International Journal of Religion
2024
Volume: 5| Number 12 | pp. 1855 – 1865
ISSN: 2633-352X (Print) | ISSN: 2633-3538 (Online)
ijor.co.uk
DOI: https://doi.org/10.61707/nsara316

Determination of Factors That May Obstacle Forest Engineers' Participation in Recreational Activities

Ayşe Esra Hakverdi[1]

Abstract

A field survey was carried out with 740 forest engineers employed in different Turkish towns to investigate the variables that can prohibit forest engineers from engaging in recreational activities as well as the connections among these factors. According to the results of the study, it was determined that recreational (Individual Psychology, Lack of Information, Lack of Facilities, Lack of Friends, Lack of Time, Lack of Interest, Total Scale) variables tend to be mostly "important". When the effects of demographic characteristics on the participants' recreational activity barriers were examined, it was determined that the participants' gender, marital status, education level, and employment level caused a significant difference in different sub-dimensions and total scale levels. Finally, the mediation effects of working hours were evaluated in the study. The results of the analysis showed that working hours had a partial mediating role in the relationship between time problems and barriers to recreational activities, and a full mediating role in the relationship between facility and time problems and the degree of participation barriers. The researcher came up with several recommendations in light of these findings. Because it contributes data to the literature, our study is significant and one of the first scientific investigations on the topic of activity obstacles in forest engineers.

Keywords: *Forest Engineers, Obstacle Factors, Recreation, Recreational Activity Obstacles.*

INTRODUCTION

Forest engineering in Turkey has a 150-year history, dating back to 1857, when the forestry school was formed in Istanbul. Today, nine forestry faculties teach forestry engineering, forest industry engineering, and landscape architecture (Gümüş 2022). Forest engineers have social responsibility while working in natural settings (Topaloğlu and Alkan 2023). The National Parks Law No. 2873, as well as other pertinent statutes, give forest engineers broad tasks and obligations, broadening the scope of their work. Turkey's participation in international accords broadens forest engineers' duties and areas of duty (Akyol et al. 2022).

According to the literature review, the primary problem in forest engineers' working lives is widespread problems caused by gender discrimination (Atılır and Gültekin 2020; Yıldırımalp 2021; Hakverdi et al. 2024). According to Propst et al. (1996), the growth of forest engineers' areas of duty and responsibility indicates that their workload has expanded because of international agreements. Turkey's unique forestry structure distinguishes professional definitions and difficulties faced by forest engineers from those in other nations. Employees in forest organizations have faced ongoing issues in recent years (Gülez 1990). Forest engineers have numerous challenges, including harsh working circumstances, unpredictable working hours, a lack of job security, an enormous workload, and limited social possibilities. Employees feel job unhappiness, stress, and a loss of sense of belonging because of poor pay and a lack of social time (Şafak and Gül 2012). Literature highlights how this situation leads to low job satisfaction and individual psychology is also affected.

The design of recreational areas is based on ensuring visitors' safety and comfort while not disrupting the forest's natural structure, but it is unknown to what extent forest engineers themselves can engage in recreational activities and what factors influence their levels of involvement in these activities, which can also vary regionally around the world. Participation in recreational activities is seen as an important way to escape the difficulties of modern life. Technological developments have increased the desire for recreational activities by shortening working hours and increasing free time. Research shows that recreational activities have positive effects on both individual and social health, but it has also been observed that people stay away from these activities for various reasons. Crawford and Godbey (1987) mention three main barriers to participation in

[1] Department of Forestry, Bogazlıyan Vocational High School1, Yozgat Bozok University, Yozgat, 66400, Türkiye; a.esra.hakverdi@bozok.edu.tr, ORCID ID: 0000-0002-1783-6475

recreational activities: individual, interpersonal, and structural factors. Individual factors are related to the person's awareness of his/her ability level, his/her perspective on the activity, and its validity. Interpersonal factors include factors such as finding a partner or friend for the activity, money, and time, while structural factors include barriers such as transportation, quality of facilities, and accessibility. Empirical studies have identified the main factors affecting recreational activity participation as "money," "time," "lack of friends," "transportation," and "facilities," respectively (Moore et al. 2010; Amusa et al. 2008). It is thought that forest engineers, whose working hours can be quite long and demanding, can contribute to the improvement of their individual psychology as well as their professional performance by engaging in recreational activities.

Considering the facts supplied and the problem situation, the study's goal is to identify the variables that prohibit forest engineers working throughout Turkey from engaging in recreational activities. For this reason, a field survey involving 740 forest engineers was carried out.

