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Internet Addiction: A Research on Private and Public Sector Employees

Hüseyin Fidan　　Mehmet Akif Ersoy University Burdur-TURKEY

ABSTRACT　*Becoming one of the irreplaceable elements of social and business life, Internet has brought along problems such as confidentiality, inequality, and addiction, aside from the numerous advantages it provided. Internet causes addiction due to overuse, and considered one of the fundamental social problems. It is used in all stages of company activities, leading to an increase in the employees' level of Internet use, as well as addiction risk. Carrying out operations that are not related to the assignment being worked on over the Internet leads to inefficiency. Therefore, it is important to detect Internet addiction of employees and identify the factors that influence Internet addiction. In this study, the "Internet Addiction Test" (IAT) developed by Young was used, and private and public sector employees were surveyed. The research identified those public employees have the highest Internet addiction rate. Additionally, social media, and online shopping were identified as the primary factors affecting Internet addiction.*

KEYWORDS : Behavioral addiction, Internet addiction, Human Computer Interaction

INTRODUCTION

Internet had been developed within the scope of a military project aimed at establishing a communication medium that would not have been interrupted in the event of a nuclear attack. The very first data transfer was achieved through a connection set up among 4 universities in 1969 (Gromov, 2012). Internet use did not become widespread at the time due to the fact that the systems were not user-friendly and they were costly; and it was used only by the military and academia until 1990. With the suggestion of a World Wide Web (www) idea in 1991, the Internet use has acquired a different dimension. Thanks to the www developed by Tim Berners Lee, Internet use has become rather simple, while transmission of images, audios and videos has made the system interactive (Spector, 2001). Web pages, which allowed the user to make inquiries in order to gain access to information, assumed a dynamic structure. Another development that increased the Internet use was the coming of smart phones. Smart phones made Internet access a lot easier, lead to an increase in the time people spent on the Internet. By 2015, the Internet use rate in the world on the basis of household was 46% (ITU, 2016), while this rate was 55.9% in Turkey (TUIK, 2015).

Defined as a fixation on an object or a behavior, the concept of addiction has been used in relation to the use of substances such as cigarette, alcohol, and drugs. However, recently it was suggested that the concept of addiction did not only pertain to substantial addiction, but gambling, exercising, computers, Internet, and mobile phones as well lead to addiction in relation to overuse (Griffiths, 1995). Internet addiction is investigated within the framework of behavioral addictions, and it is examined in the areas of sociology, psychology, and management information systems. Used in all stages of production processes of companies, Internet provides them with the opportunity to instant communication, enabling rapid and effective execution of processes. While the possibilities delivered by Internet are positively contributing to a company, it is also forming a basis for overuse of Internet by employees. Accordingly, Internet overuse increases the risk of Internet addiction among employees (Young, 2007). As a consequence of that, employees use Internet in a non-work-related manner, decreasing the company productivity (Young, 2004). In this regard, investigating Internet addiction of employees is crucial for taking necessary measures. This study aims at identifying the level of Internet addiction among the private and public sector employees, as well as the factors effecting this addiction.

CONCEPT OF ADDICTION

Being considered as material and spiritual dependency to a person or an object, the concept of addiction is expressed as a fixation on bad habits such as cigarettes, alcohol, and drugs. Generally identified with drug and alcohol use, the concept is associated with behaviors that are potentially addictive. Regarded as one of these behaviors, exercising, technology and internet cause loss of control in people, and increase the risk of addiction (Griffiths, 1995; Young, 1996).

The American Medical Association (AMA) has recognized alcoholism in 1956, and addiction in 1987 as diseases (Leshner, 1997). While addiction was considered only within the framework of alcohol, cigarettes, and drugs (Bettinardi-Angres and Angres, 2010), this conceptual definition was expanded after 1987 and included addictive behaviors as well. The definition of addiction is represented as a compulsive behavior pattern that increases the risk of disease; while it is highlighted that repetitive behaviors can constitute addiction (Griffiths, 2007). In this context, it is possible to discuss two types of addiction: substance addiction, and behavioral addiction (Turel, et.al, 2011).

