+ people	7	1.0
<b>Activities Like to be Done in Open and Green Spaces</b>		
Having fun with friends	318	45.6
Studying	33	4.7
Having picnic	33	4.7
Taking a walk	251	36.0
Getting free from routines	63	9.0

	n	%
<b>Physical Structure and Activities Participants Require in Campus Green Spaces</b>		
Sports Activities	206	29.5
Ice Skating Rink	25	3.6
Music	102	14.6
Botanic Garden	115	16.5
Cultural Activity Spaces for Shows, Exhibits, etc.	103	14.8
Special Interest and Sale Booths	21	3.0
Zoo	9	1.3
Cafe, Buffet, Tea House, Restaurant	115	16.5
Water show, pool	2	0.3

**Table 4.** Relationship between sex and satisfaction levels from open and green spaces

**Çizelge 4.** Cinsiyet ile kampüs içerisindeki açık ve yeşil alanlardan memnuniyet düzeyleri arasındaki ilişki

Factor	t	p
Being in Nature	-0.219	0.827
Exploring Yourself	0.653	0.514
Socialization	-0.411	0.681

\*p<0.05, \*\*p<0.001

**Table 5.** Relationship between criteria regarding settlement and satisfaction levels from open and green spaces

**Çizelge 5.** Yerleşime ait kriterler ile kampüs içerisindeki açık ve yeşil alanlardan memnuniyet düzeyleri arasındaki ilişki

Factor	Settlement Unit		Duration Lived in the Settlement Unit		Type of Housing	
	F	p	F	p	F	p
Being in Nature	0.096	0.984	1.162	0.326	1.019	0.384
Exploring Yourself	1.084	0.363	0.897	0.465	1.604	0.187
Socialization	0.582	0.676	0.680	0.606	0.380	0.768

\*p<0.05, \*\*p<0.001

When the participants' satisfaction with the green spaces on campus was examined according to their monthly income including the scholarships they received and their parents' education status, there was a statistically significant difference at the  $p < 0.001$  significance level between their monthly income and being in nature and exploring Yourself, and a statistically significant difference at the  $p < 0.05$  significance level between mothers' education level and the self-discovery (Table 6).

According to the result of the post hoc test employed to determine from which sub-criterion this difference resulted from, there was a significant relationship between monthly income and "Providing

opportunity think and problem-solve" sub-criterion of Being in Nature at the  $p < 0.001$  significance level, and between monthly income and "Causing to think about life", "Activating the creativity skill", "Making you feel like as if you are the first person to discover the place", "Developing self-confidence" sub-criteria of Being in Nature at the  $p < 0.05$  significance level. Furthermore, while there was a significant relationship between monthly income and "Providing opportunity to spend free time in a natural environment" and "Developing a sense of self-sufficiency" sub-criteria of Exploring Yourself at the  $p < 0.05$  significance level, there was also a significant relationship between monthly income and "To be away from people" sub-criterion of Socialization at the  $p < 0.05$  significance level (Table 7).

**Table 6.** Relationship between participants' certain demographic characteristics and satisfaction levels from open and green spaces  
**Çizelge 6.** Katılımcıların demografik bazı özellikleri ile kampüs içerisindeki açık yeşil alanlardan memnuniyet düzeyleri arasındaki ilişki

Factor	Monthly Income		Mother's Education Status		Father's Education Status	
	F	p	F	p	F	p
Being in Nature	3.300	<b>0.011*</b>	1.782	0.131	1.472	0.209
Exploring Yourself	2.180	<b>0.070*</b>	3.483	<b>0.008**</b>	1.956	0.100
Socialization	0.867	0.483	1.343	0.252	0.976	0.420