MATERİALS AND METHODS

In this study, participants who are working as forest engineers throughout Turkey participated voluntarily and informed consent was obtained from all participants. An anonymous survey (i.e., collection tools that did not collect personal data) was used to increase response accuracy. Participants were required to answer questionnaires that lasted approximately 5 minutes. All data collection procedures were carried out with the approval of the Yozgat Bozok University Ethics Committee No. 204506.

The convenience samples were conducted among 740 forest engineers (239 female, 501 male) working throughout Turkey. The characteristics of the participants are given in Table 1.

Table 1. Demographic characteristics of participants

	Frequuency (N)	**Percent (%)**
Gender		
Female	239	32,3
Male	501	67,7
Age		
34-41	355	48,0
26-33	261	35,3
42-49	70	9,5
50+	54	7,3
Marital status		
Married	395	53,4
Single	345	46,6
Education		
Bachelor's	500	67,6
Postgraduate	240	32,4
Working Time (Hoours)		
1-5	384	51,9
6-10	166	22,4
11-15	87	11,8
16-20	103	13,9
Total	740	100

As seen in Table 1, the participants of the study are mostly male, between the ages of 34-41, married and working between 1-5 hours per day.

The 5-question form developed by the researcher included multiple choice questions to obtain information about the individual's own descriptive characteristics. The 18-item 6-point Likert-type scale was developed by Alexandris & Carroll (1997) and was adapted to Turkish by Gürbüz & Karaküçük in 2007 with the permission of the author (Gürbüz and Karaküçük 2007). It was reproduced for use in research. The scale includes questions assessing Individual Psychology, Lack of Information, Lack of Facilities, Lack of Friends, Lack of Time and Interest. There is no reverse item in the scale. Cronbach's alpha value showing the internal consistency of the scale was found between .76 (time) and .88 (facility) for the group consisting of all participants (N=210) in the Turkish adaptation and validity and reliability study. According to the data obtained in our study, reliability levels are shared in Table 2.

Table 2. Data collection tool and sub-dimensions reliability levels

Sub-Dimensions	Cronbach's Alpha
Individual Psychology	0,740
Lack of Information	0,848
Lack of Facilities	0,817
Lack of Friends	0,840
Lack of Time	0,730
Interest	0,748
Scale Total	0,884

When the data in Table 2 is examined, it is seen that the reliability level of the sub-dimensions and the total scale is in the range of 0.730-0.884 and the reliability level is high.

In this study, SPSS 21.0 statistics program was used in the analysis of the data. Information about the mean, standard deviation, skewness and kurtosis values of the total scores of the scales are shown in the descriptive statistics table. Skewness and kurtosis coefficients were used in the normality test of the scale scores. If the skewness and kurtosis coefficients used in the normal distribution feature of the scores obtained from a continuous variable remain within the limits of ±1.5, it can be interpreted that the scores do not show a significant deviation from the normal distribution. The scales used in the study were compared according to the total and sub-dimension demographic variables and significant differences were determined. In addition, regression analysis was performed to determine the effects in detail. The significance value of the statistical analysis was accepted as $p<0.05$ (Cohen et al. 2013).

In addition, the analyses of the study are based on the hypotheses determined below.

H1: Participants' attitudes towards leisure time barriers are at a high level.

H2: Participants' attitudes towards leisure time barriers vary depending on demographic variables.

H3: Working hours have a mediating effect on recreational activity barriers.

RESULTS

In the study, firstly, whether the research data followed the normal distribution was determined by determining the skewness-kurtosis values. It was observed that the data collected from 740 forest engineers showed a normal distribution (skewness, kurtosis; ±1.00). In this context, parametric test techniques were used. Firstly, the descriptive statistical properties of the scale total and sub-dimensions were examined in the study (Table 3).

Table 3. Averages relating to scale and sub-dimensions

Sub-Dimensions	Mean ($\bar{X}$) ±S.S.
Individual Psychology	2,518±0,675
Lack of Information	2,766±0,755
Lack of Facilities	2,924±0,694
Lack of Friends	2,448±0,741
Lack of Time	2,855±0,635
Interest	2,395±0,711
Scale Total	2,651±0,485

When the data in Table 3 is examined, it is seen that the participants' response averages in the sub-dimensions vary between 2.395±0.711 and 2.924±0.694. It was determined that the recreational variables tended to be mostly "important" for the scale in the form of a 4-point Likert scale.

In the continuation of the study, the effects of the demographic characteristics of the participants on their attitudes were examined (Table 4).

