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### Digital Leisure Time Tendency Scale: Validity and Reliability Study

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**Digital Leisure Time Tendency Scale: Validity and Reliability Study**Fatih Harun Turhan<sup>1</sup>, Ömer Faruk Tutar<sup>2</sup>**ARTICLE INFORMATION**

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**Volume:** 4, No: 2**Pages:** 467-478**ABSTRACT**

This study aims to determine the validity and reliability of the "Digital Leisure Time Tendency Scale (DLTTS)". The DLTTS was applied to a total of 1354 people, 648 women and 706 men. The Key Components Factor Analysis, which was carried out following the direct oblimin conversion of the participants' tendency scores to digital leisure activities in order to test the validity of the factor structure of the DLTTS, supports the 4-factor structure and explains 56.52% of the scale. The DLTTS consists of 4 sub-dimensions and 18 items in total, namely "Communication" (6 items), "Social Interaction" (5 items), "Psychological Tendency" (4), and "Application Usage" (3 items) sub-dimensions. Participants attitudes towards digital leisure activities are evaluated on a 5-point Likert-type scale. The KMO value of the scale was found to be 0.866. Cronbach's Alpha internal consistency coefficient was calculated for four sub-dimensions and the total scale. Accordingly, Communication = .79, Social Interaction = .78, Psychological Tendency: .80, and Application Usage = .65. The total reliability coefficient of the scale is quite reliable ( $\alpha = .83$ ). In conclusion, the Digital Leisure Time Tendency Scale reveals that it is a valid and reliable scale for assessing the digital leisure time Tendency of individuals over the age of 18.

**Keywords:** Digital Leisure Time, Reliability, Tendency, Validity

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## INTRODUCTION

In the 21st century, digital culture has had a major impact on people's leisure activities, and our daily leisure life is intertwined with social media (Redhead, 2016; Silk et al., 2016). In today's technologically advancing world, effective time management has become increasingly vital and deserves careful consideration from individuals (Sezer & Çelikel, 2021). Recently, media technology has influenced and expanded the dimensions of our life experiences. Among individuals, diversity in the use of social media can be observed for various reasons (Çiftçi & Özavcı, 2023). In particular, the Internet, wireless connectivity, digitalization, interactive web interfaces, and active social media have influenced our leisure activities (Choi & Dattilo, 2017). Research has shown that the use of technology can increase social engagement and reduce social isolation (Chopik, 2016; Czaja et al., 2018).

Digital tools used in digital leisure time; are not limited to the Internet or social media; It represents the many devices or mediums, social networks, and communication applications associated with the method of creating, sharing, and distributing information (Choi & Dattilo, 2017). For example, there is a system that provides access to many social network-based applications, which are Android-based smartphones. For this reason, mobile phones and entertainment (spending time) have become increasingly relevant (Leep, 2014). In the literature, it is observed that individuals use digital networks and platforms for purposes such as spending their leisure time, education, entertainment, socialization, and keeping up with the agenda (Turhan & Canpolat, 2023). Mobile phones are used in almost every leisure time activity and are becoming a daily leisure activity. Moreover, cell phone use can also happen during other free time activities, which can cause a multitasking effect. Research shows that mobile phone use is associated with the results that certain leisure activities can produce; these outcomes include physical fitness, boredom relief, and stress reduction (Lepp, 2014; Leung, 2008). It would not be wrong to say that mobile phones and all vehicles equipped with digital technology have the same effect. In this context, considering that digital tools generate digital leisure activities in daily life, it is thought and aimed that this leisure time evaluated with digital tools should also be evaluated, which is expected to be accepted by you, the readers.

Researchers state that our social worlds (including our leisure time) are becoming more and more digital, and that digitalization will become part of our daily lives (Hine, 2015; Lupton, 2015; Boyd, 2012). Social media and social networks used by individuals in their leisure time are seen as a means of entertainment by individuals and become widespread (Karaş, 2019). Considering the attractiveness of social media today, it can be said that almost most people are trying to prove themselves in the virtual environment with social media and digital tools and to take part in the social class order. In particular, the fact that Generation Z was born into the digital age and grew up in this age is a fact that they have an important place in this interaction (Kapil & Roy, 2014). Social media tools, along with numerous digital applications and platforms, are used by individuals for multiple purposes such as self-fulfillment, building digital social capital, entertainment, leisure, forming friendships, and keeping up with current events. Therefore, understanding to what extent this digital transformation consumes individuals' leisure time is of importance for this study.

