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The relationship between internet dependency with sensation seeking and personality

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Abstract

The purpose of present study was to predict internet dependency by sensation seeking, big five personality factors and gender. Hence, sample of 179 undergraduate students (109 female and 70 male) were selected from University of Tehran using cluster sampling. The instruments consisted of the IAT, SSS-V and NEO-PI-R. Results revealed a positive significant relation ($P<0.01$) between internet dependency with overall sensation seeking and sub scales of disinhibition and boredom susceptibility; a negative significant relation ($P<0.05$) was also found between internet dependency with agreeableness and conscientiousness. Enter method of multiple regression analysis, with the presence of all predictor variables (sensation seeking and its four subscales, big five personality factors and gender) indicated 24 percent of changes in internet dependency.
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Keywords: Internet dependency, internet addiction, sensation seeking, personality, gender;

1. Introduction

Communication is one of the most important innate needs of human and one of the most basic issues that attracted human attention. Emergence of languages, scripts, radio and television and above all, the internet as the most powerful communication tool of present time indicate human needs to Communication.

One of the factors that its role in internet dependency have been rarely investigated and requires further study, particularly among youth and university students is sensation seeking. Results of few conducted research in the field of internet dependency and sensation seeking showed inconsistencies in some cases. Results of Lin (2001), Lin and Tsai (2002), Gao et al. (2008) and Guo, Mei, and Zhang (2009), indicated positive relation between internet dependency and overall sensation seeking while Lavin et al. (2000) findings showed negative relation between them. Lin (2001) and Lu (2008) have reported positive relation between internet dependency and thrill and adventure seeking while Lavin et al (2000) found negative relation between them.

Preceding studies (Young, 1996, Griffiths, 1998, Duran, 2003) showed that the personality traits are another interpersonal factor that can have an effective role in predicting internet dependency. The relationship between internet dependency and personality has been investigated and a meaningful link was found between internet dependency and different personality traits but some contradictory results have been raised as well. Some studies have been reported (Hardie, 2007; and Gombor and Vas, 2008) positive relationship and other indicated (Tuten and

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Bosnjak, 2001) negative relationship between internet dependency and neuroticism. Same contradiction of results also can be seen in positive (Hall, 2005; Gombor and Vas, 2008; and Correa, Hinsley, & Gil de Zúñiga, 2010) and negative (Landers, Lounsbury, 2006) relationship between internet dependency and extraversion. Tuten and Bosnjak (2001) and Correa, Hinsley, & Gil de Zúñiga, (2010) have reported that high openness to experience is related to internet dependency. Landers and Lounsbury (2006) and Abdul   Karim, Zamzuri, & Nor (2009) have showed negative relationship of agreeableness and conscientiousness with internet dependency.

To address the mentioned issues, current study aimed to determine relationship of internet dependency with sensation seeking (thrill and adventure seeking, experience seeking, disinhibition, boredom susceptibility) and big five personality factors (neuroticism, extraversion, openness to experience, agreeableness, conscientiousness). Moreover, predicting internet dependency by sensation seeking, big five personality factors and gender was another goal of the current study.

2. Method

Research design of current study is non-experimental and correlational study. Statistical Population of the present study was all undergraduate students of University of Tehran in 2008 who were 14092 (8016 female and 6076 male) students. In this study, various faculties were divided to four educational fields including human science, engineering, basic science and art. According to the population, sample of 179 undergraduate students (109 female and 70 male) were selected from various faculties (98 human science students, 41 engineering students, 17 basic science students, and 23 art students) using cluster sampling based on gender and educational fields.

Required data were collected through three questionnaires. Initially, 33 students were selected for pilot study and responded the initial questionnaires. The collected data were analysed and the final form was prepared and performed to the whole sample of students after assurance of technical characteristics of questionnaires. Finally, the individual and overall findings with its interpretations were sent to the students via emails.

Internet Addiction Test (IAT, Young, 1998): Young's Internet addiction test (1998) with 20 items was translated into Persian and respondents answered to all items on a six degree Likert style scale. Cronbach's alpha coefficient of Reliability for this questionnaire in overall sample (179 people) was 0.95.