Table 4. The effect of gender on participants' recreational barriers

Sub-Dimensions	Gender	N	Mean ($\bar{X}$)	F	t	p
Individual Psychology	Female	239	2,553	4,673	1,017	0,309
	Male	501	2,501			
Lack of Information	Female	239	2,789	1,030	0,569	0,570

	Male	501	2,755			
Lack of Facilities	Female	239	3,000	3,556	2,091	0,037*
	Male	501	2,888			
Lack of Friends	Female	239	2,424	1,580	-1,608	0,543
	Male	501	2,460			
Lack of Time	Female	239	2,894	1,349	1,156	0,248
	Male	501	2,836			
Interest	Female	239	2,474	1,591	2,134	0,033*
	Male	501	2,357			
Scale Total	Female	239	2,689	0,076	1,470	0,142
	Male	501	2,633			

*p<0,05

When examined in Table 4, it was determined that the participants showed a significant difference according to gender only in the Lack of Facilities and Interest sub-dimensions (p<0.05). No significant difference was observed in the other sub-dimensions and the total scale (p>0.05).

The second demographic variable examined in the study is marital status (Table 5).

Table 5. The effect of marital status on participants' recreational barriers

Sub-Dimensions	Status	N	Mean ($\bar{X}$)	F	t	p
Individual Psychology	Married	395	2,540	0,045	0,932	0,352
	Single	345	2,493			
Lack of Information	Married	395	2,745	0,840	-0,832	0,406
	Single	345	2,791			
Lack of Facilities	Married	395	2,940	2,780	0,657	0,511
	Single	345	2,906			
Lack of Friends	Married	395	2,467	1,819	0,736	0,462
	Single	345	2,427			
Lack of Time	Married	395	2,934	21,527	3,613	0,000*
	Single	345	2,764			
Interest	Married	395	2,400	0,228	0,236	0,813
	Single	345	2,388			
Scale Total	Married	395	2,671	0,561	1,192	0,234
	Single	345	2,628			

*p<0,05

When Table 5 is examined, it is seen that there is a significant difference only in the Lack of Time sub-dimension according to the marital status variable of the participants (p<0.05). No differences were observed in the other dimensions (p>0.05). Another variable of the study is the level of education (Table 6).

Table 6. The effect of education on participants' recreational barriers

Sub-Dimensions	Education	N	Mean ($\bar{X}$)	F	t	p
Individual Psychology	Bachelor's	500	2,518	1,481	-0,026	0,979
	Postgraduate	240	2,519			
Lack of Information	Bachelor's	500	2,814	3,305	2,372	0,018*
	Postgraduate	240	2,668			

Lack of Facilities	Bachelor's	500	2,910	0,659	-0,750	0,453
	Postgraduate	240	2,952			
Lack of Friends	Bachelor's	500	2,457	1,285	0,446	0,656
	Postgraduate	240	2,430			
Lack of Time	Bachelor's	500	2,860	0,841	0,344	0,731
	Postgraduate	240	2,843			
Interest	Bachelor's	500	2,418	2,641	1,225	0,221
	Postgraduate	240	2,347			
Scale Total	Married		2,663	0,777	0,916	0,360
	Single		2,626			

*p<0,05

It was determined that the education levels of the participants caused a significant difference on the Lack of Information sub-dimension (p<0.05), while no differences were found in the other sub-dimensions (p>0.05). The study continued by examining the effect of age (Table 7).

Table 7. The effect of age on participants' recreational barriers

Sub-Dimensions		Sum of Squares	F	p
Individual Psychology	Between Groups	7,016	5,206	0,001*
	Within Groups	330,399		
Lack of Information	Between Groups	2,105	1,231	0,297
	Within Groups	419,606		
Lack of Facilities	Between Groups	1,121	0,775	0,508
	Within Groups	354,864		
Lack of Friends	Between Groups	3,755	2,287	0,077
	Within Groups	402,849		
Lack of Time	Between Groups	1,670	1,383	0,247
	Within Groups	196,317		
Interest	Between Groups	1,807	1,190	0,313
	Within Groups	372,597		
Scale Total	Between Groups	1,603	2,277	0,078
	Within Groups	172,785		

*p<0,05

According to the data in Table 7, a significant difference was observed in the Individual Psychology sub-dimension depending on the age of the participants (p<0,05). The Bonferroni test, a post hoc test, was applied to determine which groups differed (Table 8).