\* $p < 0.05$ , \*\* $p < 0.001$

**Table 7.** Relationship between monthly income and satisfaction levels from open and green spaces

**Çizelge 7.** Aylık gelir ile kampüs içerisindeki açık ve yeşil alanlardan memnuniyet düzeyleri arasındaki ilişki

Factor	Monthly Income	
	F	p
Being in Nature	Causing to think about life	3.099 <b>0.015*</b>
	Providing opportunity think and problem-solve	4.368 <b>0.002**</b>
	Activating the creativity skill	3.113 <b>0.015*</b>
	Making you feel like as if you are the first person to discover the place	2.697 <b>0.030*</b>
	Developing self-confidence	2.485 <b>0.042*</b>
Providing freedom	1.055 0.378	
Exploring Yourself	Providing opportunity to spend free time in a natural environment	2.481 <b>0.043*</b>
	Taking me back to old days	1.123 0.344
	Connecting me to the nature	1.110 0.351
	Letting me to be by myself	0.810 0.519
	Developing a sense of self-sufficiency	3.360 <b>0.010*</b>
Socialization	To be in a fun environment with small groups	1.917 0.106
	To meet new people	0.361 0.836
	To see different type of people	1.259 0.285
	To be away from people	2.641 <b>0.033*</b>

\* $p < 0.05$ , \*\* $p < 0.001$

When the educational status of the participants' mothers and the sub-criteria of the satisfaction factors were examined, there was a significant relationship between mothers' education status and "Causing to think about life" sub-criterion of Being in Nature and "Connecting me to the nature", "Letting me to be by myself" and "Developing a sense of self-sufficiency" sub-criteria of Exploring Yourself at the  $p < 0.05$  significance level. It was determined that mothers' education status had an effect on satisfaction (Table 8).

When the students' place of residence, their membership to student clubs, the type of transportation they use on their way to the campus, venues they prefer on their free times, and the satisfaction criteria from the open and green spaces were examined, there was no significant difference between the participants'

preferences and their satisfaction with open and green spaces (Table 9).

When the relationship between the time participants spent on campus green spaces, the size of the group in which they are in, the activities they prefer, the criteria they consider necessary on campus green spaces and the satisfaction with open and green spaces was examined, it was revealed there was a statistically significant difference between the time participants spent in the campus green spaces and Socialization at the  $p < 0.001$  significance level. It was also determined that there was a statistically significant difference between the physical structure and activities participants considered necessary in campus green spaces and Exploring Yourself at the  $p < 0.05$  significance level (Table 10).

**Table 8.** Relationship between mothers' education status and satisfaction levels from open and green spaces  
**Çizelge 8.** Anne eğitim durumu ile kampüs içerisindeki açık ve yeşil alanlardan memnuniyet düzeyleri arasındaki ilişki

	Factor	Mother's Education Status	
		F	p
Being in Nature	Causing to think about life	3.099	<b>0.015*</b>
	Providing opportunity think and problem-solve	4.368	<b>0.002**</b>
	Activating the creativity skill	3.113	<b>0.015*</b>
	Making you feel like as if you are the first person to discover the place	2.697	<b>0.030*</b>
	Developing self-confidence	2.485	<b>0.042*</b>
	Providing freedom	1.055	0.378
Exploring Yourself	Providing opportunity to spend free time in a natural environment	2.481	<b>0.043*</b>
	Taking me back to old days	1.123	0.344
	Connecting me to the nature	1.110	0.351
	Letting me to be by myself	0.810	0.519
	Developing a sense of self-sufficiency	3.360	<b>0.010*</b>
Socialization	To be in a fun environment with small groups	1.917	0.106
	To meet new people	0.361	0.836
	To see different type of people	1.259	0.285
	To be away from people	2.641	<b>0.033*</b>

\* $p < 0.05$ , \*\* $p < 0.001$



**Table 9.** The relationship between participants' preferences and satisfaction levels of open and green spaces on campus  
**Çizelge 9.** Katılımcıların tercihleri ile kampüs içerisindeki açık ve yeşil alanlardan memnuniyet düzeyleri arasındaki ilişki

Factor	Place of Residence		Membership to Student Clubs		Transportation Type on the Way to the Campus		Venues Preferred During Free Times	
	F	p	F	p	F	p	F	p
Being in Nature	0.417	0.796	0.316	0.574	1.613	0.185	1.284	0.275
Exploring Yourself	0.953	0.433	1.832	0.176	1.780	0.150	0.334	0.855
Socialization	0.743	0.563	0.534	0.465	1.598	0.189	0.606	0.658

\*p<0.05, \*\*p<0.001

**Table 10.** The relationship between the use green spaces in the campus and open and green area satisfaction criteria  
**Çizelge 10.** Kampüs içerisinde yeşil alan kullanımıyla açık ve yeşil alan memnuniyet kriterleri arasındaki ilişki

