Sportif Bakış: Spor ve Eğitim Bilimleri Dergisi, 8(3): 281-292, 2021 Research Article
www.sportifbakis.com
E-ISSN: 2148-905X
doi: 10.33468/sbsebd.167

Analysis of Connectedness to Nature of Individuals Who Do Physical Activity at Outdoors

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Abstract

The concept of Connectedness to Nature, which has been frequently mentioned in recent years and is the most important milestone for sustainable understanding, has become the focus of various disciplines and fields of study. In this context, our study aims to contribute to the literature that will form a basis for the relationship between nature and sports by measuring the dependence of individuals who do the physical activity outdoors. The sample group of the study consists of 241 participants who come to do sports on certain days of the week in Ankara. "Connectedness to Nature Scale" adapted to Turkish by Bektaş, Kural, and Orçan, (2017) was used to determine the level of commitment to nature of the participants. The Cronbach's Alpha coefficient for the whole of the scale was found to be 88, and t-test and variance analysis methods were used to determine the dependency of the participants to nature according to their demographic information. The participants were examined, it was found that 34.9% were women and 65.1% were men. When their dependence on nature according to gender is examined, no statistically significant difference was found (t = -, 446 p> .05). When the frequency of physical activity of the participants is evaluated, doing physical activity continuously creates a positive effect on the connectedness to nature. As a result, as the amount of physical activities increases in open areas, the connectedness to nature will increase.

Key Words: Connectedness to the Nature, Outdoor Areas, Sport

1. INTRODUCTION

1.1 An Overview of the Relationship between Society and Nature

Human interaction with nature, which often takes place in the discussion ground of modern societies, is sometimes perceived as dominating nature and sometimes as integration with nature. While there was a view that centered and sanctified nature in ancient philosophy, with the development of modern science at the end of the middle age, nature was seen only as one of the parts that constitute the universe in the description of the mechanistic universe. Humans and reason have replaced admiration for exalted nature with utilitarian attitudes. (İlboğa and Aygül, 2015). At this point,

E-ISSN: 2148-905X
doi: 10.33468/sbsebd.167

contrary to the mechanist view of the universe, although the view that nature is a living and dynamic being is advocated with romanticism movements, the increase in industrialization and urbanization has made significant progress (Yardımcı, 2006). The mass of thoughts that took place at various stages of history, far from ecological balance and that saw man as the creator of nature, triggered the onset of environmental problems with the industrial revolutions afterward.

These environmental problems are discussed under two titles as reductionist and holistic view. Among these, problems such as desertification, reduction of biodiversity, air, water, and soil pollution, hazardous wastes, depletion of natural resources are reductionist problems. On the other hand, the deterioration in the social structure and the destruction of nature due to this constitute the holistic approach (Aygün and Mutlu, 2006). Economic insights are at the root of many of these problems. In the system that economists call "Capitalism", the consumption desire of humans has revealed its effect on nature as exploitation and hegemony, and even developed various tools to legitimize this order. The idea that transforming nature into an object to be consumed is an indispensable element has also been strongly adopted. The operation of the system is very simple. The exposed environment forces you to some unnatural needs, then a new list of needs emerges with those needs, and in this way, the needs become ongoing by creating needs. Human assumes that if some internal motivations of human beings are not taken under control and are not regulated with some ethical behaviors, human existence will only be sustained by consuming and taking over (Uzunoğlu, 2006). This view is at the top of the dangers underlying the ecological crisis of our time.

As Bookchin also states, the real danger is that today's society is disrupting organic evolution more than all societies in the past (Ünal, 2010). Harmful to the sustainability of nature, human beings are the triggers of irreversible problems. However, on the one hand, human beings play a leading role in the destruction of nature, on the other hand, they are the most important defender and savior of nature through the environmental consciousness they have. Being a defender and a protector of the environment can only be possible with environmental awareness. While creating environmental awareness, it is necessary to see today's environmental problems as a problem that occurs by coming together of many components. Because there are many moral, social, economic, political, and cultural factors based on these problems (Gül, 2013). If the framework of the problem can be drawn clearly, it will be easier to implement the necessary measurements for a solution. The truth is that whatever is the basis of the problem or solution, the main thing is to return to nature and the environment and to be able to sustain human existence.

