

INTERNET ADDICTION IN BALKAN AND SOUTH-EASTERN EUROPEAN COUNTRIES

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Abstract: *The use of Internet has increased dramatically in recent years. Although there is no standardized definition of Internet addiction, there is acknowledgement among researchers that this phenomenon does exist.*

In this study, we identify various similarities and differences among people in the Balkan and South-Eastern European countries about Internet addiction. There are many factors such as cultural differences, gender differences, psychosocial variables, computer attitudes and time.

We present the experience from studies concerning Internet addiction in all over the world. A specific research with the use of Young's 20-scale was also conducted in five Balkan and South-Eastern European countries (Republic of Moldova, Romania, Republic of Bulgaria, Hellenic Republic, Republic of Cyprus).

The findings are interesting. Although there is a need for Internet using, there are also cases where the addiction, dependence and abuse is apparent.

Keywords: *Internet addiction, Internet dependence, Young's test.*

JEL Classification Codes: L86, M51

1. INTRODUCTION

Nowadays, the Internet is very important factor in people's life, so as many researchers say that it changes our life, it changes the society. Even though the Internet is the most universal way of communication used by us, it greatly affects human relations, constrains our imagination, we also reduce the incentive to go to libraries, to buy a book or to go to the theatre. Internet creates dependency, although it is the most used means of communication, extremely useful and helpful. It is like a "fairy" that satisfies all our desires for free or for cost.

Nowadays, most people have a computer and Internet at home, they spend much time in front of the monitor, so as begin to forget to satisfy basic needs even to communicate to their friends and their relatives. For us it is enough to have a computer that has access to Internet.

Last years, the Internet had changed the way, we communicate each other. The Internet is a means with a unique ability to facilitate meeting people that are far away from each other.

As the number of Internet users increases, so does the number of Internet addicts. Some addicts fail in school, lose their jobs and divorce their spouses. The contribution of this study is the possible identification of candidates for addiction, so that their behaviour can be interdicted and treated.

In some Balkan and South-Eastern European countries (Bulgaria, Cyprus, Greece, Republic of Moldova, Romania), the growth of Internet and technology are almost similar to the same as in other European countries according to the legislation, but compared to countries such as China, Russia, USA or Iraq things are totally different.

For example

- In China: The access to the Internet is controlled from government-owned centralized routers that direct traffic across their borders and within the country. This permits government to block access to U.S. or European web sites. China uses its powers of censorship to block dissent and publishes propaganda that cultivates a virulent form of nationalism.
- In Russia: The Government controls the Internet in a smarter way. They don't block all the "bad sites" right away. They hire hackers to put down the independent online news media, opposition groups' web sites and individual bloggers. More and more bloggers have been sentenced for "extremism", have paid amendments etc.
- In USA: The Internet in the U.S. is highly regulated, supported by a complex set of legally binding mechanism. At present, the 5 core areas of I-net infrastructure are monopolized by US IT giants, including high-performance computers, operating systems, database technologies and information resource libraries. The US government has adopted macro-control to actively use IT giants to create a global Internet infrastructure which could be manipulated by the US.
- In Iraq: All Web sites that glorify terrorism and incite violence and sectarianism, or those that violate social morals with content such as pornography are banned.

So, in Balkan and South-Eastern European countries are not applied such laws as in the countries given above by example. People can use Internet freely, almost unlimited in matter of web pages that can be accessed and this makes them to get even more desire of staying in front of the computer.

Among many phenomena which are related to specific patterns of human behaviour on the Internet, i.e. in the virtual environments, probably the most important, from both theoretical and practical perspectives, is the one that started a decade and a half ago – it is devoted to psychological qualification of the special type of human dependence, most often called Internet addiction and also known under a multitude of names, such as Internet addiction disorder (IAD), Internet Dependency, Netaholism, Internet overuse, Internet abuse, Problematic Internet use, Pathological Internet use, Excessive Internet use, Compulsive Internet use, Disturbed Internet use, Elevated Internet use, or Internet misuse, as well as less general names stemming from the most popular online services including for example Twitter addiction or Facebook addiction. The references are numerous, among the latest is an exhaustive and competent review paper by Morahan-Martin (2008).