Factor	Time Spent in Campus Green Spaces		Group Size in Campus Green Spaces		Activity Preferred in Campus Green Spaces		Physical Structure and Activities Considered Necessary in Campus Green Spaces	
	F	p	F	p	F	p	F	p
Being in Nature	0.343	0.794	0.560	0.692	1.380	0.239	1.896	0.058
Exploring Yourself	1.636	0.180	0.899	0.464	0.826	0.509	2.157	<b>0.029*</b>
Socialization	4.410	<b>0.004**</b>	1.295	0.271	1.334	0.256	0.938	0.484

\*p<0.05, \*\*p<0.001

The findings revealed that there was a statistically significant difference between the time participants spent in campus green spaces and "To be in a fun environment with small groups" sub-criterion of Socialization at the p<0.001 significance level. There was also a statistically significant difference between the time participants spent in campus green spaces and "To meet new people" and "To be away from people" sub-criteria of Socialization at the p<0.05 significance level (Table 11).

The findings determined that there was a statistically significant difference between physical structure and activities participants considered necessary to be in campus green spaces and "Causing to think about life" and "Providing opportunity think and problem-solve" sub-criteria of Being in Nature and between physical structure and activities participants considered necessary to be in campus green spaces and "Connecting me to the nature" sub-criterion of Exploring Yourself at the p<0.05 significance level (Table 12).

In terms of Being in Nature, participants stated that open and green spaces caused them to think about life

(58.7%), contributed them to think and solve problems (58.8%) and played a role in activating their creativity skills (54.2%). They also stated that open and green spaces did not make them feel like they were the first people to discover a place and did not raised their interest (52.3%) but they provided freedom to them (59.4). In terms of Exploring Yourself, the participants mentioned that open and green spaces on campus provided opportunity to them to spend their free time in a natural environment (67.5%), took them back to old days (55.3%), connected them to the nature (59.4%), letting them be by themselves (63.5%) and helped them develop a sense of self-sufficiency (59.8%). In terms of socialization, participants also expressed that open and green spaces on campus provided them the opportunity to be in a fun environment with small groups (62.3%), to meet new people (59.9%), to see different type of people (64.1%); and to be away from people (61.3%) (Table 13).

In the present study, in order to determine student satisfaction with the green spaces v campus, the effectiveness levels of 15 criteria were evaluated under the main headings of being in nature, exploring yourself and socialization.

**Table 11.** The relationship between time spent in campus green spaces and the satisfaction levels of open and green spaces on campus  
**Çizelge 11.** Kampüs yeşil alanlarında geçirilen süre kampüs içerisindeki açık ve yeşil alanlardan memnuniyet düzeyleri arasındaki ilişki

	Factor	Time Spent in Campus Green Spaces	
		F	p
Being in Nature	Causing to think about life	0.509	0.676
	Providing opportunity think and problem-solve	0.801	0.493
	Activating the creativity skill	0.318	0.812
	Making you feel like as if you are the first person to discover the place	0.257	0.856
	Developing self-confidence	0.331	0.803
	Providing freedom	0.856	0.464
Exploring Yourself	Providing opportunity to spend free time in a natural environment	2.523	0.057
	Taking me back to old days	1.365	0.252
	Connecting me to the nature	0.701	0.552
	Letting me to be by myself	0.788	0.501
	Developing a sense of self-sufficiency	1.890	0.130
Socialization	To be in a fun environment with small groups	4.049	<b>0.007**</b>
	To meet new people	1.394	0.243
	To see different type of people	2.851	<b>0.037*</b>
	To be away from people	3.525	<b>0.015*</b>

\*p<0.05, \*\*p<0.001

**Table 12.** The relationship between physical structure and activities participants considered necessary to be in campus green spaces and the satisfaction levels of open and green spaces in campus

**Çizelge 12.** Kampüs yeşil alanlarında olmasını gerekli gördükleri fiziksel yapı ve aktiviteler ile kampüs içerisindeki açık yeşil alanlardan memnuniyet düzeyleri arasındaki ilişki