### **Definition and Characteristics of Digital Leisure Time**

While the definition of leisure time is not precise, the boundaries between work and leisure time are not always clear. According to Hurd and Anderson (2011), leisure time can be defined as time leisure from obligations, work, and the tasks necessary for existence, such as sleeping and eating. In this period, the methods used by individuals in their time are renewed with the change of time. These days when we have started to blend with technology, the Tendency to technological tools has gained speed in leisure time. For this reason, the definition of leisure time is now evolving towards a digitized definition.

The fact that people can spend time at home, at work, outside at any time by participating in many virtual activities with smart devices without spending too much power, it is seen that electronic applications, which have become a part of their daily lives, have revealed a new form of leisure time evaluation and this new form of leisure time is reflected in the field literature as "digital leisure time" or "digital leisure time" (Akođlan Kozak & Özkerođlu, 2018; Güncan, 2021). Nimrod and Adoni (2012) have studied and attempted to conceptualize digital leisure with the aim of expanding and understanding digital leisure activities. By examining digital-leisure time about time, action, and experience, which are fundamental aspects of traditional leisure activities, the authors have argued that all the fundamental aspects of this concept apply to digital-leisure time. The widespread use of digital freelance apps and spaces allows companies and users to take advantage of the data collected during their leisure time experiences (hence, the user is working in their leisure time). Therefore, digital leisure time is spent engaging with digital apps and spaces while relaxed (Schultz & McKeown, 2018).

### **The Relationship Between Digital Leisure and Digital Literacy**

Digital literacy refers to a skill set that individuals need in order to function effectively in digital environments. It not only encompasses the mere ability to use or operate digital devices but also includes cognitive, sociological, and emotional skills (Eshet, 2004). With the proliferation of digital technologies in every aspect of our lives, digital literacy has become an essential skill that young people need to possess. Young people are our future generations, and in a world mediated by digital technologies, digital literacy is crucial for their successful participation in digital environments. As a result, educational institutions are incorporating digital technologies into their curricula to develop digital literacy among young people in formal education settings.

Digital literacy can be taught (Ng, 2012) and developed through school education (Hague, 2010), but it can also evolve through everyday practices. Due to their daily exposure to digital technologies, young people, referred to as the digital generation, have developed a certain degree of digital literacy and naturally engage in digital leisure activities (Oblinger, 2003; Prensky, 2001; Tapscott, 2008).

Casual games are a new generation of video games that are easy and simple to play (Juul, 2009) and can be played using portable technologies such as mobile phones and tablets. With their simplicity and easy accessibility, casual games have become a popular activity among young people. Considering the recent popularity of these games, it can be said that these games have a significant impact on the digitization of leisure time.

As a result of all these reviews, in the literature, numerous scales related to people's attitudes towards leisure time activities involving digital devices have been observed. However, upon reviewing the literature, no scale related to digital leisure time specifically has been encountered. In this context, the aim is to develop a scale to assess adult individuals' tendencies in digital leisure time, using the concept of digital leisure time, which has recently emerged in the literature.

## **METHOD**

### **Research Design**

The aim of the study is to develop a valid and reliable measurement instrument to assess the inclination of adult individuals over the age of 18 to digital leisure time activities instead of physical leisure time activities. In addition, this study was supported by the ethics committee decision dated 19.06.2023 and numbered 2023/05-36.

The research is in the relational screening model, which is one of the general screening models and is descriptive research. The screening model is a type of research in which a

situation that has occurred before or is currently existing is tried to be described as it is (Karasar, 2014). In order to ensure the homogeneous participation of adult individuals in the sample selection, members from various occupational groups were selected using simple random sampling method and the scale was administered. The development of the Digital Leisure Tendency Scale (DLTTS) was carried out with the voluntary participation of +18 (32,5±1.44) individuals in the study. A total of 97 questions were created by taking the opinions of 1 linguist who is an expert in the field of research and 4 experts in the field of regression and sports sciences. Items with similar meanings in the item pool consisting of expert opinions were removed by the researchers and the final item pool consisting of 57 statements was created. In the last stage, the pool consisting of 57 items was sent to 3 different experts again and their opinions were taken, and it was prepared in a 5-point Likert type and presented to the individuals to answer.