Sensation Seeking Scale form V (SSS-V, Zuckerman, 1978): A 40-item SSS-V questionnaire with four subscales (thrill and adventure seeking, experience seeking, disinhibition, and boredom susceptibility) and a total score was used. Reliability and validity of SSS-V were reported in several articles (Zuckerman, 1979, 1994, 2007). In this study, questionnaire was translated to Persian and slightly modified in some items to be more consistent with the Iranian Culture. Cronbach's alpha coefficients for the reliability of this modified scale for total score and four sub-scales were 0.99, 0.98, 0.97, 0.97 and 0.96, respectively.

NEO Personality Inventory – Revised (NEO-PI-R, Costa and McCrae, 1992): A 60-item NEO-PI-R with five degree Likert style scale was applied to evaluate big five personality factors (Neuroticism, Extraversion, Openness to experience, Agreeableness, Conscientiousness). The reliability of 0.63 to 0.83 in three-year intervals and 0.68 to 0.83 in six-year intervals were reported (Costa and McCrae, 1988). This inventory in Iran has been normalized by Hagh shenas (1999) on 502 subjects with no psychiatric history. Cronbach's alpha coefficients of big five personality factors in sixth and seventh months intervals for internal consistency were 0.81, 0.71, 0.57, 0.71 0.83 and for test-retest stability were 0.53, 0.74, 0.76, 0.60, 0.64 respectively.

3. Results

109 female (60.9 percent) and 70 male students (39.1 percent) have been investigated in this study. Correlation method was used to determine relationship of internet dependency with sensation seeking and big five personality factors. It should be noted that for the nominal variables of gender and educational field correlation coefficients of polyserial and polychoric have been calculated.

Table1. Correlation matrix of criterion and predictive variables, along with the mean and standard deviation

variables	1	2	3	4	5	6	7	8	9	10	11	12	13
Internet dependency	-												
Gender	0.223**	-											
Educational field	0.002	0.159*	-										
Thrill and adventure seeking	0.101	0.211**	0.061	-									
Experience seeking	0.147	0.133	-0.006	0.380**	-								
Disinhibition	0.236**	0.165*	0.059	0.261**	0.575**	-							
Boredom susceptibility	0.202**	0.177*	-0.042	0.071	0.288**	0.414**	-						
Overall sensation seeking	0.237**	0.242**	0.035	0.659**	0.797**	0.804**	0.549**	-					
Neuroticism	0.140	-0.049	-0.073	-0.080	0.023	0.075	0.116	0.035	-				
Extraversion	0,048	-0.085	0.127	0.147	0.032	-0.019	0.058	0.049	0.290**	-			
Openness to experience	0.034	-0.181*	0.053	0.157*	0.231**	0.091	0.071	0.160*	0.046	0.031	-		
Agreeableness	-0.171*	-0.185*	0.035	0.036	-0.070	-0.250**	-0.178*	-0.154*	-0.399**	0.155*	0.052	-	
Conscientiousness	-0.238**	-0.056	0.094	0.104	-0.163*	-0.269**	-0.203**	-0.172*	-0.410**	0.336**	-0.040	0/230**	-
Mean	23.60	-	-	6.55	3.24	3.46	3.29	16.55	21.01	29.29	28.73	30.62	31.77
Std. Deviation	1.70	-	-	2.51	2.10	2.43	1.59	6.15	7.58	6.88	4.97	5.05	7.07

** P<0.01, *P<0.05

Results of correlation matrix indicated positive significant relation between internet dependency and overall sensation seeking and subscales of disinhibition and boredom susceptibility (P<0.01) and negative significant relation with agreeableness (P<0.01) and conscientiousness (P<0.05).