The Diagnostic and Statistical Manual of Mental Disorders (DSM), published by the American Psychological Association (APA), has been one of the fundamental resources in classifying mental disorders, and in identifying diagnostic criteria. The DSM was updated last in 2013, and was published with the name DSM-V. According to the DSM criteria, diagnosis of addiction can be made by symptoms of tolerance, withdrawal, repetition, desire for recovery, struggling, dedication, and unable to let go (APA, 2000). It is pointed out that these diagnostic criteria, which were prepared by certain researchers studying behavioral addictions in relation to substance addictions, were inconclusive in behavioral addictions, and that general diagnostic criteria that will contain both substance and behavioral addictions must be constructed (Griffiths, 1995; Turel, et.al, 2011).

Technology addiction, which is a mental state caused by overuse of technological devices, is considered to be a social problem that scaled up along with technological growth (Young, 2007). Research on technology addiction seems to be on the rise in the last two decades. The pioneering studies on technology addiction have been on television and computer addictions (Shotton, 1991). The widespread use of the Internet has resulted in academic works on technology focusing on this topic.

INTERNET ADDICTION

When the Internet was brought into use socially in the 1990s, it rapidly became widespread, and finally became in today's world an essential means of communication of social and business life. In the early years, companies used the Internet in order to catch up with their competitors, and it had reached a high usage rate among companies due to its various advantages. According to a World Bank report, by 2014 the rate of broadband Internet use of companies operating in high-income countries was 90%, while it was 40% in low-income countries (WB, 2016). Turkey ranks close to developed countries with a rate of 89.9% (TUIK, 2014).

Along with the advantages that the Internet brought along, academics are investigating the problems it caused, such as digital divide, asymmetric information, and trust. Internet addiction originating from Internet overuse is observed as another problem (Griffiths, 1995). Generally conceived as an overuse, loss of control, and inability to manage exposure time, Internet addiction has been initially conceptualized by Young, who also established its diagnosis measures in 1996 (Beard, 2002; Sheibani, 2015).

Since the APA did not designate the diagnostic criteria of Internet ad-

diction, researchers have been putting together the diagnostic criteria. This situation leads to various different measures and tests in the literature related to Internet addiction. The Internet Addiction Test (IAT) developed by Young has been one of the most frequently used test criteria in the literature (Sheibani, 2015). The test has been translated into various languages, and used as a reference guide in several studies. Sheibani states that studies on Internet addiction were generally on university students, and 60% of the 64 published studies since 1996 had used Young's scale (Sheibani, 2015).

LITERATURE ON INTERNET ADDICTION OF EMPLOYEES

All production processes, especially employee profiles, are formed around information systems in companies that intend to receive high-level benefits from the Internet, a global network. This way, organizations that are capable of utilizing the full potential of new technologies, and develop themselves are targeted (Beard, 2002). However, the increase in Internet use in organizations triggers excessive Internet use among employees. This increases the risk of Internet addiction, and detracts from productivity by negatively affecting business processes. Especially in today's world where mobile technologies are becoming widely in use, Internet addiction has become a major problem for companies. Nevertheless, a significantly few number of research studies has been done on Internet addiction in relation to employees and companies (Sheibani, 2015). Therefore, it is a necessity to determine the level of Internet addiction of employees, to identify the factors that influence this addiction, and to develop strategies towards resolving the problem (Young and Case, 2004).

The initial studies on the Internet use of employees had been conducted pursuant to productivity. These studies did not examine the concept of addition, and claimed that Internet use burdened companies with extra cost (Young and Case, 2004). A research study on Internet use of employees, states that merely 23% of Internet use was related to business (Beard, 2002). Young has conducted one of the first studies aimed at identifying Internet addiction among employees, where he observed lesser interactions of employees with their coworkers, lesser tolerance to work place resources, display of unhappiness and anger as signs of Internet addiction (Young, 1998). Another research study has determined precautions to take within the framework of risk management regarding employees who use the Internet at work for non-work-related operations (Young and Case, 2004). In a research study on South African academicians, Sing has determined that while Internet addiction was not at a high level, the addiction itself was related to gender and race (Sing, 2005). Mankar has identified Internet addiction among employees as 3%, and determined a positive relationship between the addiction and level of income (Mankar, 2014).