**Participants**

The sample of the study consisted of 648 women and 706 men and a total of 1354 individuals. In the factor analysis, it is recommended that the number of study groups should be five times the number of scale items (Büyüköztürk, 2014). As a result of the data obtained from the individuals, the results of exploratory factor analysis (EFA) and reliability analysis were obtained. Then, the second stage was passed, and the results of confirmatory factor analysis (CFA) were tried to be reached to determine the validity coefficients of the study. In this stage, a total of 647 individuals, including 309 women and 338 men, were reached. When the participation numbers of the study were examined, the numbers recommended in the literature in both the first phase (EFA) and the second phase (CFA) were reached.

**Table 1.** Descriptive Information About the Research Group

Variable	Groups	N	%
Gender	Female	309	47,8
	Male	338	52,2
	<b>Total</b>	647	100,0
Age	18-22 Ages	129	19,9
	23-27 Ages	155	24,0
	28-32 Ages	169	26,1
	33-37 Ages	127	19,6
	38 and higgest	67	10,4
	<b>Total</b>	647	100,0
Daily Digital Device Usage Duration	0-1 Hours	37	5,7
	1-2 Hours	97	15,0
	2-3 Hours	187	28,9
	3> Hours	326	50,4
	<b>Total</b>	647	100,0
Daily Free Time Duration	0-1 Hours	38	5,9
	1-2 Hours	78	12,1
	2-3 Hours	169	26,1
	3> Hours	362	56,0
<b>Total</b>	647	100,0	

**Analysis of Data**

In the measurement tool development studies, various sources related to sample size have expressed different sample sizes. Çokluk, Şekercioğlu, and Büyüköztürk (2014), citing Pallant, 2005 and Kline, 1994, reported that reaching 10 times the number of their samples would be sufficient for reliability.

In the analysis of the data in the study, SPSS 24 package program was used for EFA and reliability tests, while IBM Amos 24 package program was used for CFA analysis. In EFA analyses, substances with a factor load of 32 were not accepted. As a result of CFA analyses, it was ensured that the items of the scale were finalized.

**FINDINGS**

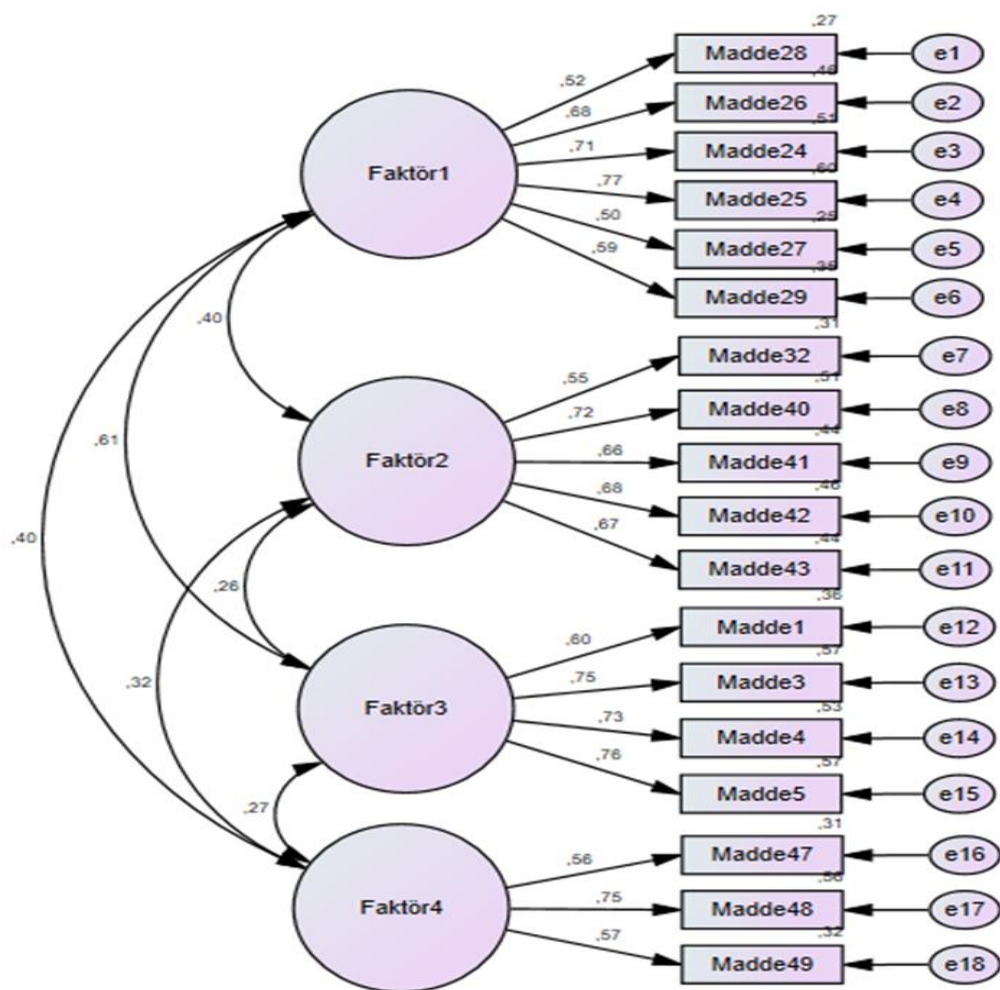
In this section, the research data has been analyzed, presented in tabular form, and interpreted.

