Smartphone Addiction and Leisure Constraints: College Students

Fikret SOYER

Faculty of Sport Sciences, Sakarya University of Applied Sciences, Sakarya, Turkey

ARTICLE INFO	ABSTRACT
	The aim of this study was to investigate the leisure constraints perceived by the university students according to the level of smartphone addiction. In the study, in order to determine the constraints faced by the participants Leisure Constraints Scale developed by Alexandris and Carroll (1997), adapted to Turkish by Gürbüz, Öncü, and Emir (2012) and in order to determine the level of smartphone addiction, Smartphone Addiction Scale developed by Kwon et al. (2013) and adapted to Turkish by Noyan et al. (2015), was used. Conventional sampling method was preferred for sample selection and face-to-face survey method was used for data collection. In the analysis of the obtained data, descriptive statistics, Independent Sample t-test, One-way ANOVA, Chi-square, Hierarchical and non-hierarchical clustering analysis were used. A total of 1298 volunteers participated in the study: 676 males (52.1%) and 622 females (47.9%). According to the results of the study, it was determined that there was a statistically significant difference in the subscales of leisure constraints in terms of individual psychology, lack of knowledge, lack of friends, lack of time and interest according to smartphone addiction levels. As a result; It was determined that the high-level smartphones addicted students perceived a high level of leisure constraints than the university students who had a low level of addictions.

1. Introduction

Time is an abstract concept and a process that the events follow each other from the past to the future and continues uninterruptedly beyond the control of the individual (Akatay, 2006). Leisure is defined as the period of time that the individual is free from all constraints for himself and others (Howe & Carpenter, 1985; Kemp & Pearson, 1997). It is also a time period that remaining from working, sleeping, eating and other compulsory jobs, inspiring a sense of happiness (Ayhan, Eskiler & Soyer, 2017; Mieczkowski, 1990). When the concept of leisure was discussed in the historical process; In ancient Greece, it was considered as a class right as the time period dealing with the superior values of the world such as knowledge and truth; In the Roman period, it was considered as a renewal tool associated with working time. In the middle ages, the area of social representation and freedom of choice has evolved into a show, luxury and waste in the late middle ages.

Excessive production, prosperity level developments and a decrease in working hours together with mechanization started with industrial revolution caused the increase in leisure of individuals (Karaküçük, 2005). However, in the first years of industrialization, instead of evaluating leisure efficiently, work has been highlighted. Lafargue argued that individuals should create leisure and evaluate this time by resting and having fun, opposing excessive work in long-term and inappropriate conditions (Lafargue, 1999). Today, the concept of leisure, which is evaluated more efficiently, has become the focus of the lives of many people. (Kurar & Baltacı, 2014). However, the increase in leisure and technological developments does not mean that leisure can be used effectively for all individuals in society.

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[1] Corresponding author's address: Faculty of Sport Sciences, Sakarya University of Applied Sciences, Sakarya, Turkey
Telephone: +90 532 547 89 87
Fax: +90 264 616 00 14
e-mail: fikretsoyer@gmail.com

Individuals face some constraints in terms of efficient using of leisure due to various reasons. Factors that prevent an individual from participating in leisure activities, reduce the number of repetitions, break the desire

to participate, and eliminate the advantage of activity services are defined as leisure constraints (Jackson, 1993; Jackson and Henderson, 1995). In the related literature, the concept of the constraints is divided into different classes. According to Francken and Van Raiij (1981) there are two types of constraints as an external and internal. The time, money, geographical distance and lack of facilities were considered as an external constraints, while personal capacities, abilities, knowledge, and interests were suggested as an internal. The leisure constraints were categorized into seven subscales by Tai (2001). They are environment condition, limited oneself, individual psychology, work, family, economical, and confidential aspects. Crawford and Godbey (1987) divided the leisure constraints into three classes: personal, interpersonal and structural constraints. Personal constraints include individual psychology, lack of knowledge, and lack of interest; lack of friends in interpersonal constraints; structural constraints represent structural and time.