This paper is not the place to discuss the nature, phenomenology, genesis and status of the Internet related addictions and/or dependencies. We take "addictions" as a generic term, covering all the enumerated types of the Internet misuse. Thus, the Internet addiction refers to every particular web service, such as online gaming, online pornography, online interaction, online romance, online surfing, online gambling, online exploratory behaviour, online shopping. An addiction is a sort of an escape from personal problems and a decrease in the quality of life, which are opposite to feelings associated with positive psychological phenomena, including the flow experience. Thus, both theoretically and practically analogies between flow and addiction are inadequate, and any idea to correlate the symptoms of the optimal, experience and the

Internet addiction will hardly be seen justified. Most often the attempts to establish such correlations refer to the parameters of the online/video/computer gaming experience. Indeed, gaming is one of the most addictive of the variety of the IT related behaviours, partly due to the fact that game developers and providers try hard to hook the devoted addicts to their newest products, using for instance some “principles in behavioural conditioning” (Yee, 2006).

Section 2 describes the background theory, section 3 describes the methodology used in our study. Section 4 presents the results from research and section 5 discusses the results and refers to the main conclusions of the study.

2. BACKGROUND THEORY

How can Internet addiction be assessed? Early research into the phenomenon of Internet addiction focused on articulating criteria by which Internet addiction could be described and diagnosed, such as the well described set of diagnostic criteria provided by Goldberg (1996) and six criteria developed by Griffiths (1998). As research into Internet addiction continued, checklists were developed whereby data could be collected from willing, self-reporting respondents about their patterns of Internet use. For example, Young (1996a) developed an eight-item Internet Addiction Diagnostic Questionnaire (DQ) used both in online surveys as well as in telephone interviews. DQ is simply a set of eight Yes/no questions about such things as the user’s preoccupation with the Internet, amount of time spent on the Internet, and effects of the Internet in the user’s life. Young asserted that five or more Yes responses to the eight questions indicate a dependent user. Another questionnaire includes a checklist of 10 clinical symptoms developed by Scherer (1997).

Although some argue that the term “addiction” should be applied only to cases involving chemical substances (e.g., Bratter and Forrest, 1985), similar diagnostic criteria have been applied to a number of problematic behaviours such as pathological gambling (Young, 1996a). Popular use of the term may associate “addiction” with almost any substance or activity (Hatterer, 1994). People are said to be “addicted” to food, smoking, gambling, shopping, work, play and sex (Truan, 1993). Early research, such as that conducted by Shotten (1991), studied the “computer addiction” of some computer scientists and technicians. The typical research participant was a Young “solitary male loner” with a long-standing interest in technology and science. The explosive growth of the Internet over the past decade has almost certainly changed the profile of the “computer addict” (Brenner, 1997; Young, 1996b). With its convenient communication options and the World Wide Web, the Internet provides remote access to other people and abundant information in all areas of interest. It is an environment that could be abused by virtually anyone, regardless of their interest in technology and science (Griffiths, 1998).

Although there is no standardized definition of Internet addiction, there is acknowledgement among researchers that this phenomenon does exist. As Griffiths (1998) notes, “excessive use of the Internet may not be problematic in most cases but the limited case study evidence suggests that for some individuals, excessive Internet use is a real addiction and of genuine concern” (p. 73). Griffiths (1998) further considers Internet addiction to be a kind of technological addiction (such as computer addiction), and one in a subset of behavioural addictions (such as compulsive gambling). Kandell (1998) defined Internet addiction as “a psychological dependence on the Internet, regardless of the type of activity once logged on” (p. 12). Maladaptive patterns of Internet use do indeed constitute behavioural addiction when considered in terms of these definitions (Chou et al., 1999).

However, terminology remains a problem. Some refer to particular Internet-related behaviours as Internet addiction (e.g., Chou and Hsiao, 2000; Young, 1996a), whereas others prefer Internet

Addiction Disorder (Goldberg, 1996), Internet pathological use (e.g., Davis, 2001; Morahan-Martin and Schumacker, 2000), or Internet dependency (e.g., Scherer, 1997).

In this article, the term Internet addiction is used to cover the collective phenomenon. However, the terminology preferred by the respective researchers is used in the discussion of their work.

The work to develop instruments with which computer users could be surveyed for information about their habits of Internet use continued and became more sophisticated. The number of questions on the surveys increased and statistical analyses were applied to identify Internet addiction.

