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Staying Active in the Digital Age: The Relationship Between Digital Leisure Time Preferences and Motivation to Participate in Physical Activity Among Sports Science Students

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ABSTRACT

The main objective of this study was to examine the relationship between the digital leisure time orientations of students at the Faculty of Sports Sciences and their motivation to participate in physical activity. In this study, a correlational survey model was used as a quantitative research method to explain the problem situation, and the sample was determined using simple random sampling. The data collection tools used were the “Physical Activity Participation Motivation Scale” and the “Digital Leisure Time Orientation Scale.” The obtained data were analyzed using the Jamovi statistical program; during the analysis process, the assumptions of normality and homogeneity were tested. When the data showed a normal distribution, parametric tests such as the t-test and Pearson correlation analysis were used; when the assumption of normal distribution was not met, the Kruskal-Wallis test was used. The findings revealed that some trends related to digital leisure time use (particularly psychological reasons and app usage) differed by gender, but overall trends were similar. Furthermore, no significant difference was found based on monthly income level. However, a moderate, positive, and significant relationship was found between students' digital leisure time orientations and their motivation to participate in physical activity. In conclusion, although partial differences were observed based on the gender variable, it was determined that students' general tendencies were similar and that there was a significant relationship between their digital leisure time orientations and their motivation to participate in physical activity.

Keywords: Digital leisure, physical activity, motivation, student

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INTRODUCTION

When considering all the leisure time individuals have left over from their mandatory responsibilities, such as work and education, their need for leisure activities is striking. Leisure time has become a necessity for individuals to set aside time for themselves throughout life and engage in activities that allow them to rejuvenate themselves. When considering the lifespan of today's human beings, it is known that between 32% and 40% of the time of people living in Europe and Turkey is shaped as leisure (Küçüktopuzlu et al., 2003). Leisure is an important period during which individuals set aside time for activities specific to themselves, beyond their mandatory responsibilities (Ağaoğlu & Boyacı, 2013). The concept of leisure has been extensively studied by Robert Stebbins over the past 50 years, and his work has inspired a vast amount of published output, providing a perspective for the conceptual framework of this concept (Veal, 2019). In this context, Stebbins has categorized leisure into three categories. These are: serious leisure time, everyday leisure time, and project-based leisure time. How individuals engage in these activities reveals their social identity and sense of belonging through ethnographic methods. When we examine the category of serious leisure time, it is noteworthy that not only are the meanings of participants taken into account, but also how individuals evaluate it in terms of their careers (Puddephatt, 2007). If we consider the changes that have occurred from the past to the present, we see that leisure time activities are not only seen as a means of entertainment and relaxation, but also as a way for individuals to develop themselves and complete their existence processes. Robert A. Stebbins' concept of serious leisure time refers to leisure activities that individuals voluntarily engage in over the long term and that require skills and knowledge (Puddephatt, 2007). Some activities that take place in the digital environment may also fall under this category.

With the acceleration of digitalization in recent years, leisure time habits have changed significantly, and the shift toward digital platforms has continued to grow (Yılmaz, 2023). University students allocate time to both physical activity and digital entertainment during their leisure in order to maintain a balance between their academic and social responsibilities (Bozdağ & Özbek, 2020). Therefore, Digital Leisure Time Orientation refers to individuals' tendency to spend their leisure time using digital media (Ho & Cho, 2024). Young people and university students, in particular, show great interest in digital media during their leisure, and this increases their digital leisure time orientation (Dąbrowski & Środa-Murawska, 2022). However, increasing digital leisure time orientation limits the time individuals can devote to physical activity (Er & Cengiz, 2022). Physical activity encompasses any movement performed to improve physical health and contributes positively to individuals' physical, psychological, and social well-being (Coşkuntürk et al., 2023). Young people's daily use of digital technology and games varies according to age

groups and individual habits (Söğüt, 2020). According to a study conducted by the Radio and Television Supreme Council (RTÜK) with young people aged 15-21, individuals in this age group watch an average of 1 hour and 42 minutes of television per day, while their internet usage reaches 4 hours and 37 minutes (Yıldız & Yürekli, 2024). This prolonged time spent on digital media may encourage a sedentary lifestyle by limiting the time available for physical activity (Bayrak & Cihan, 2021). In this context, examining the effect of digital leisure time orientation on motivation to participate in physical activity constitutes an important area of research for promoting healthy lifestyle behaviors (Santos et al., 2023). Increased consumption of digital leisure time can negatively affect individuals' quality of life and overall health (Rainoldi et al., 2024). In this regard, maintaining a balance in leisure time is a critical factor for individuals to develop a healthy lifestyle in terms of both digital content consumption and physical activity (Hedenborg et al., 2024).