RESEARCH METHOD
The Objective and Scope of the Study
The objective of the study is to determine the level of Internet addiction among the private and public sector employees in Turkey, as well as the factors that are in relation to Internet addiction. In this regard, this study includes opinions of private and public sector employees on Internet use.

Population and Sample Size
The population is comprised of the private and public sector employees in Burdur in Turkey. By 2015, Burdur had 12.291 public sector employees (DPM, 2016), and 64.764 private sector employees (BUTSO, 2015). In the event that the population is larger than 50.000, the sample size that is between the error ratio of 0.05 and confidence interval of 95% should be 383 (Yazıcıoğlu and Erdoğan, 2004). In this context, the sample size is determined as 400, considering the possibility of erroneous surveys. The study was participated by randomly selected 420 people out of the public and private sector employees, and 15 surveys were rendered invalid. Therefore, 405 surveys were identified as appropriate for analysis. The participating 92 males and 94 females from the public sector constitute 46% of the sample, while the 85 males and 134 females from the private sector constitute 54% of the sample. The average level of income of participants was between 1300 – 2500 TRY, and 26% of them are college graduates, with an average age of 32 years.

Data Collection and Analysis
The study used the short form of IAT, which was developed by Young (1996) as a data collection tool, and widely used in the Internet ad-

diction literature. The goal was to simplify the survey by keeping its application time short.

1. Do you feel preoccupied with the Internet?
2. Do you feel the need to use the Internet with increasing amounts of time in order to achieve satisfaction?
3. Have you repeatedly made unsuccessful efforts to control, cut back, or stop Internet use?
4. Do you feel restless, moody, depressed, or irritable when attempting to cut down or stop Internet use?
5. Do you stay on-line longer than originally intended?
6. Have you jeopardized or risked the loss of significant relationship, job, educational or career opportunity because of the Internet?
7. Have you lied to family members, therapist, or others to conceal the extent of involvement with the Internet?
8. Do you use the Internet as a way of escaping from problems or of relieving a dysphoric mood?

The survey comprised of a total of 25 questions, including the test with eight questions, as well as 17 questions regarding demographic and personal characteristics. The participants were asked to respond to these questions with "Yes", and "No". Those who respond with "Yes" to 5 out of 8 questions in this test would be considered addicted (Young, 1996).

Data retrieved from participants were entered into the Microsoft Excel office software, and they were organized via Excel. The SPSS program was used for the statistical analysis of the data. T—test, ANOVA and correlation analyses were conducted on the data that were transferred to SPSS.

RESEARCH FINDINGS
Findings Regarding Use of Information Technologies
The participants were determined to have high-level ownership of information systems. While the highest ownership rate is observed in mobile phones with 98.8%, tablet ownership showed the lowest ownership rate. While the rate of computer ownership among public sector employees was 83.2%, this rate is 82.8% in private sector. 99.1% of the private sector employees and the 98.4% of the public sector employees owned mobile phones. These rates demonstrate that public and private sector employees are equal in terms of computer and mobile phone ownership.

The participants had access to the Internet from three resources: work place, home, and mobile phone; and at least one of them was used. In other words, all participants had Internet access. 78% of employees were able to go online at work, while 90% of them were able to go online at home, and 96% had access to the Internet on their mobile phones. The average Internet use per day was 3-5 hours. It is observed that 77.8% of Internet use was related to social media, while 10.9% was for online shopping. 80% of participants were using WhatsApp, 59.3% was using Facebook, and 42.2% was using Twitter. 137 people were using Internet banking, which equals to a rate of 33.8% among participants.