The use of digital media through the use of computers, mobile phones and tablets (İlhan, 2008), which are now emerging with technological means, constitutes a major constraint in evaluating the leisure time of individuals (Hodge et al., 2012). Until recently, mobile phones providing just communication, have now been replaced by smartphones. Although smartphones offer many conveniences to our daily lives, they have also negative effects on the physical and spiritual health of people and in their relationships. The excessive use of smartphones reveals the concept of 'addiction' (Park & Lee, 2012). In the literature, it has been concluded that excessive use of smartphones leads to problematic behaviors of individuals (Palen, Salzman and Youngs, 2001; Paragras, 2005). Increasing functionality of smartphones has become a tool of dependence not only for interpersonal communication but also for other functions such as social media and digital games. Individuals have turned to smartphones instead of leisure activities as entertainment devices (Ekinci, Yalçın and Ayhan, 2019; Bian and Leung, 2014). Individuals who divide a large portion of their time into smartphones are likely to be unable to efficiently assess their leisure. In this context, in this study, the leisure constraints that university students perceive according to smartphone addiction levels were investigated.

2. Method

2.1. Research Model

In this study, one of the quantitative research methods, the screening model, was used. Data were collected by using the cross-sectional scanning model.

2.2. Participants

Sakarya University students comprised the research universe. Data were collected from 1298 students by using face-to-face survey method, determined by easy sampling method. Demographic features of the participants were given in Table 1.

Table 1. Demographic Characteristics

Variables		n	%
Gender	Male	676	52.1
	Female	622	47.9
Age	18	121	9.3
	19	234	18.0
	20	336	25.9
	21	254	19.6
	22	158	12.2
	23	88	6.7
	24	107	8.2
Class	1	309	23.8
	2	486	37.4
	3	302	23.3
	4	201	15.5
Daily Smartphone Control	Less than 10	108	8.3
	10-20 times	384	29.6

20-30 times	344	26.5	
30-40 times	212	16.3	
More than 40	50	19.3	

2.3. Data Collection Tool

In the research, leisure constraints and smartphone addiction scales were used as data collection tools. Data were obtained by adding these scales into a single form by adding them to the demographic characteristics.

2.3.1. Leisure Constraints Scale

In the study, in order to determine the obstacles faced by the participants Leisure Constraints Scale developed by Alexandris and Carroll (1997), adapted to Turkish by Gürbüz and Karaküçük (2008) was used. The scale comprised of 18 items and 6 sub-scales. Sub-dimensions; (1) individual psychology, (2) lack of information, (3) facility, (4) lack of friends, (5) lack of time, and (6) lack of interest. Scale rating are in order from 4 to 1 in sequential form (very Important and absolutely Unimportant).

2.3.2. Smartphone Addiction Scale

In order to determine the level of smartphone use, one-dimension and ten items Smartphone Addiction Scale, developed by Kwon et al. (2013) and adapted to Turkish by Noyan et al. (2015), was used. Scale rating are in order from 6 to 1 (Strongly Agree and Strongly Disagree).

2.4. Data Analysis

In the analysis of the data, as well as descriptive analyzes the t-test, one-way variance and chi-square analyzes were used to analyze the differences between variables. In addition, Hierarchical and Non-Hierarchical Clustering analysis were used in order to group the participants according to smartphone dependency levels (Tabachnick and Fidell, 2015). In this study, the K-mean analysis used in the Non-Hierarchical Cluster analysis (in determining the number of clusters) and in the Hierarchical Cluster analysis the Ward cluster algorithm method was used. This method was used to identify the groups when the researcher does not already know the number of groups and then to analyze the group membership (Çoluk, Şekercioğlu & Büyüköztürk, 2014; Nakip, 2006).

Table 2. Research Variables Descriptive Statistics

Variables	Cronbach α	Mean	Sd.	Skewness	Kurtosis
Smartphone addiction	.875	31.19	10.36	.273	-.557
Individual psychology	.683	2.65	.67	-.306	-.121
Lack of information	.783	2.74	.73	-.447	-.136
Facility	.745	2.92	.69	-.529	.092
Lack of friends	.759	2.45	.72	-.089	-.388
Time	.537	2.75	.60	-.523	.283
Lack of interest	.638	2.61	.69	-.325	-.163

In addition to the mean and standard deviation values of the research variables, the variables were evaluated by considering the skewness and kurtosis values of the data if they had a normal distribution. The findings showed that the data were close to normal distribution and parametric analyzes could be applied. On the other hand, when the internal consistency coefficients of the variables were examined, it was determined that Cronbach α values ranged from .875 to .377 (Altunışık, Coşkun, Bayraktaroğlu & Yıldırım, 2012; Büyüköztürk, 2016).