Recent studies have clearly shown that the increase in digital leisure time, especially among young people and students, has negatively affected motivation to participate in physical activity (Gellmers & Yan, 2023; Gurleyik et al., 2022; Joo & Nam, 2023; Van Lankveld et al., 2021). The increase in digital leisure time orientation leads individuals to spend more time sitting and engaging in passive leisure activities instead of physical activity (Ahraz et al., 2021). However, excessive use of digital leisure time activities can negatively affect physical activity habits (Cingöz et al., 2021). Therefore, understanding the relationship between digital leisure time orientation and motivation to participate in physical activity among university students is a critical step in promoting healthy lifestyles (Altay & Koç, 2022; Bedir, 2023). Furthermore, it is evident that digital technologies shape individuals' leisure time practices. Young people in particular show a keen interest in digital leisure activities such as digital games, social media, and video content. This situation can affect interest in physical activity, which is one of the traditional leisure activities. When evaluated within the framework of Neulinger's leisure theory (Neulinger, 1974, 1981), it is expected that activities chosen by individuals based on internal motivation will provide psychological satisfaction. On the other hand, Self-Determination Theory emphasizes that needs such as autonomy, competence, and relatedness play a decisive role in an individual's participation in physical activity. The intense orientation toward digital activities leads to these needs being met in the digital environment and may reduce motivation for physical activity. In this study, the relationship between digital leisure orientation (DLO) and motivation to participate in physical activity was examined within the framework of Self-Determination Theory and Leisure Theory.

In this context, the aim of this study is to examine the relationship between the digital leisure time orientation of sports science faculty students and their motivation to participate in physical activity. In addition, the relationship between these two variables will be analyzed. Furthermore, it will be investigated whether digital leisure time orientation differs according to gender and economic income level variables.

In this regard, the research questions have been determined as follows:

• Do students' digital leisure orientation show significant differences according to the gender variable?

• Do students' digital leisure orientation show significant differences according to economic income level?

• What are the levels of digital leisure time orientation among students in the Faculty of Sports Sciences?

• Is there a statistically significant relationship between digital leisure time orientation and motivation to participate in physical activity?

MATERIALS AND METHODS

In this study, the correlational survey method, one of the quantitative research methods, was used to solve the relevant problem and obtain data. Survey research designs are quantitative research approaches in which researchers collect data through surveys administered to a sample or the entire population in order to describe and explain individuals' attitudes, opinions, behaviors, or characteristics (Creswell, 2017). Simple random sampling was used as the sampling method.

Research Group

The research group consists of students from the Faculty of Sports Sciences at Kırıkkale University. A total of 301 students volunteered to participate in the study. An a priori power analysis was conducted using G*Power version 3.1.9.7 to assess sample size adequacy. The analysis was based on the statistical procedures used in the study, including correlation analysis, independent samples t-tests, one-way ANOVA, and multiple linear regression. A medium effect size was assumed (correlation: $r = .30$; group comparisons: $f = .25$; regression: $f^2 = .15$), with $\alpha = .05$ and power $(1-\beta) = .80$.

The analysis indicated that a minimum of 84–92 participants was required. The final sample of 301 participants exceeded this threshold, indicating that the study was adequately powered. The demographic characteristics of the students who participated in the study are shown in Table 1.