Table 8. Bonferroni test for determining differences between age groups

Dependent variable	Age	Age	Standard Error	p
Individual Psychology	50+ (2,197)	34-41 (2,547)	0,097	0,002
		26-33 (2,568)	0,100	0,001

*p<0,05

As seen in Table 8, it was determined that participants aged 50 and over differed significantly from participants aged 34-41 and 26-33, and the attitude level was in favor of younger groups (p<0.05).

The last variable examined in this study is working hours (Table 9).

Table 9. The effect of working hours on participants' recreational barriers

Sub-Dimensions		Sum of Squares	F	p
Individual Psychology	Between Groups	4,279	3,151	0,024*
	Within Groups	333,135		
Lack of Information	Between Groups	10,514	6,273	0,000*
	Within Groups	411,198		
Lack of Facilities	Between Groups	2,909	2,021	0,110
	Within Groups	353,075		
Lack of Friends	Between Groups	0,902	0,545	0,651
	Within Groups	405,702		
Lack of Time	Between Groups	3,032	2,522	0,057
	Within Groups	294,955		
Interest	Between Groups	1,516	0,998	0,393
	Within Groups	372,888		
Scale Total	Between Groups	2,651	3,786	0,010*
	Within Groups	171,738		

*p<0,05

According to Table 9, the study levels of the participants caused significant differences in Individual Psychology, Lack of Information and total scale levels (p<0.05). The Bonferroni test, a post hoc test, was applied to determine which groups differed (Table 10).

Table 10. Bonferroni test for determining differences between working hour groups

Dependent variable	Working Hours	Working Hours	Standard Error	p
Individual Psychology	1-5 (2,568)	16-20 (2,339)	0,074	0,014
Lack of Information	1-5 (2,868)	16-20 (2,540)	0,082	0,000
Scale Total	1-5 (2,687)	16-20 (2,509)	0,053	0,006

*p<0,05

According to the data in Table 10, there are significant differences in attitudes between the participants who work 1-5 hours a day and those who work 16-20 hours a day in the relevant sub-dimension and scale total (p<0.05). In addition, the differences are in the direction of those who work shorter hours.

Finally, the study examined the mediating role of working hours in the effect of facility problems and time problems on the level of participation barriers to recreational activities. In order to evaluate the mediating effects, firstly the effects were determined to be significant with regression (p<0.05) and then the Sobel test (PROCESS) analysis developed by Hayes was performed (Table 11).

Table 11. Data on the mediating role of working time in the effect of facility problems on recreational barriers

	Effect	LLCI	ULCI	p
FP $\rightarrow$ RB	0,005	0,000	0,009	0,008

*p<0,05

When Table 11 is examined, the mediating role of working hours in the effect of facility problems on recreational activity barriers was examined. In the case where the dependent variable is the level of recreational activity barriers, it was determined that working hours had a significant mediating effect (p<0.05), and also that according to Hayes, since there was no value of 0 in the LLCI-ULCI range (i.e., there were no values - and +), it had a "full mediating variable" role (0.000-0.009). The relationships regarding the analysis details are shared in Figure 1.

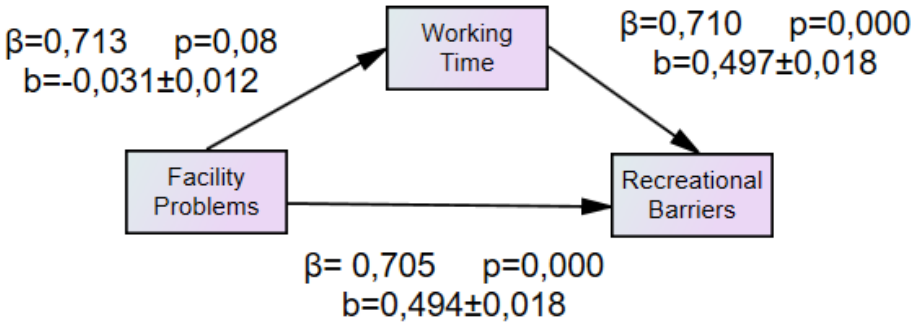

Figure 1. Coefficients on effects between variables (FP → RB)

After examining the facility problems, the mediating effect of working hours on the effect of time problems was determined with the same analysis (Table 12).

Table 12. Data on the mediating role of working time in the effect of time problems on recreational barriers

	Effect	LLCI	ULCI	p
TP → RB	0,004	-0,001	0,012	0,000

*p<0,05

As seen in Table 12, when the mediating role of working hours in the effect of time problems on recreational activity barriers was examined, it was determined that working hours had a significant effect again (p<0.05), but when the LLCI-ULCI range was examined, this effect (-0.001-0.012) had the role of a "partial mediating variable". The detailed effects between the variables are shared in Figure 2.