1.2 Connectedness to Nature

Many sociological and philosophical theories of human-environment relations have used the concept of connectedness to quantify belonging to the natural world. According to Schultz, the basis of the connection with nature is cognitive, although it is generally used in a broader context. Connectedness refers to the extent to which an individual includes nature in his cognitive representation (Schultz, 2002). Mayer and Frantz (2004), adopted Leopold's philosophical approach while developing the scale of connectedness to nature. Leopold stated that the way people effectively understand environmental problems is that they should feel part of a larger natural world (Mayer and Frantz, 2004). Our sense of

E-ISSN: 2148-905X
doi: 10.33468/sbsebd.167

being included in nature is called our "ecological identity or essence". On the other hand, Perkins (2010), citing from Seamon (1984), stated that the love and responsibility towards nature can not only be thought mentally but one also must feel emotionally from the heart.

Based on these contexts, Nature Connectedness Scale which was developed by Mayer and Frantz (2004) and was adapted to Turkish by Bektaş, Kural, and Orçan (2017), was used to determine the level of connectedness to nature. The scale can be used to test the effects of situational factors and personality traits that may affect the connection with nature. In this way, the boundaries of the necessity of environmental problems to change our cultural worldview will be drawn more easily (Mayer et al., 2003).

1.3 The Relation between Physical Activity and Connectedness to Nature

With industrialization and urbanization, the intensity of working life, the monotony of urban life, and the desire to escape from a stressful life have caused people to turn to nature or the outdoors (Koçak and Balcı, 2010). Many activities can be done in nature. These activities include running (mountain and cross country), hikes (trekking and mountain), mountaineering, camping, cycling, canyoning, rock climbing, skiing, rowing, caving, rafting, paragliding, surfing, swimming, and many more. Unfortunately, people find the opportunity to take advantage of such events on weekends or holidays. Apart from these periods, people who are generally in working life are confined to closed areas or they must spend most of the day outside but in a physical environment away from nature. To get rid of indoor environments early or late in the day, to be healthy, to relax physically and mentally, they have started to prefer physical activity at the beaches, green park areas, or outdoor sports facilities that they can easily reach in their surroundings.

In time, it is thought that people's desire to do the physical activity outdoors will increase their sensitivity to the environment and their connectedness to nature. This manifests itself as a sequence that triggers each other. Love for nature triggers the desire for physical activity in nature, the more physical activity increases the connectedness to nature. Human gets closer to nature, knows nature better, integrate themselves with nature, and lead a life in harmony with nature. It is assumed that people who perceive nature at their limits are more protective of nature and try to take precautions against external factors that may harm nature.

Based on this context, the purpose of our research is to conclude how people who participate in physical activity evaluate the relationship between nature and sports by measuring their connectedness to nature within the activity limitation they participate in.

2. METHOD

2.1 Research Model

In the study, the correlational survey model, one of the quantitative research models, was used and data were collected by cluster sampling method, one of the probabilistic sampling methods. In the cluster sampling method, it is more appropriate to determine the clusters rather than the simple random selection of individuals due to the large size of the universe and its spread over large geography (Kılıç 2013).

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2.2 Participants

The sample group of the study consists of 251 participants who come to do physical activity on certain days of the week in Anıttepe Sports Facilities in Ankara. We collected our data in April 2018 After the data were collected, 10 participants were excluded from the study due to the missing items of the scale applied and the sample group was reduced to 241 people. While creating the sample group, busy days and hours were determined and the participants were randomly selected.

2.3 Data Collection Instruments

Nature Connectedness Scale which was developed by Mayer and Frantz (2004) and was adapted to Turkish by Bektaş, Kural, and Orçan (2017), was used to determine the level of connectedness to nature. The adapted form of the scale consists of two sub-dimensions and a total of 8 items. These sub-dimensions have been called "Integration with Nature" and "Part of Nature". There are no reverse-coded items on the scale.

2.4 Data Analysis

SPSS "24" package program was used for the evaluation of the statistical data. Cronbach's Alpha reliability coefficient was examined for the general and sub-dimensions of the scale and it was determined that the scale was reliable for the specified group. The Cronbach's Alpha coefficient for the overall scale was found to be 0.88 and Integration with Nature 0.64 and Part of Nature 0.86. To determine the tests to be used in the study, normality assumption was taken into consideration, and as a result of the assumption of normality, the application of parametric tests was found appropriate, since the skewness and kurtosis values were in the desired range. Among the parametric tests, the Independent sample t-test was applied to paired groups and the One Way Anova test for groups more than two, and the LSD test was used to determine where the difference originated from.

3. RESULTS

In this section, the demographic characteristics of individuals doing physical activity outdoors and the analysis results obtained according to these characteristics will be examined.