3. Results

Firstly, the sample was divided into groups based on the levels of smartphones addiction. To classify the students participating in the research; Hierarchical Clustering Analysis was performed and it was seen that the consumers could be classified in two clusters with the help of aggregation table and tree graphic. Then by using the 'Range of solutions' command the participants' clusters were determined (Nakip, 2006). In this

context, as it was observed that there were irregular deviations in the cluster distribution when the number of clusters were increased and / or decreased, so, it was decided that the number of ideal clusters was two. Finally, Non-Hierarchical Clustering Analysis was performed to determine the final cluster memberships. Table 3 shows the number of persons and the size of clusters.

Table 3. The Distances between Cluster Sizes and Cluster Centers

Clusters	Number of persons	Size of Cluster (%)	Distances Between Cluster Centers	
			Cluster 1	Cluster 2
Cluster 1	695	53.5		17.213
Cluster 2	603	46.5	17.213	
Total	1298	100		

According to Table 3, there were 695 (53.5%) participants in the first cluster and 603 (46.5%) participants in the second cluster. The distance between these cluster centers is 17.213. In addition, it was determined that the difference between the variables, as a result of the one-way analysis of variance in the analysis, was significant at the level of 0.01. According to the results of clustering analysis, two different groups with low and high addiction levels were determined.

Table 4. The comparison of the Smartphone addiction level and usage time

			Daily Smartphone Usage Time					X^2	Sd.	p
			1-2 hours	2-3 hours	3-4 hours	5-6 hours	6 <hours			
Smartphone Addiction Level	Low	n	194	169	129	80	123			
		%	70.8	65.3	55.4	38.3	38.1			
	High	n	80	90	104	129	200	98.025	4	.001
		%	29.2%	34.7	44.6	61.7	61.9			
	Total	n	274	259	233	209	323			
		%	%	100.0	100.0	100.0	100.0			

It was seen that the groups of participants determined differ depending on the average daily use of smartphones. It was observed that a significant majority of participants with high level of smartphone addiction use the phone for an average of 5 hours and more per day.

Table 5. Gender related difference analysis

Variables	Gender	Mean	Sd.	t	p
Individual Psychology	Male	2.61	.68	-2.212	.027
	Female	2.69	.66		
Lack of Information	Male	2.71	.74	-1.851	.064
	Female	2.78	.72		
Facility	Male	2.96	.70	1.880	.060
	Female	2.89	.70		
Lack of Friends	Male	2.42	.68	-1.560	.119
	Female	2.48	.76		
Time	Male	2.74	.61	-.438	.661
	Female	2.75	.60		
Lack of Interest	Male	2.62	.68	.605	.545
	Female	2.60	.71		

As seen in Table 5; in terms of perceived leisure constraints, the significant differences were determined between males and females in the sub-dimension of individual psychology (p <.05). It was revealed that women have higher score than men in the dimension of individual psychology. This result shows that the

female participants perceive individual psychology constraint more than males in terms of perceived leisure constraits.

Table 6. According to Smartphone Addiction the Difference Analysis

Variables	Smartphone Addiction	Mean	Sd.	t	p
Individual Psychology	Low	2.58	.68	-3.863	.001
	High	2.72	.65		
Lack of Information	Low	2.68	.76	-3.193	.001
	High	2.81	.69		
Facility	Low	2.93	.72	.154	.878
	High	2.92	.66		
Lack of Friends	Low	2.36	.74	-4.703	.001
	High	2.55	.69		
Time	Low	2.70	.63	-2.839	.005
	High	2.80	.57		
Lack of Interest	Low	2.54	.72	-4.195	.001
	High	2.70	.65		

When the leisure constraints perceived by the participants in terms of smartphone addiction levels were evaluated, in the individual psychology (t = -3.863), lack of knowledge (t = -3.193), lack of friends (t = -4.703), lack of time (t = -2.839) and in lack of interest sub-dimensions (t = -4.195) the statistically significant differences were determined (p <.01). On the other hand, it was determined that there was no significant difference in the facility sub-dimension according to smartphone addiction level (p> .05). Among the participants in the research, it was determined that the individuals with higher levels of smartphone addiction perceived the sub dimensions of the individual psychology, lack of knowledge, lack of friends, lack of time, and lack of interest as the leisure constraint higher than the students with low smartphone addiction.