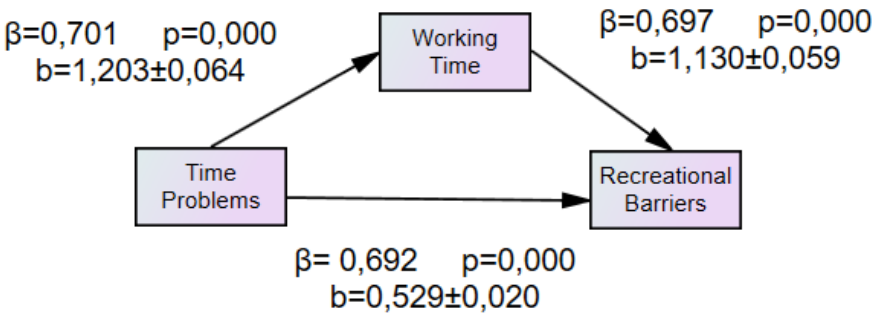

Figure 2. Coefficients on effects between variables (TP → RB)

DİSCUSSİON

In the study, it was first determined that the variables Recreational (Individual Psychology, Lack of Knowledge, Lack of Facilities, Lack of Friends, Lack of Time, Interest, Total Scale) tended to be mostly "important" for the scale in the form of a 4-point Likert scale. Observing that the factors were mostly evaluated as "important" shows that these factors constitute strong barriers to participation. Individuals' psychological factors appear to be an important factor in participation in recreational activities, and other studies in the literature also show that work stress and mental fatigue can reduce individuals' participation in social and recreational activities (Güven and Ercan 2018; Sevil 2015; Degenhardt et al. 2011). This issue is said to be connected to the fact that people in jobs that require a lot of labor are unable to find the time or energy to relax or interact with others outside of work. It is evident that efficient information studies should be conducted in order to increase the benefits of such activities, particularly for forest engineers working in natural environments, as a lack of

knowledge can also result in people having limited access to various recreational opportunities and being unaware of their advantages. Examining the literature reveals that a major activity barrier to other professional groups' propensity for recreational activities is a lack of knowledge. Paslı and Harbalıoğlu (2014) determined that lack of information is an important factor in their study examining the recreational activity barriers of university students. In another study conducted with adults, it was again mentioned that lack of information has motivation-reducing effects (Cerin et al. 2010). Perhaps one of the most important factors among these sub-dimensions is lack of facilities. As it is also included in the literature, the lack of recreational facilities is one of the important environmental factors that directly affects the participation rate of individuals in activities (Şapcılar et al. 2019; Kaya and Müderrisoğlu 2015; Kruszyńska and Poczta 2020). The social dimension of recreational activities is an important source of motivation for participation, and lack of friends can be cited among the reasons for staying away from social activities (Zivaroğlu et al. 2023). This factor is associated with the individual's lack of social support or the lack of enough people in their current environment who want to participate in activities (Dorul 2017; Borodulin et al. 2016). Many occupational groups view a lack of time as a major barrier to engaging in leisure activities. This predicament is made even more apparent, particularly for forest engineers who work long and demanding hours. A review of the literature reveals that research has been done on the decline in forest engineers' work-life balance (Strehlke 2003; Mederski et al. 2021; Košir et al. 2015). There aren't many studies on forest engineering explicitly in the literature, though, and further research on the status and working conditions of forest engineers is required. Literature has established that personal interest has a direct impact on recreational participation, and it has been noted that as individuals' areas of interest increase, so do their participation rates. People's lack of interest also acts as a barrier to their personal preferences when it comes to focusing on recreational activities (Amusa et al. 2008; Reichert et al. 2007; Uzun et al. 2017). With these findings, understanding how forest engineers in Turkey experience these factors and how they are related to each other has made significant contributions to work-life balance and job satisfaction.

