Factors directing individuals to computer games in the process of evaluating recreational activities

Authors' contribution:

- A) conception and design of the study
- B) acquisition of data
- C) analysis and interpretation of data
- D) manuscript preparation
- E) obtaining funding

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ABSTRACT

This study aims to examine the motivational factors that direct individuals to computer games in the process of evaluating leisure activities. The study is designed in descriptive and relational survey models, which are among the quantitative research patterns. A total of 1677 individuals participated in the study. A personal information form and the Computer Gaming Motivation Scale were used. An independent sample t-test, one-way analysis of variance, and Pearson correlation test were used to analyze the data. According to the results, there were significant differences in the concentration, entertainment, escape, learning, and socialization sub-dimensions of the participants in favor of the groups playing in Internet cafes. The findings indicate that when more time is spent with information and communication technologies, there is a decrease in concentration and an increase in entertainment and escape. Furthermore, when the relationship between the sub-dimensions of the scale was examined, positively moderate and high correlations were found among concentration, entertainment, escape, learning, and socialization. As a result, rapid technological changes and developments provide many opportunities for individuals. It is thought that individuals' busy work lives and monotonous daily routines cause them to prefer easily accessible activities during their leisure time.

KEYWORDS

Recreational activities, computer games, socialization, learning

Introduction

Throughout human history, adapting to the rapid developments and changes in technology that affect our social life is one of the indispensable elements of our daily life (Yıldız, 2016). Today, as a result of rapid developments and changes, the preferences of games and game materials have also started to change accordingly. Although games are older than the invention of writing, video games appeared in the 1970s (Avcı & Avcı, 2016). The games that started with Atari in Korea and Japan have turned into the digital games of today (Baranowski et al., 2008). Digital games are games that take place on computers, game consoles, and mobile phones (Rideout, Foehr, & Roberts, 2010), and in which a visual background is prepared for users and played with a user login after being programmed with various technologies (Çetin, 2013).

Computer games are activities that are a popular entertainment tool marketed as an experience to consumers (Bryce & Rutter, 2003). In addition to providing the opportunity to develop critical thinking skills and learn by

doing and through experience, computer games have become one of the most preferred leisure time activities for adolescents and young adults (Griffiths, 2010). Karaküçük (2014) describes leisure time activities as relaxing and entertaining activities in which individuals or groups voluntarily participate, enjoy, and are delighted. Arslan (2010), on the other hand, defines leisure time activities as activities in which people are free to participate voluntarily, both for themselves and for others. Along with the developing communication technologies, children, adolescents, and adults possess easy access to digital games via mobile phones, tablets, and computers. Granic et al. (2014) point out that computer games may have cognitive, affective, mental, and motivational benefits. Dye et al. (2009) state that in the rush of everyday life, rapid decision making through digital games positively contributes to participants' lives.

When the studies conducted in the literature are examined, it is seen that much research has been done on the addiction of children and adolescents to computer games (Çavuş & Ayhan, 2014; Desai et al., 2010; Jeong & Kim, 2011; Korkmaz & Korkmaz, 2019; Rooij et al., 2010; Sağlam & Topsümer, 2019; Salguero & Moran, 2002). As a leisure time activity that the individual participates in voluntarily, computer games have a peculiar limitedness of pattern and duration (Binark & Bayraktutan-Sütçü, 2008). It can be said that the main reason why individuals prefer computer games as a leisure time activity is because it is easy to use them to engage in social interaction, and because they embody competition and entertainment. Esentaş et al. (2018) state that individuals of all ages prefer digital games as a recreational activity that allows them to take advantage of the little spare time they have in their busy lives. It is seen that individuals prefer computer games that they can passively enjoy rather than more active activities in their leisure time. In this context, the aim of the research is to determine what motivational factors lead individuals to computer games in the evaluation of leisure activities.

Materials and methods

Research model

This study is designed in descriptive and relational survey models, which are among the quantitative research patterns.