For example, in Morahan-Martin (1997) and Schumacker's (2000) studies, a 13-question "Pathological use scale" was developed to assess whether heavy Internet use negatively affects academic and other work, interpersonal relations, individual stress levels, social withdrawal, and mood alteration. Brenner (1997) also developed an Internet-Related Addictive

Behaviour Inventory (IRABI). The IRABI has 32 true-false questions that assess users' Internet experiences. Further development and refinement of self-reported instruments for the identification of Internet addiction took place largely in Taiwan. Researchers created surveys on which participants could report their Internet behaviours by degree using 5-point Likert scales rather than giving absolute Yes or no responses. Taiwanese researchers also increased the numbers of Internet users they surveyed in their respective studies. Examples included Chinese Internet Addiction Scale (CIAS) by Chen and Chou (1999), revised-IRABI (in Chinese) by Chou and Hsiao (2000), and Internet Addiction Scale for Taiwan High School Students (IAST) by Lin and Tsai (1999).

In summary, assessment instrument for Internet addiction was presented in various formats (criteria, checklists, or scales), with different item numbers (ranging from 6 to 40), using a variety of methods (paper-and pencil survey, online survey, telephone interviews, case studies, etc.) and aimed at different types of research participants (college students, high school students, general populations).

Table 1 provides a summary of assessment instruments detailing their item number, scale, reported reliability, and number of respondents/methods and using criteria, checklists, or scales with information about items such as, scale, reported reliability, number of respondents, and methods.

Table 1: Internet Addiction Assessment Instruments

Researchers	Instrument	Items	Scale	Reported reliability (a)	Respondents (method)
Criteria					
Goldberg (1996)	Internet Addiction Disorder (IAD) Diagnostic criteria	7	-	-	-
Griffiths (1996, 1998, 2000)	Criteria (core components) for addiction	6	-	-	7 case studies (in 2000 study)
Checklists					
Young (1996a, 1998)	Diagnostic Questionnaire (DQ)	8	Yes/no	-	396 dependents, 100 non-dependents (in 1998 study)
Scherer (1997)	Clinical symptoms of Internet dependency	10	Yes/no	-	531 college students (online survey and

Researchers	Instrument	Items	Scale	Reported reliability (a)	Respondents (method)
					telephone interview)
Scales					
Morahan-Martin and Schumacker (1997, 2000)	Pathological use scale	13	Yes/no	.88	277 college students (paper-and-pencil survey)
Brenner (1997)	Internet-Related Addictive Behavior Inventory (IRABI)	32	Yes/no	.87	563 online survey respondents
Chen and Chou (1999)	Chinese Internet Addiction Scale (CIAS)	28	4-point Likert	.93	1336 students from National Taiwan University (paper-and-pencil survey)
Chou and Hsiao (2000)	Chinese IRABI version II (C-IRABI-II)	40	4-point Likert	.93	910 Taiwan college students (paper-and-pencil survey)
Lin and Tsai (1999)	Internet Addiction Scale for Taiwan High Schoolers (IAST)	20	4-point Likert	.85	615 Taiwan high school students (paper-and-pencil survey)

Table 2 provides a summary of empirical research studies and their major findings by issues.

Table 2: Summary of empirical research studies and their major findings by issues

Study	Major findings
Internet use and time	
Chen and Chou (1999)	Students' addiction scores were correlated with their weekly Internet-use hours
Chou and Hsiao (2000)	Internet addicts spent triple the number of hours than non-addicts The addict group spent more time on Bulletin Board System and email than a non-addicted group
Morahan-Martin and Schumacker (2000)	Pathological Internet users spent more time online per week than users with limited or no symptoms
Young (1998)	Internet dependents predominately used two-way communication functions; non-dependents more used information-gathering functions
Chou et al. (1999)	Addicts used the chat and talk functions of electronic BBSs the most
Related problems	
Scherer (1997)	13% of respondents reported that Internet use had interfered with their academic work, professional performance, or social lives 2% of respondents perceived the Internet to have had an overall negative effect on their daily lives
Young (1998)	Dependents reported excessive use of the Internet resulted in personal, family,