Table 1. Research Group Demographic Characteristics

Research Group		Frekans (f)	Yüzde (%)	Ortalama ($\bar{X}$)
Gender	Female	182	60.5	
	Male	119	39.5	
Age				20.9
Department	Physical Education And Sports Teaching	50	16.6	
	Coaching Training	79	26.2	
	Recreation	80	26.6	
	Department of Sport Management	92	30.6	
Class	1. Class	130	43.2	
	2. Class	72	24.0	
	3. Class	64	21.3	
	4. Class	35	11.6	
Perceived Economic Conditions	0-5.000 ₺	138	45.8	
	5.000 ₺-10.000 ₺	61	20.3	
	10.000 ₺-15.000 ₺	32	10.6	
	15.000 ₺-20.000 ₺	70	23.3	

Table 1 shows that the majority of the 301 participants in the research group were female students (60.5%), while the proportion of males was 39.5%. The average age of the participants was 20.9. The majority of students were studying Sports Management (30.6%) and Recreation (26.6%). In terms of class level distribution, the highest percentage belongs to first-year students (43.2%). When examining participants' perceived economic status, approximately half of them rated their economic situation as “poor” (45.8%). This indicates that the overall perception of economic status is generally low.

Data Collection Tool

The data collection tools used in the study were the “Physical Activity Participation Motivation” scale developed by Tekkurşun Demir and Cicioğlu (2018) and the “Digital Leisure Time Tendency Scale” developed by Turhan and Tutar (2023). Additionally, five questions regarding the demographic characteristics of the research group were asked.

Physical Activity Participation Motivation Scale (PAPM): It consists of 16 items and three subscales. The sub-dimensions are expressed as individual reasons, environmental reasons, and lack of reasons. Tekkurşun Demir and Cicioğlu (2018) found the Cronbach's alpha values for the sub-dimensions to be α=.89 for individual reasons, α=.86 for environmental reasons, and α=.82 for the other dimension, lack of reasons.

The communication sub-dimension of the digital leisure tendency scale developed by Turhan and Tutar (2023) 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, totaling four sub-dimensions. When examining Cronbach's Alpha internal consistency

coefficients, the results of the analysis conducted to test reliability show that the coefficient values range between .65 and .80.

Data Analysis

The JAMOVİ (2.3.18.) statistical program was used for data analysis in the study. The data of participants who completed the data collection instruments incompletely or invalidly were excluded from the analysis. Before proceeding with the data analysis, the normality assumption of the continuous variables was examined using the Kolmogorov-Smirnov and Shapiro-Wilk tests; additionally, skewness and kurtosis values were evaluated. Skewness and kurtosis values falling within the range of ±1.5 were interpreted as indicating that the data met the assumption of normal distribution (Tabachnick & Fidell, 2013). The normality assumption was tested for the gender variable, and it was observed that the data were normally distributed. Subsequently, the homogeneity of variances was tested (Levene's test), and since the variances did not show a homogeneous distribution, Welch's test was applied. For the economic income level variable, the normality test was performed, and the skewness and kurtosis scores were examined. Since the data did not show a normal distribution, the Kruskal-Wallis test, one of the non-parametric tests, was applied. For the relationship test between the total scores of digital leisure orientation and the total score of motivation to participate in physical activity, the normality assumption was first tested. Since the data did not show a normal distribution, Spearman's Correlation Analysis was performed from non-parametric tests, and the results are presented in tables in the findings section.

RESULT

The findings obtained from the research data are presented in the tables below.

Table 2. Descriptive Statistics for Students In The Faculty of Sports Sciences

	DLO Total Score	PAPM Total Score
Mean	61.1	53.9
Standard Deviation	12.8	9.22
Skewness	0.0561	0.608
Kurtosis	0.243	1.08

DLO: Digital Leisure Orientation, PAPM: Physical Activity Participation Motivation

When Table 2 is examined, the total DLO score was measured as an average of 61.1. The skewness and kurtosis values are 0.0561 and 0.243, respectively, indicating that the distribution of the DFT variable is close to symmetry and quite suitable for a normal distribution. This indicates that participants' tendencies to spend leisure in digital environments are moderately and evenly distributed.

The average score for Physical Activity Participation Motivation (PAPM) is 53.9. The distribution exhibits slight right skewness (skewness = 0.608) and kurtosis (kurtosis = 1.08). This indicates that moderate motivation is more prevalent among participants, but low motivation scores also account for a significant proportion.