Study group

A total of 1677 individuals (810 females, 867 males) participated in the study. These individuals were reached using a convenience sampling method, which is among the non-random sampling methods, from participants playing computer games in Manisa and İzmir (Turkey) provinces (Table 1).

When Table 1 is examined, it can be observed that 867 (51.7%) males and 810 (48.3%) females were included in the study. A total of 944 (56.3%) of the participants were between the ages of 18 and 25, and when they were examined in terms of educational status, 575 (34.3%) of the participants were graduates of elementary school, 952 (56.8%) were graduates of high school, and 150 (8.9%) were university graduates. Considering the occupational distributions, 628 individuals were still university students, 350 (20.9%) were public employees, and 388 (23.1%) were private sector employees.

Table 1. Descriptive statistics for demographic characteristics

Variables		N	%
Gender	Female	810	48.3
	Male	867	51.7
Age	18-25	944	56.3
	26-35	540	32.2
	36-45	135	8.1
	46-55	42	2.5
	56+	16	1
Education Status	Primary School	575	34.3
	High School	952	56.8
	University	150	8.9
Occupation	Student	628	37.4
	Public employee	350	20.9
	Private sector employee	388	23.1
	Housewife	72	4.3
	Retired	28	1.7
	Not working	211	12.6

Source: own study.

Data collection tools

In the research, a personal information form and the Computer Gaming Motivation Scale were used as data collection tools. In the personal information form, the participants were asked about their gender, age, educational status, daily use of information and communication technologies, and information about the place where they play games.

Computer Gaming Motivation Scale: This measurement tool was developed by Akyıldız-Munusturlar and Munusturlar (2018). The scale consists of 17 items and 5 sub-dimensions to measure individuals' motivations (reasons for engagement) to engage in computer games and has a 5-point rating. Reliability analysis results for the current research are presented in Table 2.

Table 2. Reliability analysis of the Computer Gaming Motivation Scale sub-dimensions

Factors	Items	Cronbach's Alpha (α)
Concentration	4 Items	0.900
Entertainment	4 Items	0.950
Escape	3 Items	0.876
Learning	4 Items	0.930
Socialization	2 Items	0.873

Source: own study.

Data analysis

Descriptive statistics were examined for the preliminary evaluations, and the percentage distribution of data, means, and standard deviations were examined. The kurtosis-skewness values were taken into consideration regarding whether the scale means to meet the normality hypothesis, and all scale sub-dimensions were found to have values between +2 and -2 (Byrne, 2010; Hair et al., 2010). In terms of variables related to personal information, an independent sample t-test was used to determine whether there was a difference among the means of computer game motivation of the participants; one-way analysis of variance was used in the

comparison between groups; Tukey's HSD test was used to determine the group that caused the difference; and the Pearson correlation test was conducted to test the relationships among the scales.

Results

In this part of the study, indications of and comments on the data obtained as a result of statistical analyses are included.

Table 3. Descriptive statistics

Variables		N	%	Total	$\bar{x}$	SD	Min.	Max.
Daily ICT Usage	No	22	1.3	1677				
	Less than 1 hour	217	12.9					
	1-3 hours	676	40.3					
	4-6 hours	526	31.4					
	7 hours or more	236	14.1					
Game place	Home	1405	83.8	1677				
	Internet cafe	272	16.2					
Computer Gaming Motivation Scale								
Concentration				1677	2.67	1.03	1.00	5.00
Entertainment				1677	3.29	1.09	1.00	5.00
Escape				1677	2.67	1.02	1.00	5.00
Learning				1677	2.88	1.06	1.00	5.00
Socialization				1677	3.06	1.14	1.00	5.00

Source: own study.