Findings Regarding Internet Addiction
While only 18 of the participants stated that they were addicted to Internet, the IAT determined this number as 33 people. This value suggests 8.1% of participants. It was determined that Internet addiction did not have a significant relationship with gender, computer ownership, Internet banking, and WhatsApp use. On the other hand, Internet addiction varies depending on sectors. The addiction variable that represented Internet addiction in the t-test, results of which can be seen in Table 1, is a dependent variable. According to the t-test results, public employees had a higher rate of Internet addiction. Furthermore, it was determined that employees who had Internet access on their mobile phones, shopping online, and used Facebook had a significant relationship with addiction.

Table 1: Internet addiction t-test scores

		N	Mean	t	df	p
gender	Male	177	1,91	,577	403	,56
	Female	228	1,92			
sector	Public	186	1,88	2,433	316	,01
	Private	219	1,95			

Have Comp.	Yes	336	1,91	,782	403	,43	
	No	69	1,94				
Mobil inter. (mob_ int)	Yes	251	1,89	2,271	398,1	,02	
	No	154	1,95				
Online shopping (shop_ int)	Yes	238	1,87	4,022	358,1	,00	
	No	167	1,97				
İnternet. banking (bank_ int)	Yes	212	1,91	,263	403	,79	
	No	193	1,92				
Using facebook (face)	Yes	240	1,87	5,020	308,1	,00	
	No	165	1,98				
Using WhatsApp (WApp)	Yes	324	1,91	1,385	156,4	,16	
	No	81	1,95				

According to the ANOVA test results shown in Table 2, age and level of income do not have a relationship with Internet addiction. On the other hand, it was determined that addiction was related to level of education and time of use.

Table 2: Internet addiction Anova test scores

		Sum of squares	df	Mean squa	F	p
age	InGroup	,281	2	,141	1,884	,15
	Between Group	30,030	402	,075		
	Total	30,311	404			
income	InGroup	,328	3	,109	1,461	,22
	Between Group	29,983	401	,075		
	Total	30,311	404			
edu cation (edu)	InGroup	,872	3	,291	3,961	,01
	Between Group	29,439	401	,073		
	Total	30,311	404			
Durationof use (time)	InGroup	2,459	4	,615	8,829	,00
	Between Group	27,852	400	,070		
	Total	30,311	404			

Table 3 shows the correlation analysis of addiction with the variables, which were significantly related according to the T-test and Anova results. Accordingly, addiction positively correlates with mob_int, shop_int, face, and time variables, and negatively correlates with sector and edu variables. According to the average values of the sector variable, which negatively correlates with addiction in the correlation analysis, it can be stated that the level of Internet addiction in the public sector was higher.

The mob-int variable positively and significantly correlates with the time variable. According to this relation, the mobile Internet use increases the time of Internet use of employees. Furthermore, a positive correlation was determined between the shop_int, face, and edu variables. This finding indicates that the higher the level of education is, the higher the facebook use and online shopping activities increase.

Table 3: Correlation analysis

	addict	sector	mob_int	shop_int	face	edu	time
addict	1						
	405						
sector	-,124*	1					
	,013						
	405	405					
mob_int	,103*	,079	1				
	,038	,113					
	405	405	405				
shop_int	,176**	,027	,057	1			
	,000	,586	,254				
	405	405	405	405			
face	,210**	,018	,054	,990**	1		
	,000	,719	,274	,000			
	405	405	405	405	405		
edu	-,155**	-,080	,016	,115*	-,085	1	
	,002	,109	,741	,020	,089		
	405	405	405	405	405	405	
time	,247**	-,034	,139**	-,075	-,080	-,065	1
	,000	,501	,005	,133	,106	,190	
	405	405	405	405	405	405	405

CONCLUSION

This study on Internet addiction has determined the levels of addiction among employees, as well as the factors that influence addiction. 8.1% Internet addiction was found among employees, and it was determined that public sector employees had a higher risk of Internet addiction. The study found that Internet addiction of employees is related to level of education, Internet use time, the sector employed, Facebook use, online shopping, and mobile Internet use. On the other hand, Internet addiction was not related to age, income, and gender. Furthermore, the study revealed that the Internet use time, Facebook use, and online shopping were factors that increase employees' addictions. In this context, it would be appropriate to target the aforementioned factors in the precautions to be taken regarding Internet addiction in especially the public sector.

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