

## Living on A Virtual Planet. Predictors of Facebook Addiction

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### **Abstract**

*Research suggests that Facebook use and addiction can affect social, cognitive, emotional and physical functioning, and many addicted users feel at a different level depressive symptoms, anxiety, loneliness, social isolation, self-efficacy. Also, Facebook users prove narcissistic traits and characteristics of extraversion and neuroticism. In view of previous research, the aim of the present study is to assess potential predictors of Facebook addiction. The number of participants is 242 Facebook users, and the assessment tools for Facebook addiction (IAT adapted for Facebook; Young, 1998), need to belong (Need to Belong Scale; Leary, Kelly, Cottrell, & Schreindorfer, 2012), loneliness (UCLA Scale; Russell, Peplau, & Cutrona, 1980), personality traits (BFI; John, Donahue, & Kentle, 1991) and communal narcissism (CNI; Gebauer, Sedikides, Verplanken, Maio, 2012) were administered online, on Facebook. Results suggest that the need to belong, agreeableness, conscientiousness and neuroticism can predict Facebook addiction and Facebook addiction only for men. We consider that additional research is necessary in order to clarify the relation between loneliness, extraversion, openness to experience and Facebook type of experience and if agentic narcissism and age can predict it as well.*

**Keywords:** facebook addiction, facebook usage, personality traits, loneliness, need to belong, communal narcissism, gender

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## I. INTRODUCTION

The Internet constitutes a platform for access to information and communication, which was widely known by the year 1990. People ought to learn how to use it and computers selling earned millions of dollars (Young, 2010).

The benefits from using the Internet are relaxation, gain of relevant information, online shopping, working from home on computer, news reading, and online gaming, listening to music online, meeting new people and keeping old relationships through instant messaging (Young, 2010).

However, there are disadvantages as well. These are attention deficit, hyperactivity disorder, depression, loneliness, low self-esteem, poor mental health, sensation seeking and experiencing of virtual pleasure. Besides these, impairment of life satisfaction, low family activity, shyness and inhibition of traditional methods of interaction are important aspects to be considered when using the Internet (Yao & Zhong, 2014).

Facebook is a social network site that appeared in 2004 and has quickly become an indispensable part of people's lives. Facebook has a total number of 2.2 billion user's monthly active, who spend hours per day on it (Statista, 2018). Facebook offers the opportunity of self-presentation, of creating and maintaining relationships, of manifesting different social and individual interests (Nadkami & Hofman, 2011).

With the need to adapt to societal and technological novelties, people were urged to be more open, to be constantly aware of everything that means change. Facebook offers the opportunity to meet these requirements and has a significant effect on our lives, becoming a type of virtual planet, in which everyone exposes and lives their lives (Nadkami & Hofman, 2011).

Age categories using Facebook vary, starting at the age of 13 and reaching the age of 65, Facebook being the most widely used social network (Social Times, 2010).

Facebook addiction is a common problem among adults, and young people under the age of 22 have a stronger Facebook addiction than older people (Chao Lin, Hanh Le, & Cheng, 2012). The level of addiction shows differences according to the members' social environment and the time of ownership of a Facebook account. Also, there have been issues discovered about social relationships and everyday life. Facebook addicts display issues with friendships, family, work or school environment. Addicts begin to spend less time with their friends, relatives or families, and stay home all day, activating on Facebook and being passive at the events that happen around them (Balci & Golcü, 2013).

It has been highlighted by numerous research that Internet addiction can cause consequences in terms of cognitive, affective, emotional and social functioning, and many people who are compulsive users feel at a different level anxiety, depressive symptoms, feeling

of loneliness, social isolation, need for belong, personality traits or feeling of self-efficacy in comparison with those who reasonably use the Internet (Robu & Tcaciuc, 2010).

In 2010 in US, research has shown that Facebook has affected the social and physical functioning of its members. Observing and analyzing social behavior in the virtual environment of 1,605 participants, 39% of them were described as “Facebook addicts”. It has also been found that 57% of women aged between 18 and 34 claims to use Facebook communication rather than the traditional face-to-face communication, and another 21% admit that they check their Facebook at midnight. These findings suggest that Facebook can be as dangerous as the use of narcotics, drugs, cigarettes and can cause addiction if it is not used properly and rationally (Balci & Golcü, 2013).