According to Table 3, when durations of the participants' daily use of information and communication technologies (mobile phones, tablets, computers) were examined, it was observed that 676 (40.3%) individuals spent 1-3 hours, 526 (31.4%) participants spent 4-6 hours, and 236 (14.1%) individuals spent 7 hours or more on their devices. In terms of places to play games, it was determined that 1403 (83.8%) participants preferred to play at home and 272 (16.2%) participants preferred to play in Internet cafes. When we look at the gaming motivation sub-dimensions, it is obvious that entertainment ($\bar{x} = 3.29$) and socialization ($\bar{x}=3.06$) get the highest averages.

Table 4. Comparison of differences of Computer Gaming Motivation Scale sub-dimensions according to the gender variable

Variables		n	$\bar{x}$	SD	df	t	p
Concentration	Female	810	2.562	0.979	1674.04	-4.321	0.000*
	Male	867	2.779	1.073			
Entertainment	Female	810	3.013	1.059	1669.76	-10.350	0.000*
	Male	867	3.552	1.072			
Escape	Female	810	2.497	0.990	1675.00	-6.619	0.000*
	Male	867	2.824	1.027			
Learning	Female	810	2.610	0.981	1674.32	-10.291	0.000*
	Male	867	3.125	1.071			
Socialization	Female	810	2.728	1.048	1674.56	-11.906	0.000*
	Male	867	3.364	1.140			

Note: * $p < 0.05$

Source: own study.

In Table 4, difference results are given in terms of the Computer Gaming Motivation Scale sub-dimensions according to gender. Significant differences were found in favor of males in the concentration ($t_{(1677)}=-4.321$), entertainment ($t_{(1677)}=-10.350$), escape ($t_{(1677)}=-6.619$), learning ($t_{(1677)}=-10.291$), and socialization ($t_{(1677)}=-11.906$) sub-dimensions ($p<0.05$). The results of the analysis show that the male participants' computer gaming motivation levels are higher than those of the female participants.

Table 5. Comparison of differences of Computer Gaming Motivation Scale sub-dimensions according to the game place variable

Variables		N	$\bar{x}$	Sd.	df	t	p
Concentration	Home	1405	2.498	0.907	337.36	-14.569	0.000*
	Internet cafe	272	3.585	1.165			
Entertainment	Home	1405	3.152	1.047	1675.00	-12.299	0.000*
	Internet cafe	272	4.010	1.084			
Escape	Home	1405	2.573	1.002	1675.00	-8.646	0.000*
	Internet cafe	272	3.146	0.990			
Learning	Home	1405	2.719	0.972	353.65	-13.278	0.000*
	Internet cafe	272	3.688	1.124			
Socialization	Home	1405	2.882	1.050	1675.00	-15.226	0.000*
	Internet cafe	272	3.961	1.169			

Note: * $p<0.05$

Source: own study.

In Table 5, different results are given in terms of the Computer Gaming Motivation Scale sub-dimensions according to the game place variable. Significant differences were found in favor of the groups playing games in Internet cafes in the concentration ($t_{(1677)}=-14.569$), entertainment ($t_{(1677)}=-12.299$), escape ($t_{(1677)}=-8.646$), learning ($t_{(1677)}=-13.278$), and socialization ($t_{(1677)}=-15.226$) sub-dimensions ($p<0.05$).

In Table 6, ANOVA test results are given regarding the Computer Gaming Motivation Scale sub-dimensions and age groups. According to the results of the analysis, significant differences were found according to age groups in the computer game motivation levels of concentration ($F_{(4-1672)}=16.851$), entertainment ($F_{(4-1672)}=60.914$), escape ($F_{(4-1672)}=12.795$), learning ($F_{(4-1672)}=23.433$), and socialization ($F_{(4-1672)}=43.230$) sub-dimensions. In other words, the computer gaming motivations of the participants vary significantly depending on the age variable. Tukey's test was carried out to determine the differences between the units among the groups; the results are presented in Table 6.