	Factor	Physical Structure and Activities Participants Considered Necessary to Be in Campus Green Spaces	
		F	p
Being in Nature	Causing to think about life	2.514	<b>0.011*</b>
	Providing opportunity think and problem-solve	2.025	<b>0.041*</b>
	Activating the creativity skill	1.406	0.190
	Making you feel like as if you are the first person to discover the place	0.858	0.551
	Developing self-confidence	1.628	0.113
	Providing freedom	1.534	0.142
Exploring Yourself	Providing opportunity to spend free time in a natural environment	1.844	0.066
	Taking me back to old days	1.535	0.141
	Connecting me to the nature	2.189	<b>0.026*</b>
	Letting me to be by myself	1.941	0.051
	Developing a sense of self-sufficiency	1.506	0.152
Socialization	To be in a fun environment with small groups	1.376	0.204
	To meet new people	0.801	0.602
	To see different type of people	0.542	0.825
	To be away from people	1.308	0.236

\*p<0.05, \*\*p<0.001

**Table 13.** Effectiveness levels of satisfaction with campus open and green spaces  
**Çizelge 13.** Kampüs açık ve yeşil alanlarından memnuniyetin etkinlik düzeyleri

		Effective		Less Effective		Effective		Quite Effective		Strongly Effective	
		n	%	n	%	n	%	n	%	n	%
Being in Nature	Causing to think about life	135	19.3	153	21.9	220	31.5	84	12.0	106	15.2
	Providing opportunity think and problem-solve	110	15.8	178	25.5	210	30.1	120	17.2	80	11.5
	Activating the creativity skill	164	23.5	155	22.2	216	30.9	93	13.3	70	10.0
	Making you feel like as if you are the first person to discover the place	198	28.4	167	23.9	181	25.9	83	11.9	69	9.9
	Developing self-confidence	147	21.1	165	23.6	199	28.5	113	16.2	74	10.6
	Providing freedom	133	19.1	151	21.6	208	29.8	117	16.8	89	12.8
Exploring Yourself	Providing opportunity to spend free time in a natural environment	102	14.6	125	17.9	224	32.1	130	18.6	117	16.8
	Taking me back to old days	178	25.5	134	19.2	165	23.6	113	16.2	108	15.5
	Connecting me to the nature	137	19.6	146	20.9	199	28.5	105	15.0	111	15.9
	Letting me to be by myself	125	17.9	130	18.6	201	28.8	111	15.9	131	18.8
	Developing a sense of self-sufficiency	134	19.2	146	20.9	201	28.8	105	15.0	112	16.0
Socialization	To be in a fun environment with small groups	121	17.3	142	20.3	202	28.9	118	16.9	115	16.5
	To meet new people	126	18.1	154	22.1	189	27.1	127	18.2	102	14.6
	To see different type of people	116	16.6	135	19.3	191	27.4	145	20.8	111	15.9
	To be away from people	127	18.2	143	20.5	188	26.9	116	16.6	124	17.8

## RESULT and DISCUSSION

When the personal preferences and demographic characteristics of these individuals were examined, it was determined that most of them were not members of any student clubs, used public transportation on their way to campus and spent their free time in indoor places. In line with this, it is believed that the time these individuals spent indoors should be shortened enriching the open and green spaces on campus with social, cultural and sportive activities that will enable them to use these spaces more effectively. Factors such as social, cultural and economic characteristics that change according to countries and regions, life styles, climate characteristics, the location of the university within the city, campus systems and academic systems of the universities can create differences in the use of social and cultural activities in universities. In this context, it will be beneficial to reevaluate the use of social and cultural activity spaces in universities during the design processes of universities in different countries and regions (Erçevik & Önal, 2011).

For young people, the open and green spaces on

campus means spaces for them to study on grass or under the shade of a tree, to rest and socialize (Yılmaz, 2015). Also, green spaces are physical, mental, emotional and social spaces for the healthy development of individuals during their adolescent years (Dunnett et al., 2002). The present study revealed that students preferred to use these spaces to socialize. This result is similar with the results of the aforementioned studies. These spaces will help students who mostly stay in dormitories on campus to realize their ecological education and will protect biodiversity by establishing relations between students and plants and animals, which are increasingly disappearing in cities (Bowler et al., 2010; Önder & Polat, 2012). It was determined that academic achievement of students who realized group interaction in green spaces on campus increased (Sherer, 2006; Speake et al., 2013; McFarland et al., 2007; McFarland et al., 2010), mental activities of the individuals performing activities such as walking and jogging in green spaces on campuses were better (Bowler et al., 2010; Schipperijn et al., 2013; Cole et al., 2018), and there was a positive relationship between physical activity done in green spaces and health (Wong, 2009; Tilt, 2010; Akpınar, 2016).