Table 1. Individual Characteristics of Participants

	Subgroups	Frequency (f)	Percentage (%)
Age (Average=46,17)	35 and under	60	24.9
	36-50	86	35.7
	51 and above	95	39.4
Sex	Female	84	34.9
	Male	157	65.1
Educational Status	Highschool	46	19.1
	Undergraduate	131	54.4
	Postgraduate	64	26.6
Occupation	Public Employee	91	37.8
	Private Sector Employee	83	34.4
	Retired	67	27.8

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The frequency of physical activity	Always	151	62.7
	Occasionally	62	25.7
	Whenever available	28	11.6

The demographic characteristics of the participants are given in Table 1. When the age groups of the participants were examined, it was determined that they were between the lowest 17, the highest 74, and the average 46.17. Participants aged 35 and under constitute 24.9%, 36-50 age range 35.7% and 51 and over participants 39.4% of the total group. When the sex ratios were examined, it was found that 34.9% female and 65.1% male participants were included in the study. When the educational status of the participants was examined, it was observed that 19.1% graduated from "High School", 54.4% are "Undergraduate" and 26.6% "Postgraduate". When the participants were analyzed by Profession Groups, it is determined that 37.8% are "Public Employees", 34.4% are "Private Sector Employees" and 27.8% are "Retired". Finally, when the frequency of physical activity of the participants was examined, it was determined that they answered "Always" with 62.7%, "Occasionally" with 25.7%, and "Whenever Available" with 11.6%.

Table 2. T-Test Results of the Connectedness to Nature of Individuals Performing Physical Activity Outdoors According to Sex

	Sex	**N**	**$\bar{X}$**	**Mean Difference**	**S**	**DF**	**t**	**P***
Integration with Nature	Female	84	4.1607	.02377	.81832	239	.217	.829
	Male	157	4.1369		.80784			
Part of Nature	Female	84	4.1587	-.06208	.69945	239	-.657	.512
	Male	157	4.2208		.69931			
The Scale of Connectedness to Nature	Female	84	4.1592	-.04061	.66409	239	-.446	.656
	Male	157	4.1998		.67876			

When looking at the t-test results of the connectedness to nature of individuals who do the physical activity outdoors according to gender in Table 2, no significant difference was found in the "Integration with Nature" sub-dimension [t =.217, p>0.05]. Similarly, no significant difference was found in the "Part of Nature" sub-dimension [t =.657, p>0.05]. And finally, no significant difference was found according to the result of the t-test of the general scale [t =. 446, p>0.05].

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Table 3. Variance Analysis Results of Connectedness to Nature of Individuals Performing Physical Activity Outdoors According to Age

	Age	$\bar{X}$	Sum of Squares	DF	Mean Square	F	P*	Difference (LSD)
Integration with Nature	35 and under (a)	3.9833	4.356	2	2.178	3.387	.035	c>a
	36 - 50 (b)	4.0814	153.061	238	.643			
	51 and above (c)	4.3053	157.417	240				
Part of Nature	35 and under(a)	3.9583	9.077	2	4.538	9.998	.001	c>a. b
	36 - 50 (b)	4.1143	108.030	238	.454			
	51 and above (c)	4.4281	117.107	240				
The Scale of Connectedness to Nature	35 and under (a)	3.9646	7.735	2	3.867	9.128	.001	a<b<c
	36 - 50 (b)	4.1061	100.831	238	.424			
	51 and above (c)	4.3974	108.566	240				

When looking at the results of variance analysis according to the age of the individuals who do the physical activity outdoors in Table 3, a significant difference was found in the "Integration with Nature" sub-dimension [F (2, 238) = 3.387, p<0.05]. Similarly, a significant difference was found in the "Part of Nature" sub-dimension [F (2, 238) = 9.998, p<0.05]. And finally, a significant difference was found according to the variance analysis result of the overall scale [F (2, 238) = 9.128, p<0.05].

Table 4. Variance Analysis Results of Connectedness to Nature of Individuals Performing Physical Activity Outdoors According to their Level of Education

	Groups	$\bar{X}$	Sum of Squares	DF	Mean Square	F	P*	Difference (LSD)
Integration with Nature	Highschool (a)	4.1848	1.013	2	.506	.771	.464	-
	Undergraduate	4.0878	156.404	238	.657			
	(b)		157.417	240				
	Postgraduate (c)	4.2344						
Part of Nature	Highschool (a)	4.1993	.421	2	.211	.429	.651	-
	Undergraduate	4.1667	116.685	238	.490			
	(b)		117.107	240				
	Postgraduate (c)	4.2656						
The Scale of Connectedness to Nature	Highschool (a)	4.1957	.534	2	.267	.588	.556	-
	Undergraduate	4.1469	108.032	238	.454			
	(b)		108.566	240				
	Postgraduate (c)	4.2578						

When the variance analysis results of the individuals who do physical activities outdoors are examined according to their education levels in Table 4, no significant difference was found in the "Integration with Nature" sub-dimension [F (2, 238) =.771, p>0.05]. Similarly, no significant difference was found in the "Part of Nature" sub-dimension [F (2, 238) =.429, p>0.05]. Finally, no significant difference was found according to the variance analysis result of the overall scale [F (2, 238) =.588, p>0.05].