Big Five personality traits work as significant indicators in explaining Facebook behavior. As an example, it has been shown that Facebook users have narcissistic and specific outreach guidelines (Ryan & Xenos, 2011). Ross et al., (2009) and Amichai-Hamburger and Vinitzky (2010) specifically sought to find a relationship between Big Five and Facebook. The results revealed by them have shown that a number of factors are associated with specific patterns of Facebook members.

Extraversion has been associated with more frequent interactions with a large number of people, agreeableness with appearances in pictures with other people rather than single, conscientiousness has been associated with a lower desire to use Facebook, but more pictures uploads, openness to experience has been associated with many more likes, great group membership and frequent status updates, and neuroticism led to greater self-disclosure (Bachrach et al., 2012).

Loneliness was defined by Peplau and Perlman (1982) as a discrepancy between the desired level and the attained level of social interaction. People who are lonely and socially disconnected spend more time on Facebook to cope with the feeling of loneliness and people who do not feel lonely spend a lot of time on Facebook to keep the social connections they have (Winerman, 2013). It has also been shown that people who have a good perception of the social support offered by online communication networks feel less lonely and are Internet dependent and others have come to the opposite, according to which over-exaggerated use of the Internet is associated with a more intense feeling of loneliness (Hardie & Tee, 2007).

The need to belong is the tendency to create and maintain social relations with peers or the tendency to belong to interaction and communication on social networks (Baumeister & Leary, 1995). Facebook provides a form of socially attractive support for people whose needs for membership and connection are not fully realized in real life and offers the possibility to maintain interactions anywhere, anytime, anyhow (Oldmeadow, Quinn & Kowert, 2012).

In terms of communal narcissism, it refers to megalomania, high self-esteem, social power, all satisfied by common means. Thus, common traits are expressed by communal ways such as help offering, personal warmth, trust in relationships with others (Gebauer et al., 2012). Narcissists use Facebook more often, promoting them, to receive the desired attention and admiration (Buffardi & Campbell, 2008). They find more online social support and are interested in other points of view about their image on Facebook (Compiet, Sumter & Vossen, 2013).

Research on differences between men and women in online communication and the use of networking sites, has shown that women have interpersonal online behavior (social interactions, relationships maintenance), while men are more information seeking and use features such as reading the news or searching for financial information and want to form new relationships (Guadagno & Cialdini, 2007; Muscanell & Guadagno, 2012).

In view of previous research, the aim of the present study is to assess potential predictors of Facebook addiction. The number of participants is 242 Facebook users, and the assessment tools were administered online, on Facebook.

One first proposed hypothesis is that individuals with high levels of agreeableness, neuroticism, openness to experience, loneliness, communal narcissism and need to belong will use Facebook in an addictive way. The second hypothesis stated that individuals with low levels of extraversion and conscientiousness may present a higher level of Facebook addiction.

## II. METHOD

### 1. Participants

The study included 242 Romanian participants (27,7% men and 72,3% women), aged between 16 and 70 years old ( $M_{age}=23,80$  years;  $S=7,62$ ). 188 participants were from urban area and 54 from rural area.

### 2. Measures

2.1. *Big Five Inventory* (BFI; John, Donahue, & Kentle, 1991) includes 44 items and offers scores for each factor: extraversion – 8 items, agreeableness – 9 items, conscientiousness – 9 items, neuroticism – 8 items and openness to experience – 10 items. Each item consists of a short sentence, in which respondents are asked to appreciate to what extent they agree or disagree with each statement, rated on a Likert scale from 1 = Disagree Strongly to 5 = Agree Strongly. In the present study, Cronbach's  $\alpha$  for extraversion was 0.73, for agreeableness  $\alpha = 0.69$ , for conscientiousness was reported  $\alpha = 0.69$ , for neuroticism  $\alpha = 0.78$  and for openness to experience  $\alpha = 0.79$ .

2.2. *Revised University of California at Los Angeles (UCLA) Loneliness Scale* (Russell, Peplau, & Cutrona, 1980) is a one dimensional scale that includes 20 items, 11 positive and 9 negative. Negative items refer to absence of loneliness and are reverse scored. Participants rate each item on a scale from 1 (Never) to 4 (Often). Cronbach's  $\alpha$  for the UCLA Loneliness Scale was 0.91 in this study.

2.3. *Need to Belong Scale* (NTBS; Leary, Kelly, Cottrell, & Schreindorfer, 2012) includes 10 items and 3 of them are reverse scored. Respondents rate the items on a Likert scale from 1 = Strongly Disagree to 5 = Strongly Agree. The obtained internal reliability was  $\alpha= 0.72$  in the present study.