Table 7. Age-related difference analysis

Variables		Sum of Squares	df	Mean Square	F	p	Difference
Individual Psychology	Between Groups	7.143	6	1.191	2.674	.014	18-20, 21, 22, 23; 19-23
	Within Groups	574.433	1290	.445			
Lack of Information	Between Groups	7.017	6	1.170	2.205	.040	18-20, 21, 22; 19-22
	Within Groups	684.136	1290	.530			
Facility	Between Groups	6.540	6	1.090	2.273	.035	18-19, 22; 20-22; 22-24
	Within Groups	618.461	1290	.479			
Lack of Friends	Between Groups	8.183	6	1.364	2.639	.015	18-20, 23; 19-20; 20-21, 23; 21-22
	Within Groups	666.580	1290	.517			
Time	Between Groups	6.092	6	1.015	2.828	.010	18-20, 21, 22, 23; 19-21, 22, 23
	Within Groups	463.121	1290	.359			
Lack of Interest	Between Groups	2.774	6	.462	.968	.445	-

Within Groups	615.895	1290	.477

According to Table 7 it was determined that there was no statistically significant difference in the lack of interest subscale of leisure barriers according to age (p> .05). On the other hand, it was determined that there were statistically significant differences according to age in individual psychology, lack of knowledge, facility, lack of friends and time subscales of leisure barriers scale (p <.05). When the results related to the individual psychology were examined, statistically significant difference was determined between the individual psychology scores of individuals aged 18 and 21, 22, 23 also, between the individuals of the age group of 19 – 23. When the findings related to the lack of knowledge were examined, statistically significant difference was determined between the individuals aged 18 and 21, 22, 23 also, between the individuals of the age group of 19 – 23. When the findings related to the facility sub-dimension were examined, statistically significant difference was determined between the mean scores of the individuals aged 18 and 19, 22 also, between the individuals aged 22 – 20, 24. When the findings related to the lack of friends were examined, statistically significant difference was determined between the mean scores of the individuals aged 18 and 20, 23; between 19 – 20; 20-21, 23 and between 21-22 age groups. In addition, when the findings of time sub-dimension were examined, statistically significant difference was determined between the time scores averages of 18-year-olds and 20, 21, 22 and 23-year-olds, and time averages of 19-year-olds and the mean scores of individuals at the age of 21, 22, and 23 years.

4. Discussion and Conclusion

Time management is very important for users who use tools such as smartphones. Misuse and overuse of the smartphones cause negative consequences such as addiction (Balta and Horzum, 2008). Individuals, especially the new generation, act as dependent on technological tools for leisure assessment (Strasburger, Wilson and Jordan, 2009). Although these devices are a technological tool that makes life easier for individuals, they may cause negative effects on individuals in some aspects. Individuals who spend most of their time with smartphones are likely to encounter some obstacles in their leisure time. In this direction, the main purpose of this study was to investigate the leisure barriers perceived by the university students according to the level of smartphone addiction.