Study	Major findings
	and occupational problems Time distortion was the major consequence of Internet use Students may experience academic problems
Chou and Hsiao (2000)	Taiwan college addicted students reported Internet has negative impacts on their studies and daily life routines No differences between addicted groups' assessment and non-addicted groups' assessment of impacts on relationships with friends/schoolmates, parents, and teachers.
Lin and Tsai (1999)	Taiwan high schools students reported that the Internet had slightly negative influences on their studies and daily routines, but strong positive influences on their peer relations
Gender difference	
Chou and Hsiao (2000)	Gender is one of the predicting factors in Internet addiction; males are more likely to become Internet addicts
Scherer (1997)	Among 49 identified Internet dependents, 35 are men and 14 are women
Morahan-Martin and Schumacker (2000)	Males were more likely than females to be pathological users
Young (1998)	Among 496 Internet dependents, 157 were males and 239 were females
Internet addiction and other psychosocial variables	
Lavin et al. (1999)	Dependent Internet users' scored lower on the overall sensation-seeking scale, and on the thrill- and adventure-seeking and the excitement-seeking subscales
Lin and Tsai (2002)	Internet dependents users scored higher on overall SSS and the disinhibition subscale than non-dependents
Chou et al. (1999)	Students' addiction scores correlated positively with their escape pleasure scores, interpersonal relationship pleasures scores, and total communication pleasure scores
Chou and Hsiao (2000)	Addict group found the Internet entertaining, interesting, interactive, and satisfactory The communication pleasure scores are the most powerful predictors of Internet addiction
Young and Rogers (1998)	Increased levels of depression were associated with those who became addicted to the Internet
Morahan-Martin and Schumacker (2000)	22 pathological users were more lonely than 251 non-pathological users
Attitude toward computers	
Morahan-Martin and Schumacker (2000)	Pathological users were more likely than non-pathological users to have higher social confidence and social liberating scores
Tsai and Lin (2001)	Students perceiving that they can control Internet interactions and those who highly value its usefulness claimed they needed more time online to achieve desired satisfaction

How to get to addiction? Just as with substances or certain behaviours (smoking, gambling, bulimia, shopping). First is a curiosity, a "fun", an escape from monotony, "something new", nice, exciting. Over time we are "stolen", we are "caught" a little today, tomorrow more, the pleasure with it increases but all the time we need more. Entry into this world means, of course,

leaving the ordinary world, abandoning the old activities, people in our lives. What happens when there is access to the Internet? Events like withdrawal of alcohol or drugs: any it irritates, can do nothing else, are sad, depressed, not knowing what to do with themselves and with their time, do not have pleasure or interest.

The use of the Internet presents advantages and disadvantages. Advantages consist in that the Internet has increasingly more attractive offers. Disadvantages are the decrease of physical activity and social interaction with others. Internet is addictive, even leading to sleep deprivation.

3. APPROACH

3.1 Data sample

The self administrative questionnaire was chosen to collect the data for research. A 27-item questionnaire was used in this survey which was conducted from March to May 2012. It is consisted of two components: (1) demographic data and (2) Internet Addiction Test.

Demographic information: Questions 1 – 7 asked about the responders country of origin, monthly net income, age category, gender, marital status and level of education.

Internet Addiction Test (IAT): Questions 8 – 27 is a 20-item questionnaire on which the participants rate the items on a 5-point Likert scale (where a score of 1 is defined as “not at all” and a score of 5 as “always” respectively), covering the degree to which their Internet use affects their daily routine, social life, productivity, sleeping pattern and feelings. This test was first developed and used by Dr. Kimberly Young (Young, K. 1996b, Young, K. and Rodgers, R. 1998, Widyanto, L. and Mcmurran, M. 2004). Hence, the total IAT’s score is the sum of the score in this 20-item questionnaire, which may range from 20 to 100, where higher total score reflect a greater tendency toward Internet addiction. The 20 items of the IAT is presented in Table 3 below.

Table 3: Items that the IAT consists of.