2.4. *Communal Narcissism Inventory* (CNI; Gebauer et al., 2012) consists of 16 items, rated on a Likert scale from 1 = Disagree strongly to 7 = Agree strongly. In the present study Cronbach's  $\alpha$  was 0.91.

2.5. *Internet Addiction Test, adapted for Facebook* (IAT adapted for Facebook; Young, 1998) includes 20 items which rate presence and severity of Facebook addiction among teenagers and adults. Items were rated on a Likert scale from 1 = Rarely or Never to 5 = Always. In terms of internal consistency:  $\alpha = 0.94$ .

### **3. Research procedure**

The participants accessed the questionnaires via a secure link on Facebook created with Google Forms and were applied in a single session each. Respondents also completed a demographic information rubric.

In the questionnaires Form, we emphasized the important aspects of the general instruction, obtained the informed consent from participants and privacy was guaranteed. There were given only partial details about the purpose of research, such as measuring how people experience Facebook and which psychological characteristics they have.

## **III. RESULTS**

In the case of the Pearson correlation analysis, it has been noticed that the scores for extraversion ( $r=-0.127$ ), agreeableness ( $r=-0.256$ ) and conscientiousness ( $r=-0.301$ ) present significant and negative correlation with Facebook addiction.

Neuroticism ( $r=0.364$ ), loneliness ( $r=0.251$ ) and need to belong ( $r=0.264$ ) present significant and positive correlation to Facebook addiction.

Openness to experience ( $r=-0.059$ ) and communal narcissism ( $r=-0.009$ ) do not correlate with Facebook addiction.

Table 1. Pearson correlation coefficients ( $N = 242$ )

	IAT(F)	BfE	BfA	BfC	BfN	BfO	Sing	NA	NC
IAT(F)	1								
Bf_E	-.127*	1							
Bf_A	-.256*	.378**	1						
Bf_C	-.301*	.253**	.424**	1					
Bf_N	.364**	-.324**	-.433**	-.382**	1				
Bf_O	-.059	.288**	.161*	.203**	-.127*	1			
Lon	.251**	-.552**	-.433**	-.275**	.377**	-.060	1		
NB	.264**	-.003	.089	-.079	.392**	-.098	.098	1	
CN	-.009	.219**	.258**	.300**	-.212**	.373**	-.112*	.069	1
<i>S</i>	17.30	5.15	5.22	5.31	5.92	6.28	10.85	6.50	16.84

Note. \* $p < .05$ ; \*\* $p < .001$ ; IAT(F) – Internet Addiction Test (for Facebook); Bf\_E – extraversion; Bf\_A – agreeableness; Bf\_C – conscientiousness; Bf\_N – neuroticism; Bf\_O – openness; Lon – loneliness; NB – need to belong; CN – communal narcissism, S – standard deviation.

The final model from the multiple linear regression analysis (Table 2) demonstrates that extraversion ( $\beta=0.06$ ), agreeableness ( $\beta=-0.11$ ), openness to experience ( $\beta=-0.01$ ), loneliness ( $\beta=0.11$ ) and communal narcissism ( $\beta=0.10$ ) are not significant predictors, and conscientiousness ( $\beta=-0.18$ ), neuroticism ( $\beta=0.17$ ) and need to belong ( $\beta=0.17$ ) are significant predictors of the model, conscientiousness being a negative predictor and neuroticism and need to belong being positive predictors.

Personality traits, loneliness, need to belong and communal narcissism form the 4th Model and explain 18.7% of variance of the criterion variable. The 4th Model is significant and also explains a significant percentage of the variance of criterion variable, the Facebook addiction ( $F_{(8, 233)} = 7.950$ ).

Table 2. Regression analyses with Bf\_E, Bf\_A, Bf\_C, Bf\_N, Bf\_O, Lon, NB, CN as predictors of Facebook addiction (beta's and level of significance reported).

Variables	Facebook Addiction	
	Model 4	B (S)
Bf_E	0.21 (0.25)	0.06
Bf_A	-0.39 (0.24)	-0.11

Bf_C	-0.60 (0.22)	-0.18*
Bf_N	0.50 (0.22)	0.17*
Bf_O	-0.04 (0.18)	-0.01
Lon	0.18 (0.12)	0.11
NB	0.45 (0.18)	0.17*
CN	0.10 (0.06)	0.10
Total R <sup>2</sup> aj.	0.187	

Note. \* $p < .05$ ; \*\* $p < .001$ . Bf\_E – extraversion; Bf\_A – agreeableness; Bf\_C – conscientiousness; Bf\_N – neuroticism; Bf\_O – openness; Lon – loneliness; NB – need to belong; CN – communal narcissism.