In the study, satisfaction factors of open and green spaces on campus were grouped under 15 sub-factors under the three main factors. In terms of being factors determining satisfaction, these factors show similarities with factors found in Çetinkaya et al. (2015), Uzun and Müderrisoğlu (2010), Dawson (2006), Uzun (2005) and Dawson et al. (1997). These green spaces seem to be most effective in providing freedom, providing opportunity to be alone and in being in a fun environment with small groups. The open and green spaces on campus are places that provide social and cultural activities. Meeting the needs for rest and recreation in the open and green spaces on campus allows the development of the relationships between students and instructors not only educationally but also socially and culturally (Sherer, 2006; Kabisch et al., 2015). For this reason, it is necessary to take into account the social demands while determining the recreational value of the open and green spaces on campus (Levent & Nijkamp, 2005). In this context, it is natural that the participants prefer the green spaces in order to socialize, to do physical activity and to relax their minds, and to determine the satisfaction factors in this direction.

When the relationship between the demographic characteristics of the participants and their levels of satisfaction with the open and green spaces on campus were examined, it is determined that they wanted to spend their free time in nature and they preferred to be alone while doing that. A similar relationship was seen between the participants' mothers' education level and the Exploring Yourself factor. In the study which consisted of participants whose mothers' education levels were low, participants were mostly satisfied with being alone in green spaces and were affected by satisfaction factors that would reveal emotional characteristics under the Exploring Yourself factor. It was determined that although the education level of their mothers were low, these young people were affected by their mothers' educational status and directed their satisfaction in this direction.

The present study put forth that the open and green area users were affected by the time they spent in green spaces and the satisfaction criteria regarding socialization. The positive effect of green spaces on socialization was reported in many studies (Felsten, 2009; Maas et al., 2009; Coombes et al., 2010; Somerset et al., 2015; Hipp et al., 2016).

Majority of the participants wanted to use the open and green spaces on campus to have walks and cruise. There was a significant relationship between the sub-factors of Being in Nature and Exploring Yourself, two of

the satisfaction factors. These satisfaction factors and green spaces helps the individuals to psychologically relax by allowing them to return to their inner world. Studies revealing that green spaces psychologically ease individuals and improve their health (Korpela et al., 2010; Van Den Berg et al., 2010; Stigsdotter and Grahn, 2011) support this view.

The total values of the satisfaction factors regarding the campus open green spaces show that the factors of Being in Nature, Exploring Yourself and Socialization are effective on the participants. It is believed that campus open and green spaces belonging to universities will satisfy individuals' green area and outdoor needs. Similar results were reported by Erçevik and Önal (2011) and Çetinkaya et al., (2015).

### **Recommendations**

Green spaces not only meet the nutritional needs of people but also physically and psychologically contribute to them at different levels. Nowadays, individuals are faced with problems wearing down their physical and mental health like economic problems and environmental problems, which were caused specifically by them. For this reason, they turned their quest for health back to nature and started to breathe in spaces with green spaces and natural features, and began not to look down on the positive effect of green spaces on people. This study aimed to determine the student use of open and green spaces of the campus, a living area for students, in Niğde and their satisfaction with these spaces.

According to the study results, in order to increase satisfaction with the open and green spaces on campus in Niğde Ömer Halisdemir University, designs that would make the area more attractive and people spend more time should be made. Satisfaction level should be increased by increasing the opportunities for physical activity and sport activities in open and green spaces. In this direction, more attractive open and green spaces on campus will contribute to the academic success and physical and mental health of the users who spend time in indoor spaces. Increasing the size and quality of the open and green spaces on campus will positively affect the users' student and work life. In addition, in terms of developing quality green spaces, university will be able to shed light and be an example to the cities, which are trapped between the ever-increasing concrete. It is believed that increasing the amount of green spaces in Niğde cities and the effective use of open spaces will positively affect public health, and this will lead to a significant decrease in health costs, which have a significant share in the economy.

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