1. How often do you find that you stay on-line longer than you intended?
2. How often do you neglect household chores to spend more time on-line?
3. How often do you prefer the excitement of the Internet to intimacy with your partner?
4. How often do you form new relationships with fellow on-line users?
5. How often do others in your life complain to you about the amount of time you spend on-line?
6. How often do your works suffer because of the amount of time you spend on-line?
7. How often do you check your e-mail before something else that you need to do?
8. How often does your job performance or productivity suffer because of the Internet?
9. How often do you become defensive or secretive when anyone asks you what you do on-line?
10. How often do you block out disturbing thoughts about your life with soothing thoughts of the Internet?
11. How often do you find yourself anticipating when you will go on-line again?
12. How often do you fear that life without the Internet would be boring, empty, and joyless?
13. How often do you snap, yell, or act annoyed if someone bothers you while you are on-line?
14. How often do you lose sleep due to late-night log-ins?
15. How often do you feel preoccupied with the Internet when off-line, or fantasize about being on-line?
16. How often do you find yourself saying "just a few more minutes" when on-line?
17. How often do you try to cut down the amount of time you spend on-line and fail?
18. How often do you try to hide how long you've been on-line?
19. How often do you choose to spend more time on-line over going out with others?
20. How often do you feel depressed, moody, or nervous when you are off-line, which goes away once you are back on-line?

The questionnaire was given to 600 random people in Bulgaria, Cyprus, Greece, Moldavia and Romania. They were asked to complete it anonymously. The answers were collected from 452 people (75% responder rate). All statistical analysis was conducted with the application of the SPSS version 18 software package.

3.2. Variables

The main variables of this research are Country of Origin, Monthly net income, Age Category, Gender, Marital Status, Level of Education and Young's score that measure the Internet addiction.

3.3. Hypotheses

We pose the following hypotheses:

1. Monthly net income does not affect the impact of Internet addiction.
2. The impact of Internet addiction is different for each country of origin.
3. Male users are more subject to Internet addiction than female users.
4. Younger users are more subject to Internet addiction than older users.
5. Married people are less subject to Internet addiction than other people.
6. Level of education affects Internet addiction.

4. RESULTS

4.1 Sample description/allocation

The sample consists of citizens of five countries. Its allocation from each country and the monthly net income is presented in the table 4.

Table 4: Sample allocation as to country of origin and monthly net income

Country	Monthly net income						Total
	<500	501 - 800	801- 1200	1201-1500	1501-2000	>2001	
REPUBLIC OF MOLDOVA	76	22	6	2	0	0	106
ROMANIA	44	26	6	4	4	10	94
BULGARIA	38	48	30	4	2	2	124
GREECE	46	26	10	2	6	2	92
CYPRUS	6	4	8	4	2	4	28
Total	210	126	60	16	14	18	444

Tables 5, 6 and 7 show the allocation of the sample as to their age group, marital status and level of education.

Table 5: Sample allocation as to age allocation

	Frequency	Percent
15-18	28	6,2
19-25	166	36,7
26-35	78	17,3
36-45	88	19,5
46+	92	20,3
Total	452	100,0

Table 6: Sample allocation as to marital status

	Frequency	Percent
Married	164	36,5
Unmarried	242	53,7
Divorced/ Widow-er	44	9,7
Total	450	100,0

Table 7: Sample allocation as to level of education

	Frequency	Percent
I didn't finish Elementary School	8	1,8
Elementary School	24	5,3
Gymnasium School	20	4,4
Lycee School	64	14,3
Technical School	68	15,1
Student	92	20,7
Higher Education	144	32,3
PostGraduate	28	6,2
Total	448	100,0

We observe that the majority of the sample has completed or studying in the higher levels of education. Table 8 presents the sample's occupation and gender.

Table 8: Sample allocation as to occupation and gender

	Male	Female	Total
Freelancer	50	42	92
Private sector employee	52	32	84
Civil servant	52	42	94
Occupation Laborer	40	26	66
Student	44	44	88
Household	4	12	16
Unemployed	4	6	10
Total	246	204	450

The results from the question "Do you use Internet?" are presented in table 9. 8% of the sample has not access to Internet, so they did not participate in the rest of the survey.

Table 9: Sample allocation as to use of internet

	Frequency	Percent
Internet use Yes	414	91,6
No	38	8,4
Total	452	100,0

4.2 Results

Apart from the demographic information, the responders had to answer to a 20-item questionnaire that includes the Internet Addiction Test (IAT).

Answers in each item correspond to score between 1 and 5. IAT's score is the sum of IAT's 20 questions. The higher the score, the greater the level of addiction and the problems which Internet usage causes. As established in the scientific literature (Young, K. 1996b, Young, K. and Rodgers, R. 1998, Bradley, K. 2005, Kim, K. et al 2006), the following cut-off points were applied to the total IAT's scores:

20 - 49 points: Corresponds to an average on-line user who may surf the web a bit too long at times, but has control over his usage.