When the effects of demographic characteristics on participants' recreational activity barriers were examined, it was determined that the participants showed significant differences only in the Lack of Facilities and Interest sub-dimensions according to gender; that there was a significant difference only in the Lack of Time sub-dimension according to marital status variable; that education levels created a significant difference in the Lack of Information sub-dimension; that there was a significant difference in the Individual Psychology sub-dimension depending on the participants' ages (participants aged 50 and over differed significantly from participants aged 34-41 and 26-33 and the attitude level was in favor of the younger groups); that their working levels caused significant differences in the Individual Psychology, Lack of Information and total scale levels (in the total of the relevant sub-dimension and scale, there were significant differences in terms of attitude between participants who worked 1-5 hours a day and participants who worked 16-20 hours a day in favor of those who worked shorter hours). According to the literature, the motivations and expectations of men and women to participate in recreational activities may differ; While women prioritize safer, more accessible facilities that offer socialization opportunities, men may tend to engage in more individual or adventurous activities (Salimi et al. 2021; Heesch et al 2012). The fact that married people typically struggle to balance their social, familial, and professional life explains the finding that marital status only significantly affects the lack of time sub-dimension. Due to family responsibilities, this circumstance may restrict the amount of time they may devote to leisure pursuits (Borodulin et al. 2016; Kara and Yorumazlar 2022; Duman et al. 2023). The lack of knowledge sub-dimension is significantly influenced by education level, and educated people are generally more aware of the advantages of leisure activities. As is the case with most studies, ours found that people become more aware of the social and health benefits of recreational activities as their education level rises (Cerin et al. 2010; Reichert et al. 2007). The fact that the age variable creates a significant difference in the individual psychology sub-dimension indicates that especially younger forest engineers have higher motivation and positive attitudes towards participating in recreational activities and that young engineers are more likely to socialize and try new activities. Finally, the finding that working hours have significant effects on individual psychology and lack of information indicates that longer working hours can negatively affect individuals' psychological well-being and access to information (Yıldırımalp 2021; Hakverdi et al. 2024) and is a variable focused on in this study. However, it is seen that there is not enough research in the literature on the long and irregular working hours of forest engineers.

Lastly, the study assessed the mediation effects of working hours. According to the analysis's findings, working hours were found to be a partial mediating variable in the relationship between time issues and barriers to recreational activity, and a full mediating variable in the relationship between facility and time issues and the degree of participation barriers. These results demonstrate how long workdays highlight environmental obstacles including time restrictions and a lack of facilities. To put it another way, it is more noticeable in settings with enough facilities for social and physical activities, but working people are unable to take advantage of these because of time constraints. Furthermore, people who work long hours typically have less time for leisure, family responsibilities, and other commitments after work (Ilić et al. 2024).

CONCLUSİONS

In this study, which examines the factors that may prevent forest engineers from participating in recreational activities and the relationships between these factors, a field study was conducted with 740 forest engineers working in various cities in Turkey. The participants' gender, marital status, education level, and employment level were found to significantly affect various sub-dimensions and overall scale levels when the effects of demographic characteristics on their recreational activity barriers were investigated. Lastly, the study assessed the mediation effects of working hours. The analysis's findings demonstrated that working hours played a full mediating function in the association between facility and time issues and the level of participation barriers, and a partial mediating role in the relationship between time issues and barriers to leisure activities.

In light of these results, the following recommendations have been developed;

More research needs to be done on the forestry engineering profession,

Since the gender difference is also evident in the level of lack of interest, events and activities that will attract the attention of engineers should be organized by professional organizations such as the Forestry Engineers Association,

Since differences in the level of lack of information are observed according to the level of education, informative seminars, bulletins or guidebooks should be prepared for forestry engineers,

The difference in individual psychological barriers depending on age shows that there are different needs in participation in recreational activities between young and older engineers. While more active sports and dynamic activities should be organized for young engineers, more relaxing activities such as nature walks and meditation should be recommended for older engineers,

Considering the relationship between the level of work and obstacles such as individual psychology and lack of information, support programs should be provided to balance the workload of employees.

Funding

This research received no external funding.

Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki, and approved by the Ethics Committee of Yozgat Bozok University 12/06 (20.03.2024).

Informed Consent Statement

Not applicable.

Data Availability Statement

The original contributions presented in the study are included in the article; further inquiries can be directed to the corresponding author.

Conflicts of Interest

The author declares no conflicts of interest.

REFERENCES

Akyol, Ayhan, Ayşe E. Hakverdi, and Türkay Türkoğlu. 2022. Orman mühendislerinin iş doyumunu etkileyen faktörler. Turkish Journal of Forest Science, 6(1), p. 310-326.

Alexandris, Konstantinos, and Bob Carroll. 1997. Demographic differences in the perception of constraints on recreational sport participation: Results from a study in Greece. Leisure Studies, 16(2), p. 107-125.

Amusa, L. O., A. L. Toriola, I. U. Onyewadume and H. S. Dhaliwal. 2008. Perceived barriers to sport and recreation participation in Botswana. African Journal for Physical Health Education, Recreation and Dance, 14(2), p. 115-129.