**Table 2.** Digital Leisure Time Tendency Scale (DLTTS) EFA Results

Item No	Items	$\alpha$	Variance Explained	Factor Loads
<b>Factor1</b>		<b>,798</b>	<b>27,707</b>	
	<b>Communication</b>			
28	Using digital tools in my leisure time helps me connect with friends and family.			,702
26	I think that using digital tools during my leisure time has a positive effect on my social connections.			,662
24	I think that digital leisure time activities have a positive effect on my social relationships.			,624
25	Using digital tools in my leisure time allows me to socialize.			,511
27	Using digital tools in my leisure time does not disrupt my daily work.			,506
29	I think that digital leisure activities have a positive impact on my physical and mental health.			,469
<b>Factor2</b>		<b>,789</b>	<b>12,767</b>	
	<b>Social Interaction</b>			
32	I use social media apps in my leisure time.			,690
40	I follow the current sharing of my friends through digital applications in my leisure time.			,682
41	I make sharing through digital applications in my leisure time.			,681
42	I chat with my friends through digital apps in my leisure time.			,621
43	I send interesting videos to my friends that I watch or see on digital apps in my leisure time.			,519
<b>Factor3</b>		<b>,802</b>	<b>8,452</b>	
	<b>Psychological Tendency</b>			
1	I feel energetic in the leisure time I spend using digital tools.			,733
3	The leisure time I spend with digital tools makes me feel more comfortable.			,689
4	The leisure time I spend with digital tools allows me to relax.			,686
5	The leisure time I spend with digital tools makes me feel happy.			,565
<b>Factor4</b>		<b>,651</b>	<b>7,594</b>	
	<b>Application Usage</b>			
47	I use one or more news site apps on my digital devices.			,742
48	I use one or more sports news site apps on my digital devices.			,549
49	I use one or more exercise apps on my digital devices.			,505
<b>KMO: ,866</b>		<b>Total Explained Variance: 56,52</b>		<b>General Cronbach's Alpha: ,839</b>

In the study, the KMO (Kaiser-Meyer Olkin) value was examined to determine whether the answers given by the participants were appropriate or not. As a result of EFA (exploratory factor analysis) conducted in line with the answers given by the participants, the KMO value was determined as .866. Tavşancıl (2010) stated that if the KMO value was above 0.50, the analysis was acceptable. In the EFA analysis, the highest factor load of 1.00 and the lowest 0.32-factor load for factor loads were taken into account by using the Direct Oblimin technique to determine the factor loads of the substances (Tabachnick & Fidell, 2007). In the case of more than one-factor load on the same substance, items with the same factor lower than 0.10 were removed from the analysis (Büyüköztürk, 2011). As a result of the EFA analysis, an acceptable structure consisting of 18 items with 4 factors emerged, taking into account the appropriate factor loads.