Overall, while the distribution structure is asymmetric and sensitive to outliers in age and income variables, psychological constructs such as DLO and PAPM exhibit a more balanced profile closer to a normal distribution. These data reveal how participants' demographic

characteristics, digital leisure time usage, and physical activity motivation levels are distributed, thereby establishing an important foundation for the research context.

Table 3. Results of The T-Test And Welch Test According To The Gender Variable Regarding DLO Scores of Students In The Faculty of Sports Sciences.

								%95 Confidence Interval
Lower Dimension	**Gender**	**n**	**$\bar{X}$**	**s**	**t**	**df**	**p**	**Cohens'd**
Communication	Female	182	19.9	4.52	-.0.727	225	0.468	-.0.08
	Male	119	20.4	5.26				
Social Interaction	Female	182	18.3	4.03	0.433	299	0.665	0.051
	Male	119	18.1	4.24				
Psychological Orientation	Female	182	12.8	3.70	-2.183	299	0.03	-0.258
	Male	119	13.7	3.58				
Application Usage	Female	182	9.4	3.07	-2.503	279	0.01	-0.290
	Male	119	10.2	2.62				
DLO Total	Female	182	60.4	12.5	-1.31	299	0.190	-0.155
	Male	119	62.3	13.3				

p=0.05, DLO: Digital Leisure Orientation

Table 3 presents the results of the independent samples t-test and Welch test conducted for students of the Faculty of Sports Sciences, indicating statistically significant differences between female and male participants in certain Digital Leisure Time Orientation (DLO) scores and its subdimensions. In the Psychological Orientation sub-dimension, female participants ($\bar{X}$ = 12.8, SS = 3.70) scored significantly lower than male participants ($\bar{X}$ = 13.7, SS = 3.58); (t299= -2.183; p<0.05). This difference has a small effect size. In the Application Usage subscale, female participants ($\bar{X}$ = 9.4, SS = 3.07) also scored significantly lower than male participants ($\bar{X}$ = 10.2, SS = 2.62); (t279= -2.503; p <0.05). The effect size is also small here. No significant difference was found between women and men in Communication, Social Interaction, and DLO Total scores (p > .05). The difference in total DLO scores observed between genders among students in the Faculty of Sports Sciences is not statistically significant (t299 = -1.31; p > 0.05). These results indicate that some aspects of digital leisure time usage (particularly psychological reasons and application usage) differ by gender, but the overall trend is similar.

Table 4 Shows The Diagnostic Statistical Results of Sports Sciences Faculty Students According To Their Monthly Income Variable.

	Aylık Gelir	**N**	**$\bar{X}$**	**s**
DLO Total Score	0-5.000 ₺	138	61.3	12.0
	5.000 ₺-10.000 ₺	61	59.9	14.6
	10.000 ₺L-15.000 ₺	32	59.8	12.8
	15.000 ₺-20.000 ₺	70	62.6	12.09

p=0.05, DLO: Digital Leisure Orientation,

Table 4 shows that digital leisure time scores do not vary greatly according to monthly income levels, and that DLO scores increase only slightly as income increases. This suggests that

individuals' participation in digital leisure time activities is at similar levels regardless of income.

Table 5 Shows The Kruskal-Wallis Test Results For The Total Scores Of The Monthly Income Variable And Digital Leisure Orientation Of Students In The Faculty of Sports Sciences.

	χ^2	df	p	ε^2
DLO Total Score	4.02	3	0.259	0.0134

When Table 5 is examined, the total scores of sports science faculty students' digital leisure time orientation did not show a significant difference according to their monthly income levels, $\chi^2(3) = 4.02$, $p = .259$, $\varepsilon^2 = .0134$. This finding shows that digital leisure time orientation is independent of monthly income level and that students' digital leisure time usage tendencies are similar regardless of income level. The effect size value ($\varepsilon^2 = .0134$) is quite low, indicating that the differences obtained have a low practical impact.