50 -79 points: Corresponds to a user who experiences occasionally or frequently problems because of the Internet. The user should consider their full impact on his life.

80 - 100 points: Corresponds to a user that his/her Internet usage causes significant problems in his life. S/he should evaluate the impact of the Internet on his/her life and address the problems directly caused by his/her Internet usage.

Figures 1 to 6 present the distribution of IAT's score (Young score) as to country of origin, gender, age category, marital status, level of education and monthly net income.

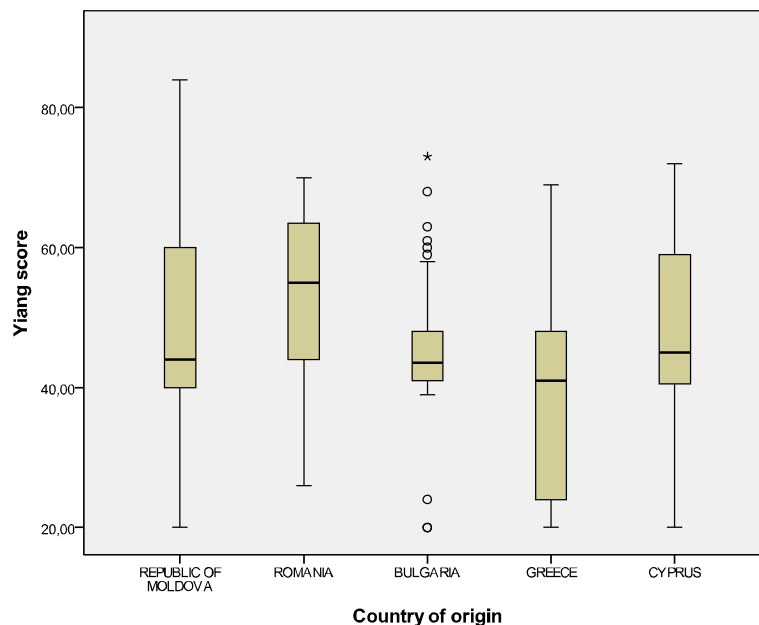


Figure 1: Comparison of Young's score among different countries of origin

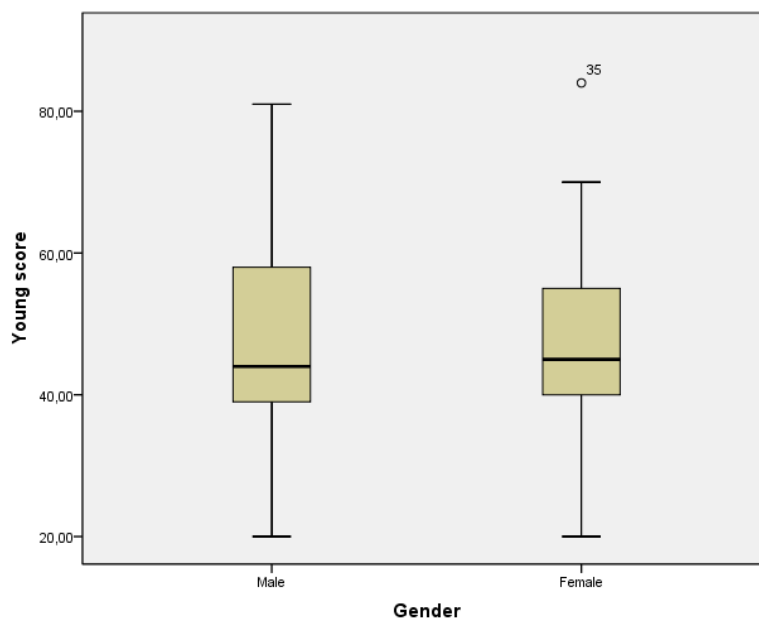


Figure 2: Comparison of Young's score between men and women

Citizens of Romania that participate in the survey, seems to have little higher score and these from Greece lower than these from Republic of Moldavia, Bulgaria and Cyprus. In our survey IAT's score does not seem to differ among males and females.