Table 6. ANOVA test results of the Computer Gaming Motivation Scale sub-dimensions according to the age group variable

Variables	Groups	n	Mean	Sd.	Sum of Squares	df	Mean Square	F	p	Sign. Dif.
Concentration	1- 18-25	944	2.803	1.081	Between	69.435	4	17.359	16.851	0.000*
	2- 26-35	540	2.616	0.925	Within Groups	1722.372	1672	1.030		
	3- 36-45	135	2.348	1.000	Total	1791.806	1676			
	4- 46-55	42	1.815	0.757						1-2, 1-3 1-4, 2-3 2-4, 2-5 3-4
	5- 56+	16	2.031	0.287						
Entertainment	1- 18-25	944	3.586	1.049	Between	257.591	4	64.398	60.914	0.000*
	2- 26-35	540	3.025	0.999	Within Groups	1767.612	1672	1.057		
	3- 36-45	135	2.693	1.085	Total	2025.203	1676			
	4- 46-55	42	1.857	0.891						1-2, 1-3 1-4, 2-3 2-4, 3-4 3-5, 5-4
	5- 56+	16	3.719	0.375						
Escape	1- 18-25	944	2.789	1.064	Between	51.996	4	12.999	12.795	0.000*
	2- 26-35	540	2.562	0.962	Within Groups	1698.669	1672	1.016		
	3- 36-45	135	2.427	0.866	Total	1750.666	1676			
	4- 46-55	42	1.921	0.867						1-2, 1-3 1-4, 2-3 2-4, 3-4 3-5, 4-5
	5- 56+	16	2.896	0.291						
Learning	1- 18-25	944	3.063	1.096	Between	99.927	4	24.982	23.433	0.000*
	2- 26-35	540	2.696	0.960	Within Groups	1782.524	1672	1.066		
	3- 36-45	135	2.535	0.930	Total	1882.451	1676			
	4- 46-55	42	1.994	0.928						1-2, 1-3 1-4, 2-4 3-4, 4-5
	5- 56+	16	3.141	0.387						
Socialization	1- 18-25	944	3.337	1.156	Between	204.608	4	51.152	43.230	0.000*
	2- 26-35	540	2.784	1.009	Within Groups	1978.397	1672	1.183		
	3- 36-45	135	2.552	1.013	Total	2183.004	1676			
	4- 46-55	42	1.905	0.864						1-2, 1-3 1-4, 2-4 3-4, 4-5
	5- 56+	16	3.031	0.125						

Note: * p<0.05
Source: own study.

Table 7. Correlation analysis results of some personal information and Computer Gaming Motivation Scale sub-dimensions

Variables		1	2	3	4	5	6
1- Ages	r	1					
2- Daily ICT Usage	r	-0.179*	1				
3- Concentration	r	-0.190*	-0.127*	1			
4- Entertainment	r	-0.305*	0.105*	0.541*	1		
5- Escape	r	-0.143*	0.083*	0.522*	0.704*	1	
6- Learning	r	-0.196*	-0.042	0.554*	0.708*	0.653*	1
7- Socialization	r	-0.276*	0.007	0.492*	0.668*	0.541*	0.772*

* p<0.05

After examining the data in Table 7, a negatively low and medium level relationship was found between age variables and daily usage of information and communication technologies ($r=-0.179$) and concentration ($r=-0.190$), entertainment ($r=-0.305$), escape ($r=-0.143$), learning ($r=-0.196$), and socialization ($r=-0.276$), which are the Computer Gaming Motivation Scale sub-dimensions. Accordingly, as the ages of the participants increase, both their use of information and communication technologies and their motivations for computer gaming decrease.

A negatively low level relationship ($r=-0.127$) was found between the daily usage of information and communication technologies and the sub-dimension of concentration. In the entertainment ($r=0.105$) and escape ($r=0.083$) sub-dimensions, a positive low level relationship was found. The findings indicate that when more time is spent with information and communication technologies, there is a decrease in concentration and an increase in entertainment and escape. Also, when the relationship among the sub-dimensions of the scale was examined, positively moderate and high correlations were found among concentration, entertainment, escape, learning, and socialization.