Atılır, Muzaffer, and Yaşar S. Gültekin. 2020. Devlet Orman İşletmelerinde Hizmet Alımı ile Çalışan Orman Mühendislerinin Ormancılık Mesleğine Bakış Açılarının Araştırılması. Bartın Orman Fakültesi Dergisi, 22(3), p. 1023-1036.

Borodulin, Katja, Noora Sipilä, Ossi Rahkonen, Päivi Leino-Arjas, Laura Kestilä, Pekka Jousilahti, and Ritva Prättälä. 2016. Socio-demographic and behavioral variation in barriers to leisure-time physical activity. Scandinavian journal of public health, 44(1), p. 62-69.

Cerin, Ester, Evie Leslie, Takemi Sugiyama, and Neville Owen. 2010. Perceived barriers to leisure-time physical activity in adults: an ecological perspective. Journal of physical activity and health 7.4, p. 451-459.

Cohen, Jacob , Patricia Cohen, Stephen G. West, and Leona S. Aiken. 2013. Applied multiple regression/correlation analysis for the behavioral sciences. Routledge.

Crawford, Duane. W., and Geoffrey Godbey. 1987. Reconceptualizing barriers to family leisure. Leisure sciences, 9(2), p. 119-127.

Degenhardt, Barbara, Jacqueline Frick, Matthias Buchecker, and Heinz Gutscher. 2011. Influences of personal, social, and environmental factors on workday use frequency of the nearby outdoor recreation areas by working people. Leisure Sciences 33.5, 2011, p. 420-440.

Dorul, Erkut. 2017. Mili Eğitime bağlı görev yapan öğretmenlerin rekreasyon etkinliklerine katılımlarının ve serbest zaman engellerinin incelenmesi (Antalya örneği). Diss. Akdeniz University (Turkey).

Duman, Murat, and Mustafa C. Koç, Laurentiu-gabriel Talaghir, Abdullah Çuhadar, Harun Çöpür, and Aydın Pekel. 2023. Examination of the Barriers to Participation in Recreation Of Individuals Working in Local Governments. Uluslararası Spor Bilimleri Öğrenci Çalışmaları, 5(2), 2023, p. 60-69.

Gülez, Sümer. 1990. Ormaniçi rekreasyon potansiyelinin saptanması için geliştirilen bir değerlendirme yöntemi. Journal of the Faculty of Forestry Istanbul University, 40(2).

Gümüş, Cantürk. 2022. Türkiye'de orman mühendisliği eğitimi ve KTÜ Orman Fakültesi Orman Mühendisliği Bölümü. Ormancılık Araştırma Dergisi, 9(Özel Sayı), p. 369-380.

Gürbüz, Bülent, and Suat Karaküçük. 2007. Boş Zaman Engelleri Ölçeği-28: Ölçek Geliştirme, Geçerlik ve Güvenirlik Çalışması. Gazi Beden Eğitimi ve Spor Bilimleri Dergisi, 12(1), 2007; 3-10.

Güven, Yiğit, and Ercan Yavuz. 2018. Çalışanların Rekreasyonel Aktivitelere Katılım Düzeylerinin, Mutluluk ve Yaşam Kalitesi Üzerine Olan Etkisi. Journal of Recreation and Tourism Research 5.2, p. 66-78.

Hakverdi, Ayşe E., Ayhan Akyol, and Ahmet Tolunay. 2024. Batı Akdeniz Bölgesinde uygulanan sürdürülebilir orman yönetimi sosyo-ekonomik fonksiyonlar ölçütüne ilişkin orman mühendislerinin görüşleri. Turkish Journal of Forestry, 25(1), 1-11.

Heesch, Kristiann C., Shannon Sahlqvist, and Jan Garrard. 2012. Gender differences in recreational and transport cycling: a cross-sectional mixed-methods comparison of cycling patterns, motivators, and constraints. International Journal of Behavioral Nutrition and Physical Activity, 9, p. 1-12.

Ilić, Predrag, Borko Katanić, Miljan Hadžović, Rada Rakočević, Duško Bjelica, and Amel Mekić. 2024. Barriers to Physical Activity (PA) in the Working Population: A Review. Sport Mont, 22(1).

Kara, Tayfun, and Mehmet M. Yorumazlar. 2022. Adult recreational demands and barriers. Pakistan Journal of Medical & Health Sciences, 16(06), 2022, p. 456-456.

Kaya, Sertaç, and Haldun Müderrisoğlu. 2015. Kentsel Mekânlarda Engellilerin Rekreasyonel Aktivite Kısıtlayıcıları: Düzce Kent Merkezi Örneği. III. Rekreasyon Araştırmaları Kongresi, p. 339-348.