Figure 1. DLTTTS's Path Diagram



CMIN/DF=2,283, GFI=.951, CFI=.951, AGFI=.935, NFI=.916, RMSEA=.045

It is seen that the communication sub-dimension of DLTTTS consists of items 28, 26, 24, 25, 27, and 29 and the factor loads vary between .702 and .469, the Cronbach's alpha value is .798 and the percentage of variance described is 27.707. It was determined that the social interaction sub-dimension consisted of items 32, 40, 41, 42, and 43, and the factor loads ranged from .690 to .519, the value of Cronbach's alpha was .789 and the percentage of variance described was 12.767. It is seen that the digital psychology sub-dimension consists of items 1, 3, 4, and 5 and the factor loads vary between .733 and .565, the value of Cronbach's Alpha is .802 and the percentage of variance described is 8.452. Finally, it was determined that the

application usage sub-dimension, which is the 4th factor, consisted of items 47, 48, and 49 and the factor loads ranged from .742 to .505, Cronbach's Alpha value was .651 and the announced variance percentage was 7.594.

The total explainable variance of DLTTTS is 56.52 and the overall Cronbach's Alpha is .839. Following the formation of factor loads and factor structures determined by EFA analysis, the conformity structure of SHTÖ was tested by performing confirmatory factor analysis (CFA) with existing substance structures using IBM Amos 24 program (Hinkin, 1998). First of all, the structural diagram of the scale is plotted graphically in the IBM Amos program.

**Table 3.** Table of Compliance Indices by CFA

Adjusted Compliance Indexes	Excellent Compliance Values	Acceptable Compliance Values
$\chi^2/sd$	$0 \leq \chi^2/sd \leq 3$	$3 \leq \chi^2/sd \leq 5$
GFI	$.95 \leq GFI \leq 1.00$	$.90 \leq GFI \leq .95$
AGFI	$.90 \leq AGFI \leq 1.00$	$.85 \leq AGFI \leq .90$
CFI	$.97 \leq CFI \leq 1.00$	$.95 \leq CFI \leq .97$
NFI	$.95 \leq NFI \leq 1.00$	$.90 \leq NFI \leq .95$
RMSEA	$.00 \leq RMSEA \leq .05$	$.05 \leq RMSEA \leq .08$

Since the CFA analysis showed that the scale had acceptable goodness of fit indices, no covariance was required whatsoever. When the literature was examined, researchers revealed many compliance indices on model compliance. The compliance index table determined by Schumacker and Lomax (2004) is indicated in Table 3.

**Table 4.** CFA-Related Compliance Goodness Indices of the Digital Leisure Time Tendency Scale

Compliance Index	Value	Compliance Status
$\chi^2/sd$	2,283	Perfect Compliance
RMSEA	,045	Perfect Compliance
GFI	,951	Perfect Compliance
AGFI	,935	Perfect Compliance
NFI	,916	Acceptable Compliance
CFI	,951	Acceptable Compliance

When the good compliance indices of the digital leisure time Tendency scale related to CFA were examined, it was found that  $\chi^2/sd$ , RMSEA, GFI, and AGFI indices were in perfect compliance, and NFI and CFI indices were in acceptable compliance. These ratios include the values accepted in the literature (Schumacker and Lomax, 2004).

**Table 5.** DLTTTS Factor and Substance Distribution

Item No	Items
Factor1	Communication
1	Using digital tools in my leisure time helps me connect with friends and family.
2	I think that using digital tools in my leisure time has a positive impact on my social connections.
3	The leisure time I spend with digital tools makes me feel more comfortable.
4	The leisure time I spend with digital tools allows me to relax.
5	The leisure time I spend with digital tools makes me feel happy.
6	I think that digital leisure activities have a positive impact on my physical and mental health.



<b>Factor2</b>	<b>Social Interaction</b>
7	I use social media apps in my leisure time.
8	I follow the current sharing of my friends through digital applications in my leisure time.
9	I make sharing through digital applications In my leisure time.
10	I chat with my friends through digital apps in my leisure time.
11	I send interesting videos to my friends that I watch or see on digital apps in my leisure time.
<b>Factor3</b>	<b>Psychological Tendency</b>
12	I feel energetic in the leisure time I spend using digital tools.
13	The leisure time I spend with digital tools makes me feel more comfortable.
14	The leisure time I spend with digital tools allows me to relax.
15	The leisure time I spend with digital tools makes me feel happy.
<b>Factor4</b>	<b>Application Usage</b>
16	I use one or more news site apps on my digital devices.
17	I use one or more sports news site apps on my digital devices.
18	I use one or more exercise apps on my digital devices.