Table 6 Results of Pearson's Correlation Analysis Testing the Relationship Between Physical Activity Participation Motivations and Digital Leisure Time Orientations of Sports Science Faculty Students

		PAPM Total Score	DLO Total Score
PAPM Total Score	Pearson's r	-	
	df	-	
	p	-	
DLO Total Score	Pearson's r	0.331	-
	df	299	-
	p	0.001	-

DLO: Digital Leisure Orientation, PAPM: Physical Activity Participation Motivation

Table 6 shows that Spearman's correlation analysis revealed a moderate, positive, and statistically significant relationship between motivation to participate in physical activity and digital leisure time orientation, $\rho(299) = .311$, $p < .001$. This finding indicates that as students' digital leisure time orientation increases, their motivation to participate in physical activity also increases.

DISCUSSION

Although 21st-century society has been defined by various social scientists as "postmodern," "conspicuous consumption," "risk," or "information society," it essentially possesses the characteristics of a digital society with its own unique values, priorities, and problems (Şentürk, 2022). The COVID-19 pandemic has rapidly accelerated the adoption of digital technology and transformed the information labor market (Rainoldi et al., 2025). In today's world, where we feel the digital age in every aspect, the fact that individuals' digital addictions have reached their highest level and that the use of the internet and digital devices is increasing day by day is a cause for concern. Especially in digitally dependent individuals, the negative effects on mental, social, and academic performance have become a source of concern for parents and educators (Ersoy & Şahbaz, 2023). Furthermore, concerns regarding digital, internet, and gaming addiction have reached a critical point today (Siyahtaş & Güler, 2025). While a significant portion of the population participates in leisure activities that provide biopsychosocial benefits, a significant portion of the younger generation spends their

free time using the internet (Siyahtaş & Güler, 2025). However, Oğuz (2021) takes a different perspective, stating that individuals who are becoming increasingly digitized experiences discomfort when temporarily separated from smart devices and social media that facilitate their daily lives due to their dependence on these tools. This situation has become an inevitable habit imposed by modern life, and Oğuz suggests that it is more empathetic to describe this as an urge not to disconnect from modern digital life rather than as an addiction. In addition, López-Sintas et al. (2017) have shown that digital leisure activities enable young people to use their time productively during moments of loneliness and strengthen their sense of social connection and belonging despite physical distance. In this context, the multifaceted role of digital entertainment in the lives of young individuals is emphasized; it serves not only as a source of entertainment but also as a tool for social and emotional support in increasingly digitalized societies. López-Sintas et al. (2017). In addition, it can be said that the development and increasing use of digital technologies have caused a transformation in the experience of modern leisure activities (Bryce, 2001). Digital leisure orientation refers to individuals' tendency to spend their free time with digital media. Ho and Cho (2024) and especially young people and university students show great interest in digital media in their leisure time, and this situation increases the digital leisure orientation (Dąbrowski & Środa-Murawska, 2022). Not only young people and students, but also internet use supports positive age perception and active aging in older adults, highlighting the importance of an age-friendly societal infrastructure through the mutual interaction of online and offline activities (Xiang et al., 2025). In this context, the current study examined the relationship between digital leisure time orientations and various demographic variables among students of the Faculty of Sports Sciences; it also aimed to analyze the relationship between digital leisure time orientations and motivations for participating in physical activity. The findings obtained from the study are discussed below in light of the literature.

When evaluated in line with the relevant literature, the data obtained provide noteworthy conclusions. According to the analyses, no significant difference was found in digital leisure time orientation scores based on gender (Table 3). This reflects that male and female students show similar characteristics in terms of their orientation toward digital leisure time activities. Abay et al. (2021) state in their study examining women's participation in leisure activities and the barriers they face that positive gains were achieved from a physiological and psychosocial perspective, while when looking at leisure constraints, they state that women face constraints that can act as barriers. Additionally, Er and Cengiz (2025) stated that internet use as a leisure activity is related to flow experience and that participation in the internet for social interaction and information/self-development in leisure activities affects the flow experience. Er and Cengiz (2025) did not identify gender as a factor that creates differences in terms of the purposes of free time internet use, but they did highlight differences in terms of flow experienced in digital free time experiences. (Yaraş & Efe, 2025) examined the motivations of university students for playing digital games and stated that, in terms of the total motivation score for digital sports games, men scored significantly higher than women according to the gender variable. Based on this, we can say that men are more motivated than women when playing digital games. Additionally, based on the findings of Yaraş and Efe (2025), individual differences play an important role in digital game motivation and are effective in determining the level of motivation.