We wanted to see if there are differences between men and women in terms of Facebook addiction, so we ran Pearson correlation analysis for each gender. On the Pearson correlation for men, only loneliness ( $r=0.267$ ), need to belong ( $r=0.294$ ) and communal narcissism ( $r=0.204$ ) reflect significant and positive correlations with Facebook addiction. On the other hand, in the case of women, extraversion ( $r=-0.156$ ), agreeableness ( $r=-0.310$ ) and conscientiousness ( $r=-0.347$ ) present strong negative correlations with Facebook addiction and neuroticism ( $r=0.424$ ), loneliness ( $r=0.246$ ) and need to belong ( $r=0.258$ ) reflect significant positive correlations with Facebook addiction.

#### IV. DISCUSSION

The first hypothesis according to which individuals with high levels of agreeableness, neuroticism, openness to experience, loneliness, communal narcissism and need to belong will use Facebook in an addictive way was partially confirmed by results of the study. Neuroticism and need to belong are significant and positive predictors of Facebook addiction. The second hypothesis stated that individuals with low levels of extraversion and conscientiousness may present a higher level of Facebook addiction and was partially supported by results. Conscientiousness constitutes a significant and negative predictor of Facebook addiction. In addition, women with low levels of conscientiousness and high levels of neuroticism proved high levels of Facebook addiction, in comparison with men, whose levels of Facebook addiction were not influenced by the personality traits, loneliness, need to belong or communal narcissism.

These results correspond to those of Bachrach et al. (2012), according to which neurotic people use Facebook in an addictive way because of the possibility to express themselves, to

control the quantity and content of what they share with others. In our opinion, another reason for neurotic individuals being addicted to Facebook is the opportunity they have to detach and relax on Facebook. In terms of conscientiousness, the less conscientious people are spontaneous, more flexible and they don't pay attention to the amount of time spent on Facebook, facts that can lead to high levels of usage (Bachrach et al., 2012). Also, our results partially support the results of Gosling et al. (2011), according to which there are none correlations between personality traits and Facebook addiction.

Results regarding need to belong have been supported by the literature, individuals addicted to Facebook using it to compensate that they do not receive the necessary support in real life and do not have enough relationships to be satisfied and fulfilled (Oldmeadow, Quinn, & Kowert, 2012). Therefore, persons who feel a greater need for belonging will seek forming new relationships through Facebook, to meet people with whom to constantly interact, to get involved in different virtual events and integrate into different groups. Through these Facebook features, people will control when and with whom they want to talk to and balance the need for belong, if they cannot fulfill it in real life (Oldmeadow, Quinn, & Kowert, 2012).

Loneliness and communal narcissism were not significant predictors of Facebook addiction, Ryan and Xenos (2011) getting the same correlation results between loneliness and time spent on Facebook. Lonely and disconnected individuals use Facebook in an addictive way in order to face loneliness, but at the same time, those who do not feel alone, use Facebook as often or even more, to keep social connections (Winerman, 2013).

Thus, the fact that loneliness is not a significant predictor can be explained by the multiple connotations of use based on individual motivations, whether to deal with loneliness or to maintain social relationships. Sheldon (2011) proved that, when deprived of Facebook, the participants felt a decrease in the need to belong, rather than a change in loneliness level.

Although previous researches have supported the hypothesis that Facebook addiction is influenced by narcissism, this study has rejected it. One possible reason would be the type of narcissism tested. There is a possibility that in the case of Facebook addiction, individuals may be driven by agentic narcissistic traits such as self promotion and excessive presentation, in order to attract attention, admiration, proving superiority and uniqueness (Ryan & Xenos, 2011), rather than communal narcissistic traits like satisfying grandiose needs through communal ways, appreciation and admiration for their relationship with the world (Gebauer et al., 2012).

The present study has a series of limitations such as ethnicity of the respondents; only Romanians participated in the research, the small number of male participants compared to the large number of female participants, lack of age division, lack of measuring agentic narcissism.

We consider that further research should introduce independent variables like shyness, self-esteem, agentic narcissism, anxiety or depression etc., should consider analyzing the

differences between different cultures, age categories, should balance the number of men and women that participate in the research and could reverse the place of the variables, Facebook addiction becoming an independent variable, in order to see if it impacts different psychological characteristics or states.

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