Koŝir, Bostjan, Natascia Magagnotti, and Raffaele Spinelli. 2015. The role of work studies in forest engineering: status and perspectives. International journal of forest engineering, 26(3), p. 160-170.

Kruszyńska, Ewa, and Joanna Poczta. 2020. Difficulties limiting access to sports and recreational facilities in the city in the perceptions of service users. Sports and recreational infrastructure management policy—poznan case study. International journal of environmental research and public health, 17(5), p. 1768.

Mederski, Piotr S., Stelian A. Borz, Andreja Đuka, and Andis Lazdiņš. 2021. Challenges in forestry and forest engineering–Case studies from four countries in East Europe. Croatian Journal of Forest Engineering: Journal for Theory and Application of Forestry Engineering, 42(1), p. 117-134.

Moore, Justin B., Stephanie B. Jilcott, Kindal A. Shores, Kelly R. Evenson, Ross C. Brownson, and Lloyd F. Novick. 2010. A qualitative examination of perceived barriers and facilitators of physical activity for urban and rural youth. Health education research, 25(2), p. 355-367.

Paslı, Mehmet M., and Melda Harbalıoğlu. 2014. Factors Hindering University Students from the Participation in Recreational Activities and Trends. International Journal of Research In Social Sciences 4.3, p. 2307-227X.

Propst, Dennis B., Daniel. J. Stynes, Wen Huei Chang, and R. Scott Jackson. 1998. Estimating the local economic impacts of recreation at Corps of Engineers projects—1996. Technical Report R-98-1. Vicksburg, MS: US Army Engineer Waterways Experiment Station.

Reichert, Felipe F., Aluísio J.D. Barros, Marlos R. Domingues, and Pedro C. Hallal. 2007. The role of perceived personal barriers to engagement in leisure-time physical activity. American journal of public health, 97(3), p. 515-519.

Salimi, Mehdi, Leila Moslehi, and Amir H. Labbaf. 2021. Designing a model of cultural barriers for women's participation in leisure sports activities in sports recreation centers. Journal of Strategic Sociological Studies in Sport, 1(1), p. 1.

Sevil, Tuba. 2015. Terapatik rekreasyonel aktivitelere katılımın yaşlıların algıladıkları boş zaman tatmini, yaşam tatmini ve yaşam kalitesine etkisi. Diss. Anadolu University (Turkey).

Strehlke, Bernt. 2003. How We Work and Live, Forest Workers Talk about Themselves: A Global Account of Working and Living Conditions in the Forestry Sector (Vol. 207). International Labour Organization.

Şafak, İsmail, and Atlay U. Gül. 2012.. Orman mühendislerinin orman işlevlerine ve ormancılık faaliyetlerine verdikleri önem düzeylerinin değerlendirilmesi. Süleyman Demirel Üniversitesi Orman Fakültesi Dergisi Seri: A, 13(2), p. 123-133.

Şapcılar, Mustafa C., Figen Kalkan, and Ahmet Büyükşalvarcı. 2019. Akademisyenlerin rekreasyonel faaliyetlere katılımlarını engelleyen faktörlerin belirlenmesi: turizm fakülteleri örneği. Uluslararası Akademik Yönetim Bilimleri Dergisi 5.7, p. 9-29.

Topaloğlu, Göhkan, and Hasan Alkan. 2023. Orman teşkilatında çalışan orman mühendislerinin yeşil ürünlere yönelik algı ve tutumlarını etkileyen faktörler. Turkish Journal of Forestry, 24(2), p. 85-98.

Uzun, Fatih, Osman Pepe, and Mehmet B. Turan. 2017. Investigation of Relationship between Factors Hindering the Participation of University Students in Recreational Activities and Their Leisure Motivations Levels. Online Submission.

Yıldırımalp, Sinem. 2021. Türkiye'de Kadın Mühendis Olmak: Orman Mühendisi Kadınlar Özelinde Nitel Bir Araştırma. Fırat Üniversitesi Uluslararası İktisadi ve İdari Bilimler Dergisi, 5(1), p. 51-88.

Zivaroğlu, Müjdat , Mustafa Can Koç, İncinur Hanik, Ayşe Demet Karadağ, Harun Ayar, and Abdullah Çuhadar. 2023. Beden Eğitimi Öğretmenlerinin Rekreasyona Katılım Engellerinin İncelenmesi. Düzce Üniversitesi Spor Bilimleri Dergisi, 3(2), p. 133-141.