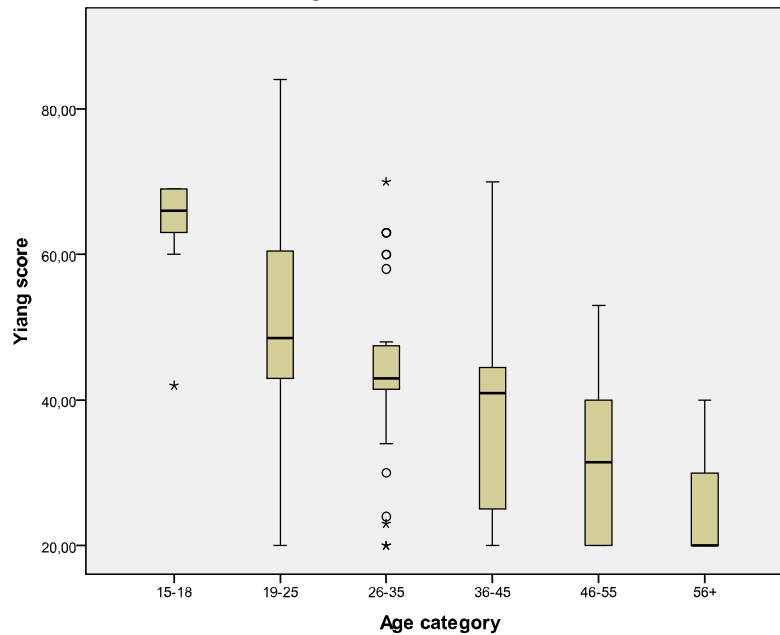


Figure 3: Comparison of Young's score among age categories

Figure 3 shows that in our survey, the younger the participant, the higher their IAT's score. More specific responders younger than 25 years old have a remarkable higher score than older ones. Married participants seems to have lower score than both unmarried and divorced or widow/er (Figure 4).