No statistically significant difference was observed in terms of digital leisure time orientations based on participants' monthly income levels (Table 4, Table 5). This result shows that the use of digital content is widespread regardless of income level. However, some studies, such as Satılmış et al. (2023) and Serdar et al. (2018), suggest that the risk of digital addiction is higher among individuals with low income levels. The difference observed in the current study

may be due to the homogeneous nature of the sample or the equal opportunities provided by university resources. One of the most noteworthy findings of the study is the discovery of a positive and statistically significant relationship with a moderate effect size between digital leisure time orientations and motivation to participate in physical activity (Table 6). This finding suggests that individuals who engage in digital leisure time activities may also develop higher motivation to participate in physical activity. Therefore, it can be concluded that digital content is not merely a factor that hinders physical activity but can also serve as a motivational factor for certain individuals. Therefore, using digital tools such as smartwatches, phones, or computers to track physical activity can play a motivational role in encouraging students to engage in physical activity. In this context, Gómez Rubio et al. (2024) stated that young people use social media primarily for entertainment purposes and do not sufficiently explore the deeper functions of platforms, such as democratic participation and education. Young people's interactions with social networks are mostly passive, and content consumption and sharing occur within a limited framework. Furthermore, they generally perceive their social media use not as a leisure activity but as a necessity of digital socialization. In another study, Chicharro et al. (2024) found that digital technologies and video games reshape young people's identity, education, and socialization processes. Another study by Qian and Kim (2025) examined the adoption processes of digital technology among sports participants through the lens of Behavioral Decision Theory and found that both positive and negative factors influence participants' attitudes and intentions; particularly, perceived enjoyment and self-efficacy play significant roles. Öksüz and Masatçıoğlu (2025) examined the relationship between digital games and life satisfaction and concluded that playing digital games increases participants' life satisfaction. Additionally, Gümüşdağ and colleagues (2021) revealed that digital games can provide motivational gains in individuals through a sense of achievement and social interaction, offering a perspective that aligns with our current study. On the other hand, Hazar and colleagues (2017) emphasized that there is a negative relationship between digital game use and physical activity, stating that the level of digital game addiction is lower in students who engage in regular physical activity compared to those who do not play games. These findings point to the potential role of physical activity in balancing the excessive use of digital games, alongside their motivational benefits. Bilgin and Çavuşoğlu (2025) examined the relationship between participation in physical activities and motivation to play digital games and found a very weak positive correlation.

Based on this, it can be said that participating in physical activity also reduces digital game addiction. In our current study, there is a positive relationship between digital leisure activities and motivation to participate in physical activity. In this context, it can be concluded that digital leisure activities motivate students to participate in physical activity. In another study, Tüver and Gümüş (2024) found a low-level positive relationship between motivation to play digital games and constraints on leisure-time physical activity. On the other hand, it can be said that reducing the factors that motivate individuals to play digital games will increase their participation in physical activity during their leisure. The study by Chun et al. (2025) reveals that individuals who want to conserve their energy tend to turn to technology-based passive leisure alternatives when they cannot participate in their preferred active activities. While it is emphasized that online and offline leisure activities can complement each other rather than exclude each other, it is noted that digital technologies such as smartwatches and fitness apps play a motivating and facilitating role in participation, particularly in sports and fitness-focused leisure activities.

CONCLUSIONS

The research findings reveal that the digital leisure time orientations of students at the Faculty of Sports Sciences generally differ in some sub-dimensions depending on the gender variable, but there is no significant difference in terms of total scores. In addition, students' digital leisure time orientations do not differ significantly according to monthly income levels. However, a moderate, positive, and significant relationship was found between students' digital leisure time orientations and their motivation to participate in physical activity. Considering the relationship between students' digital leisure time orientations and their motivation to participate in physical activity, it is recommended that universities develop programs and activities that encourage physical activity through the use of digital environments.

Author Contributions

Conceptualization, R.K. methodology, R.K.; formal analysis, R.K.; investigation, A.K.. and B.E; data curation, A.K. and B.E; writing-original draft preparation, R.K. and R.K; writing-review and editing, R.K.

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The authors declare that no conflicts interest.

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