Enter and stepwise methods of multiple regression analysis were used for predicting internet dependency by sensation seeking, big five personality factors and gender. Nominal variable of gender has been entered to the regression analysis using dummy coding (codes of 0 and 1). Prior to final enter method of regression, case wise diagnostics with simultaneous entry of all predictive variables for identification of cases with standardized residuals greater than 3 was performed. This command in four times results to remove five cases. By eliminating 5 cases, R increased from 0.39 to 0.40, R square from 0.16 to 0.24 adjusted R square from 0.10 to 0.19 and standard error of the estimate decreased from 16.12 to 13.64. Consequently, with the presence of all predictor variables (sensation seeking and its four subscales, big five personality factors and gender) indicated 24 percent of changes in internet dependency. Then, for identifying variables that have the greatest correlation with criterion variable stepwise method of regression was used.

Table2. Model summary of stepwise regression of sensation seeking, big five personality factors and gender on internet dependency

Model	Entered variables	R	R Square	Adjusted R Square	Std. Error of the Estimate	df 1,2	F	Sig.
1	gender	0.281	0.079	0.073	14.614	1,166	14.237	0.000
2	Gender, agreeableness	0.345	0.119	0.108	14.337	1,165	11.142	0.000
3	Gender, agreeableness, openness to experience	0.397	0.158	0.142	14.059	3,164	10.251	0.000
4	Gender, agreeableness, openness to experience, extraversion	0.431	0.185	0.165	13.870	4,163	9.271	0.000
5	Gender, agreeableness, openness to experience, extraversion, conscientiousness	0.469	0.220	0.195	13.618	5,162	9.115	0.000

As seen in table 2, 22 percent of internet dependency changes can be anticipated through predictive variables of gender, agreeableness, openness to experience, extraversion and conscientiousness. Moreover, observed F in all steps of regression has significant relationship (P<0.001) with internet dependency.

Coefficients obtained from the fifth step of stepwise regression indicated that gender allocated the highest standardized beta coefficient (β=0.278, T=3.877, P<0.001) than other variables and plays the greatest significant role in predicting internet dependency. Afterwards, the predictive variables of extraversion (β=0.220, P<0.005), low agreeableness (β=-0.200, P<0.01), low conscientiousness (β=-0.197, P<0.01), and openness to experience (β=0.182, P<0.05) respectively have significant contribution in predicting internet dependency.

4. Conclusions & discussions

This is the first report from a comprehensive study in Iran which aimed to determine relationship of internet dependency with sensation seeking and big five personality factors, also to predict internet dependency by sensation seeking, big five personality factors and gender of university students.

Positive significant relation between overall sensation seeking and internet dependency that we found is consistent with the results of Lin (2001), Lin and Tsai (2002), Gao et al. (2008) and Guo, Mei, and Zhang (2009) but is not with the findings of Lavin et al. (2000). Lin (2001) has developed an internet sensation seeking scale which all its factors (internet thrill and adventure seeking, sensation information retrieval, internet interpersonal adventure, online acquaintance, and internet construction experience seeking) were highly correlated with internet dependency. Lin and Tsai (2002) investigation on Taiwanese high school students showed that internet dependents obtained significantly higher scores on overall sensation seeking than internet non-dependents. Gao et al. (2008) found that college students with internet dependency had high sensation seeking and the sensation seeking had certain influence on internet dependency. In another investigation, Guo, Mei, and Zhang (2009) found significant correlation between internet dependency and overall sensation seeking scores of college students. Finding of Lavin et al. (2000) showed that internet dependents scored significantly lower than non-dependents in term of overall sensation seeking which had contradiction with other results. It seems that generalization of finding from a study with only one institution to its population, i.e. university students of US is a big disadvantage of that study.

Positive significant relation between disinhibition and internet dependency in this study is in good consistence with the results of Lin and Tsai (2002), Gao, et al. (2008), Guo, Mei, and Zhang (2009), and Velezmoro, Lacefield, and Roberti (2010). Lin and Tsai (2002) showed that disinhibition score in internet dependents were significantly higher than internet non-dependents. Positive correlation between disinhibition and internet dependency has also reported in other study Gao, et al. (2008). Guo, Mei, and Zhang (2009) were also reported significant correlation between internet dependency and disinhibition scores. Results of Velezmoro, Lacefield, and Roberti (2010) revealed that disinhibition predicts internet dependency for sexual purposes.