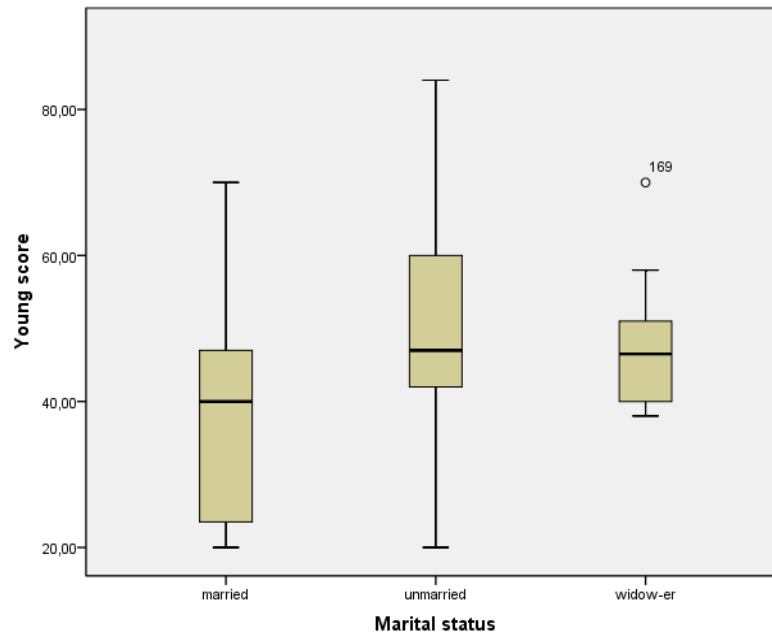


Figure 4: Comparison of Young's score among different marital status

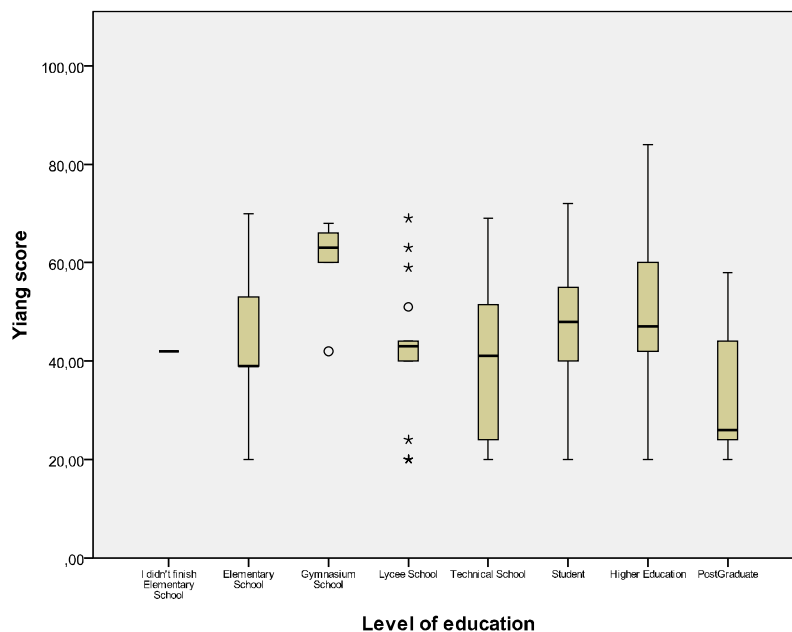


Figure 5: Comparison of Young's score among different levels of education

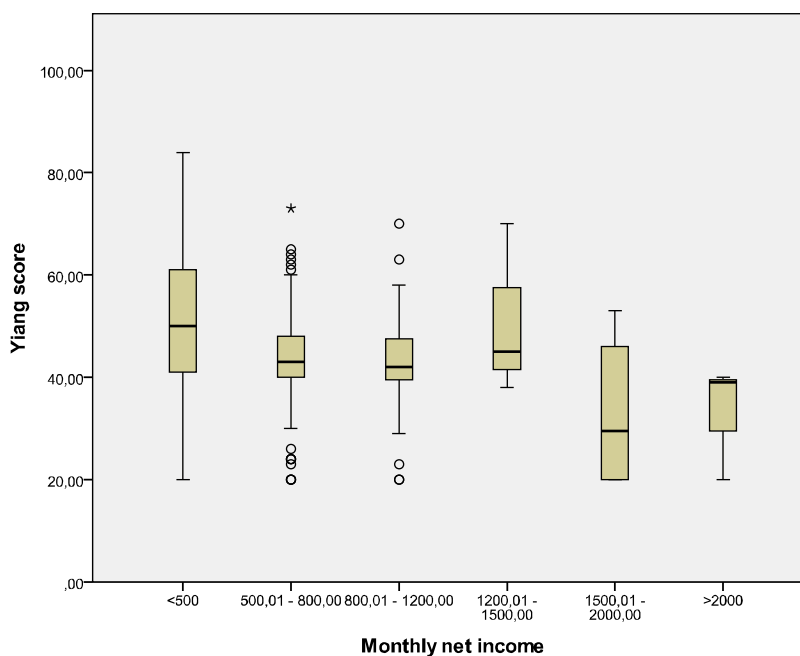


Figure 6: Comparison of Young's score among responders with different monthly net income

Figure 6 shows that participants with monthly net income higher than 1500€ have lower IAT's score than these with lower income.

In order to answer our six hypothesis we use a regression model with dependent variable the IAT's score and as independent variables dummy for country of origin, monthly net income, age category, gender, marital status and level of education. Initially we confirm the normality of the

residuals (p-value > 0.05). Then we found that Durbin Watson value is 1.83, so we accept that the residuals are uncorrelated.

The results of regression are presented in Table 10. Participants younger than 18 years old and these among 19 and 25 years have in average 28.9 and 7.3 units respectively higher score in IAT's test than these older than 46 years. Also unmarried and divorced/widow-er have in average 2.6 and 3.1 units respectively higher score in IAT's test than married participants.

Table 10: Factors that affect Young's score

Regression Model	Coefficients	Significance
Constant	31.1	<0.001
15-18 years old	28.9	<0.001
19-25 years old	7.3	0.007
26-35 years old	3.3	0.074
36-45 years old	1.2	0.387
unmarried	2.6	0.047
Divorced/widow-er	3.1	0.035

5. DISCUSSION AND CONCLUSIONS

The main goal of the study via this questionnaire was to investigate whether there are some similarities and some differences among people from different countries but from the same part of the world, if we look. We wanted to study how much some categories of people are addicted, according to their age, gender, occupation, education and probably net income.

As we know each country has millions of people and for a more effective research it would be better to ask more than 50% of population but unfortunately it is impossible to ask so many people in such short period of time and of course it needs also some financial resources.

Our research in the future will be continued including more countries with more people.

The problem of Internet addiction is more and more actual, so as we have to pay attention to it and do not neglect it.

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