As a result of the research, it was determined that the individuals with a high level ofs smart phone addiction had a higher perceptions of barriers in terms of individual psychology, lack of knowledge, lack of friends, lack of time and interest. This result suggests that individuals with high levels of smartphone addiction face more barriers to leisure activities than individuals with low addiction levels. Individuals with a high level of addiction can cause problems in terms of time management. In the research, it is seen that the majority of individuals who have a high smart phone addiction spend more than 5 hours a day with smart phone. This situation may cause the concept of leisure not to be sufficient due to the long-term usage of smart phone and thus individuals encounter obstacles in participation to the leisure activities. In a study by Thulin and Vilhelmson (2007) on young individuals in Germany, it was concluded that smartphones changed the individual planning and timing structures. This finding is consistent with this study. In addition, although it is not a direct smartphone there is a positive correlation between addiction level and duration of internet usage and digital gaming addiction, which are among the other types of technology addiction (Balta and Horzum, 2008; Çakır, Ayas & Horzum, 2011). The increase in the use of technology is based on focusing on the tool that forms the basis of addiction, rather than on other jobs or leisure activities. This will be the case in the smartphone.

As the level of smartphone addiction increases, the increase in the number of leisure barriers is a situation that can be explained by the criteria of technology dependence in the literature. According to Griffiths, as the level of addiction increases, the attention, tolerance, conflict and relapse of the vehicle that the individual is dependent on increases (Horzum, Güngören and Kaymak, 2018). When these four features are taken into account in terms of smartphones, smart phones attract attention are the most important activities of life and dominate thoughts and behaviors. In this respect, it is possible to spend time with smartphones in leisure time. Tolerance is the continuation of smartphone usage time and loss of control over time. In this case, leisure activities may cause obstacles. Conflict is the ability of an individual to perceive leisure barriers in terms of interest and friend by entering into a clash with his close circle and himself by using a smart phone.

Recurrence can be explained as becoming an unhappy imagining the usage or waiting for the moment of using a smartphone when you do not use it. In this case, smartphone addiction is a crucial factor in perceiving the leisure barriers. Nowadays, both the scope of information and technological developments are moving at a great pace, and this is seen to cause changes in the society with the latest developments of the internet based intelligent tools (Kwon, 2013). Smartphones have changed the way people communicate with others, accessing to information, entertaining, and managing their daily lives (Park, Kim, Shon and Shim, 2013). In this respect, smart phone addiction is also associated with sleep quality, daily rhythm and personality structures (Demirhan, Randler & Horzum, 2016).

In the research findings, it was determined that there was a significant difference in the sub-dimension of the individual psychology of leisure barriers according to gender, and females in this sub-dimension faced more obstacles than males. Restrictions on women's participation in leisure activities have been seen since ancient times. As of childhood, leisure activities were directed towards boys and it was not appropriate for girls to participate in such activities. Some researches show that there are various gender differences and women face more barriers to participating in leisure activities than men. It is thought that females can get more obstacles than males as they cannot get enough support from their families, also the society's excessive pressure on women and little opportunities they are given caused them not to participate in leisure activities freely (Ayhan et al., 2018; Raymore, Godbey and Crawford, 1994; Hudson, 2000; Henderson, 1995). In the related literature, there are studies supporting this result (Alexandris and Carrol, 1997; Tolukan, 2010; Soyer et al., 2017).

In the findings of the study, it was determined that there was a significant difference in the sub-dimensions of individual psychology, lack of knowledge, facility, lack of friends and time The differences in the responsibilities, psychological status and income levels of can be shown as a reason for this situation. There are studies that support these results in the literature (Amin et al., 2011; Alexandris and Caroll, 1997; Ekinci, Kalkavan, Ustun and Gundüz, 2014).

As a result, it was determined that university students who were highly addicted to smartphones faced obstacles in participating leisure activities. In order to reduce addiction, parents should take measures to protect their children from an early age, awareness raising trainings by the relevant experts in educational institutions can be given, the artistic, sportive and cultural activities in universities can be increased and students should evaluate their energy in these areas.

5. Limitations of the Study and Further Research

The research has some limitations. At the beginning of these limitations, there is a measurement of smart phone addiction by a scale. Measurements of mind waves, biological other measurements (Randler, Horzum, & Vollmer, 2014) the measurements based on smartphone usage, time and data can be made in addiction measurements. In addition, studies were carried out with the students of Sakarya University. In order to obtain more generalizable data, similar or different studies can be performed by collecting data from students of different universities. In the study, the data of smartphone addiction was taken as a discontinuous variable. In future studies, structural equation modeling can be performed with continuous data. In this model studies, smart phone addiction can be examined with biological, psychological, and demographic individual differences.

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