Positive significant relation between boredom susceptibility and internet dependency that we found is consistent with the results of Chaney and Chang (2005), Shi, et al. (2005), and Velezmoro, Lacefield, and Roberti (2010). Chaney and Chang (2005) found that increased levels of boredom while engaged in excessive online sexual activities facilitate and maintain Internet sexual addiction. Shi, et al. (2005) reported that the score of Boredom susceptibility was positively correlated with internet dependency. Velezmoro, Lacefield, and Roberti (2010) revealed that boredom susceptibility were predictive of internet dependency for non-sexual purposes. Sensation seekers incline to modern experiences like application of new technologies to overcome boredom feelings (Zuckerman, Tushup, & Finner, 1976).

Our findings showed a negative significant relation between agreeableness and internet dependency; meanwhile, low agreeableness predicts internet dependency which is consistent with the results of Landers and Lounsbury (2006), Donohoe (2007), and Abdul Karim, Zamzuri, & Nor (2009). Findings of Donohoe (2007) indicated that tough-mindedness, marginally predicts pathological internet use. Tough-minded individuals have low agreeableness, and are more susceptible to internet dependency. Results of Landers and Lounsbury (2006) and Abdul Karim, Zamzuri, & Nor (2009) showed negative significant relation between agreeableness and internet dependency.

We found a negative significant relation between Conscientiousness and internet dependency and low conscientiousness predicts internet dependency. These findings support the results of Dell (2001), Landers and Lounsbury (2006), Abdul Karim, Zamzuri, and Nor (2009). Dell (2001) emphasized that internet -like other

technologies- reduces physical movement and relationship with others in the real world and reinforce social sedentary. These symptoms lead to reduced responsibility. Results of Landers and Lounsbury (2006) indicated that total internet usage was negatively related to conscientiousness of undergraduate students. Similar findings from Abdul Karim, Zamzuri, and Nor (2009) indicated that conscientiousness have negative significant correlation with unethical internet behavior in university students.

Current study showed that 7.9 percent of changes related to internet dependency can be anticipated through predictive variable of gender which obtained the highest standardized beta coefficient than other variables. There was significant gender difference and male students were significantly more vulnerable to internet dependency than female students. Finding of Morahan-Martin and Schumacher (2003), Ono and Zavodny (2003), Shi, et al. (2005), Donohoe (2007), Gao, et al (2008), Huang, et al. (2009), and Floros, Fisoun, and Siomos (2010) indicated that males are more likely to be internet dependent than females which are consistent with our findings. Some researches (Fallows,2005; Huh and Bowman, 2008; Park,2009) are mentioned that, although the gender gap i.e. amount of internet usage, is going to be smaller in younger generations, but still there are differences in several dimensions like the way internet is blended in to their daily routines, content usage and its values, and online activities. Frenkel (1990) considers gender socialization as a main root of differences between the two genders.

We found that openness to experience predicts internet dependency. Therefore, individuals with high openness to experience scores are more susceptible for internet dependency. This result supports the findings of Tuten and Bosnjak (2001) and Correa, Hinsley, & Gil de Zúñiga, (2010) which reported that openness to experience has significant positive relation with internet dependency. People with high openness to experience are curious about inner and outer world (Costa, and McCrae, 2003). Internet with having features of easy access, low cost, rich search browsers and possibility to wide range of communications, has lots of attractions for people with high openness to experience.

We also showed that extraversion predicts internet dependency. Similar findings has reported by Hall (2005), Gombor and Vas (2008), and Correa, Hinsley, and Gil de Zúñiga (2010). Their findings showed positive significant relation between extraversion and internet dependency. People, who are extroverted, are interested in community and others; they tend to large groups and gatherings and also like sexual arousal and stimulations (Costa, McCrae, and Holland, 1984). Extroverted individuals have strong needs for communications and hence make more use of internet as a communication tool. Moreover, variety of provocative websites makes them more susceptible for internet dependency.

Content analysis of internet usage as a further research is suggested. Implementing of this research on populations with higher usage of internet and preparing standardized instruments according to Iran cultural characteristics, especially for Zuckerman sensation seeking scale which has inconsistencies with Iranian culture are also suggested.

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