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E-ISSN: 2148-905X
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Table 5. Variance Analysis Results of Connectedness to Nature of Individuals Performing Physical Activity Outdoors According to Occupations

	Groups	$\bar{X}$	Sum of Squares	DF	Mean Square	F	P*	Difference (LSD)
Integration with Nature	Public Employee	4.2033	4.141	2	2.071	3.215	.042	c>b
			153.276	238	.644			
	Private Sector Employee	3.9699	157.417	240				
	Retired	4.2836						
Part of Nature	Public Employee	4.2692	4.184	2	2.092	4.410	.013	a. c>b
			112.922	238	.474			
	Private Sector Employee	4.0201	117.107	240				
	Retired	4.3259						
The Scale of Connectedness to Nature	Public Employee	4.2527	4.169	2	2.085	4.752	.009	a. c>b
			104.396	238	.439			
	Private Sector Employee	4.0075	108.566	240				
	Retired	4.3153						

When looking at the results of variance analysis of the connectedness of the individuals who do the physical activity outdoors according to the occupations in Table 5, a significant difference was found in the "Integration with Nature" sub-dimension [F (2, 238) = 3.215, p<0.05]. Similarly, a significant difference was found in the "Part of Nature" sub-dimension [F (2, 238) = 4.410, p<0.05]. Finally, a significant difference was found according to the variance analysis result of the overall scale [F (2, 238) = 4.752, p<0.05].

Table 6. Variance Analysis Results of Connectedness to Nature of Individuals Performing Physical Activity Outdoors According to their Frequency of Physical Activity

	Groups		Sum of Squares	DF	Mean Square	F	P*	Difference (LSD)
Integration with Nature	Always (a)	4.2781	7.389	2	3.695	5.861	.003	a>b
	Occasionally (b)	3.8871	150.028	238	.630			
	Whenever available (c)	4.0000	157.417	240				
Part of Nature	Always (a)	4.2472	1.145	2	.572	1.175	.311	-
	Occasionally (b)	4.0860	115.962	238	.487			
	Whenever available (c)	4.1905	117.107	240				
The Scale of Connectedness to Nature	Always (a)	4.2550	2.160	2	1.080	2.416	.092	a>b
	Occasionally (b)	4.0363	106.406	238	.447			
	Whenever	4.1429	108.566	240				

	available (c)

In Table 6, when the variance analysis results of individuals who do the physical activity outdoors according to their frequency of physical activity were analyzed, no significant difference was found in the "Integration with Nature" sub-dimension [F (2, 238) = 5.861, p<0.05]. Similarly, no significant difference was found in the "Part of Nature" sub-dimension [F (2, 238) = 1.175, p>0.05]. Finally, no significant difference was found according to the variance analysis result of the overall scale [F (2, 238) =2.416, p>0.05].

4. DISCUSSION and CONCLUSION

Considering the t-test results of individuals who do the physical activity outdoors according to gender, no significant difference was found in the sub-dimensions and the scale. Barton, Bragg, Pretty, Roberts, and Wood (2016), in their study with 130 people, revealed that gender had no direct effect on connectedness to nature. This study is in line with the findings of our study. Similarly, Zhang, Howell, and Iyer (2014) did not find a significant relationship between gender and connectedness to nature in their study with 1108 volunteers residing in the USA. While these findings are in line with the findings of our study, Haluza, Simic, Höltge, Cervinka, and Moshammer (2014), stated in a study they conducted with 1500 people that women are more committed to nature than men. This situation is not similar to the findings of our study.

When we look at the results of variance analysis by age of the individuals who perform physical activity outdoors, a significant difference was observed in all sub-dimensions and throughout the scale. It was observed that as age increased, the connectedness of the participants to nature increased. Liefländer, Fröhlich, Bogner, and Schultz (2012), mentioned the scarcity of studies indicating when the period is most sensitive to reinforcing a person's level of connectedness to nature and stated that this time may be the transition from childhood to adolescence. Liefländer et al. (2012), stated that in a two-stage study they carried out with 304 and 264 students, smaller individuals showed more connectedness to nature. Bruni and Schultz (2010), stated that some children from childhood to adulthood may change their connectedness to nature and that children who spend more time outside will have a higher level of connectedness to nature. Studies are not in line with our findings.