Conclusions and discussion

Rapid changes and developments in technology offer many opportunities for individuals. Individuals are affected by the positive or negative results of these opportunities in line with their own preferences. It is thought that individuals' busy working lives and monotonous daily routines lead them to prefer easily accessible activities in their allocated leisure time. Mobile phones and computers are always at hand and are easy to access as a recreational activity tool. Anderson and Tracey (2001) argue that technology can reduce or increase our leisure time. Digital games are the most preferred leisure time activity for adolescents (Griffiths, 2010). According to a comparative study conducted among some of the European countries, computer games are the most preferred interactive media tool for children and adolescents between the ages of six and sixteen (Fromme, 2003). A total of 5.3% of the participants in our study are between the ages of 18 and 25.

In the study of Durak-Batıgün and Kılıç (2011), 18.9% of the students residing in Ankara and Istanbul provinces were found to be addicted to the Internet, and it was determined that males' addiction to computer games was significantly higher than females'. When other studies in the literature are examined that were conducted in different types of schools such as primary schools, secondary schools, high schools, and universities, it can also be observed that digital game addiction is higher among male students than female students (Eni, 2017; Erboy, 2010; Kars, 2010; Kurtbeyoğlu, 2018; Lemmens & Valkenburg, 2009; Şahin & Tuğrul, 2012). These studies overlap with our research findings.

When Akyıldız-Munusturlar and Munusturlar (2018) explain the concept of motivation for engaging in computer games, the concentration sub-dimension is an important concept, especially because it has the feature of providing information for the experience of flow. Bayırtepe and Tüzün (2007) stated in their study on students

that computer games not only offer relaxation and contribute to the motivation of students, but also increase their success by enabling them to improve their focus on their lessons. In the studies conducted, they found that people who play digital games regularly see digital games as a means of relaxation and stress relief (Ballabio et al., 2017; Király et al., 2015; Russoniello et al., 2013; Snodgrass et al., 2014; Wack & Tantleff-Dunn, 2009). It can be said that adults often use computer games as an escape tool to de-stress and better deal with stress in their daily lives.

It is stated that there is an opportunity for social interaction with people they know or do not know in computer games, and these games also offer opportunities for teamwork and socialization among players (Yee, 2006). The studies in the literature have found that computer games contribute to psychological empowerment, lifelong learning, self-sufficiency, psychological well-being, socialization, and decreased loneliness (Bier et al., 1997; Hu & Leung, 2003; Haythornthwaite & Wellman, 2002; Leung & Lee, 2005). In addition to these contributions, the conscious use of computer games especially in young people is the point that should be emphasized with care. Being over-motivated by computer games may bear negative consequences in health and physical and cultural development. Literature studies point to technological developments and their products as one of the main causes of decreased physical activity (Rosenberg, 2013). Therefore, keeping young people away from excessive computer habits is crucial. On the other hand, it is stated that technological developments have an important effect on participants' motivation. This study develops a recreational approach to computer games. However, it should not be forgotten that having the basic values of physical education and sports culture is important, as these values encourage individuals to maintain healthy levels of physical activity. Vagheti et al., (2018) state that when young people move their bodies and participate in different activities, these actions have a positive effect on their internal motivation.

Thus, rapid changes and developments in technology offer many opportunities for individuals. As a consequence of how they choose to utilize these opportunities, individuals are affected either positively or negatively by these technological developments. It is supposed that people prefer easily accessible activities because of their busy professional lives and monotonous daily routines. The findings of the study show that the new generation has high motivation levels for computer gaming and specifically utilizes online platforms to have fun, escape, learn, and socialize.

Funding: This research received no external funding.

Conflicts of interest: The authors declare no conflict of interest.

Ethics approval and informed consent: Informed consent of participants was obtained, and they were at liberty to participate and withdraw voluntarily. We also ensured that their responses were anonymous and confidential.

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Received: 26 March 2020; Accepted: 26 May 2020