Table 5 shows the final available version of the DLTS child dimensions and item numbers. When the final version of the scale is examined, a structure consisting of 4 sub-dimensions and 18 items with proven validity and reliability emerges. There is no inverse substance on the scale.

## **DISCUSSION**

When applying the scale item pool, the definition of digital leisure time is made, and "digital leisure time is ..... I know that it means" was added and 89% of the participants selected the "agree" and "strongly agree" options to this statement, indicating that the participants knowledgeably participated in the study.

While the number of items included in the factor analysis was 57, expressions with item factor loads below 30 were removed from the item pool. Removal of items with low factor loads from the item pool is a method used and recommended in other scale development studies in the literature (Dağ, 2002; Kalaycı, 2005). The suitability of the sample to be examined for factor analysis can be determined by KMO and Barlett's test. In our data set, the KMO value was found to be .866, and values between 0.80-0.90 mean that it is good for the sample size (Şencan, 2005).

When the findings obtained as a result of the study were examined, as a result of the basic components factor analysis to determine the structural validity of the scale, the 18-item scale explained by 4 factors with 56.2% was reached. Principal Components Analysis (PCA) is an analysis used to reduce the size of high-dimensional data stacks (Jolliffe, 2002). In addition, it is considered sufficient that the variance described in the studies conducted on the axis of social sciences is between 40% and 60% (Tavşancıl, 2014). Eigenvalue numbers with values greater than 1 were taken into account to explain the suitability of the scale to the multidimensional structure. It was seen that there were 4 factors with a value greater than 1 in total. This situation reveals the 4-factor structure. These emerging factors were named "Communication" (6 items), "Social Interaction" (5 items), "Psychological Tendency" (4), and "Application Usage" (3 items) sub-dimensions for the semantic content of the items collected under the factors.

When the findings obtained with CFA were examined, the compliance index values of the scales according to the compliance values:  $\chi^2/sd$  ratio was calculated as 2.283. A ratio of

$3 \leq$  indicates perfect compliance (Kline, 2005). RMSEA=0.45. These values between 0.05 and 0.10 correspond to the perfect compliance criterion (Schermelleh, Moosbrugger, 2003). GFI=0.951, CFI=0.951, AGFI=0.935, NFI=.916, and an index above 0.95 corresponds to perfect compliance (Tabachnick & Fidell, 2001).

Cronbach Alpha analysis method was used to test the reliability level of the scale. The results of the analysis conducted to test the reliability of the scale show that the coefficient values vary between .65 and .80. According to Kayış (2006), reliability in Cronbach's Alpha ( $\alpha$ ) coefficient at scales of .60 and above is considered reliable. According to Devellis (2003), it can be stated that the scale data are consistent provided that the acceptable value is above 0.70. The fact that the total internal consistency coefficient of the scale is high (.83) shows that the items on the scale consist of items that are consistent with each other and aim to evaluate the elements of the same property (Tezbaşaran, 1997).

## Conclusion

It is seen that the communication sub-dimension of the digital leisure time Tendency scale consists of items 1, 2, 3, 4, 5, and 6, the social interaction sub-dimension consists of items 7, 8, 9, 10, and 11, the digital psychology sub-dimension consists of items 12, 13, 14 and 15 and the application usage sub-dimension consists of items 16, 17 and 18. In the scale study, a 5-degree Likert type was used. In the Likert type, the lowest score is "strongly disagree" and the highest score is "strongly agree". As a rating scale for the evaluation of arithmetic means of the Likert type scale; Using the formula "Gap Width = Array Width/Number of Groups", point ranges were determined as  $4/5 = 0.80$  (Tekin, 1996). The obtained data reveal that the "Digital Leisure Time Tendency" scale is valid for assessing adult digital leisure time Tendencies over 18 years of age. The low scores to be taken from the scale indicate that the digital leisure time Tendency level is low, and the high scores indicate that the digital leisure time Tendency levels are high.

The Digital Leisure Time Tendency Scale is considered a valuable tool for academics, educators, and psychologists working in the field of science to better understand the effects of digital technologies on our daily lives and to manage these effects. The scale is also thought to assist in conducting more in-depth research and helping society adapt to the process of digitization.

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