When the variance analysis results of individuals who do physical activity in outdoor areas according to their levels of education were examined, no significant difference was found in all sub-dimensions and the overall scale. Similarly, Deretarla Gül and Polat (2018), could not detect any relationship between education level and natural tendency in their study on biophilia (tendency to nature) scores of 100 children and their mothers. On the other hand, Klineberg, McKeever, and Rothenbach (1988) stated in their study that younger and well-educated adults are more concerned about environmental issues and are more connected to the environment. Buttel and Flinn (1978), showed in their study that individuals with higher education were more aware of environmental problems than those with lower education. In this sense, the studies are not parallel to our findings.

When we look at the results of variance analysis of individuals who do the physical activity outdoors

E-ISSN: 2148-905X
doi: 10.33468/sbsebd.167

according to their professions, a significant difference was observed in all sub-dimensions and the overall scale. In the Integration with Nature sub-dimension, retirees' level of connectedness to nature is significantly higher than other occupational groups. In the Part of Nature sub-dimension and the overall scale, retired people and public employees showed higher connectedness than private-sector employees. It is thought that public employees may long for nature due to the exposure to closed areas during their working life and therefore their connectedness to nature may be higher (Koçan, 2007; 33). Can (2015), mentioned that people prefer the outdoors especially in their recreational activities as an escape from busy urban life and inactivity. This may have a positive effect on nature connectedness. On the other hand, it is thought that individuals in the retired category also have a high level of connectedness to nature because they prefer sports outdoors for a healthy life. Ardahan and Yerlisu Lapa (2011), in their study, mentioned that people move away from unhealthy and monotonous urban life and return to nature, and tend to recreation activities in nature to benefit from natural tourism resources. The low level of connectedness to nature for private-sector employees is thought to be due to the relationship between job satisfaction and life satisfaction. Mostly, private sector working conditions are intense and hard due to the competitive environment (Özdevecioğlu, 2002). This situation may not only support a business-oriented understanding of life but also reveal an approach to move away from all other awareness.

When the variance analysis results of the individuals who do physical activity in outdoor areas according to their frequency of physical activity were examined, it was found in the integration with nature sub-dimension that those who did more frequent physical activity were more connected to nature than those who did the less physical activity. No significant difference was found in the sub-dimension of being a part of nature and in the overall scale. This situation may be associated with the inability to find opportunities for physical activity outdoors or the insufficiency of outdoor sports areas. Akten, Yılmaz, and Gül (2009) stated in their study that although the recreational needs of urban people are increasing and expanding, the existing open green areas are insufficient in terms of quality and quantity. In addition, Öztürk and Özdemir (2013), emphasized that the existing open areas should not only be sufficient in terms of areal size but also should be evaluated in terms of functionality.

According to the results of our study, while the participants' level of connectedness to nature did not show a significant difference in terms of gender, education levels, all sub-dimensions, and the scale in general, it was observed that there was a significant difference in the frequency of physical activity in the integration with nature sub-dimension, age and occupation groups in all sub-dimensions and the scale. It has been supported by the findings of our study, which supports the idea of doing more physical activity outdoors, integrating with nature, that is, increasing connectedness to nature.

5. LIMITATIONS AND RECOMMENDATIONS

The limitations of our study are the individuals who come to the open athletics track in Ankara. The sample group consisting of people who come to open areas and do a physical activity can be expanded by including different regions and settlements. In addition to our study, different studies can be designed by investigating the level of connectedness to nature of people who do physical

E-ISSN: 2148-905X
doi: 10.33468/sbsebd.167

activity in closed areas, the reasons for choosing closed areas, and the level of connectedness of individuals indoors and outdoors to nature. Again, by diversifying independent variables, levels of connectedness to nature can be explained for various reasons. The findings to be obtained can be a reference in terms of sustainable sports fields and serving the protection of nature. Speaking of the assumption that the area where data was collected in the study "creates a sense of natural area" for the participants can be emphasized in terms of putting a bracket for the discussion for other researchers.

Acknowledgments
The authors were not supported by any fund and/or institution within the scope of the study.
Author Contributions
All authors contributed to the article equally.
Conflict of Interest
The authors stated any conflict of interest in their study and publication.

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Received : 26.03.2021
Accepted : 22.10.2021

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