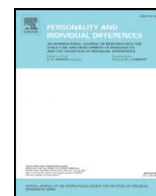




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## Short Communication

# Extraversion, neuroticism, attachment style and fear of missing out as predictors of social media use and addiction



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## ABSTRACT

Social media use is prevalent in today's society and has contributed to problems with social media addiction. The goal of the study was to investigate whether extraversion, neuroticism, attachment style, and fear of missing out (FOMO) were predictors of social media use and addiction. Participants in the study ( $N = 207$ ) volunteered to complete a brief survey measuring levels of extraversion, neuroticism, attachment styles, and FOMO. In the final model of a hierarchical regression, younger age, neuroticism, and fear of missing out predicted social media use. Only fear of missing out predicted social media addiction. Attachment anxiety and avoidance predicted social media addiction, but this relationship was no longer significant after the addition of FOMO.

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Social media use may lead to social media addiction, which involves being unable to control one's social media use and using it to such an extent that it interferes with other life tasks (Ryan, Chester, Reece, & Xenos, 2014). This paper will examine predictors of social media use and addiction focusing on the personality traits of extraversion and neuroticism, attachment style, and the fear of missing out (FOMO).

Extraversion has been shown to be positively related to both social media use and addictive tendencies (Kuss & Griffiths, 2011; Ryan & Xenos, 2011; Wilson, Fornasier, & White, 2010). Extraverts appear to use social media in order to enhance their social connections (Kuss & Griffiths, 2011). Neuroticism has also been shown to be positively associated with social media use (Tang, Chen, Yang, Chung, & Lee, 2016) and internet addiction (Andreassen et al., 2013; Tsai et al., 2009). People high in neuroticism may be drawn to use social networking sites like Facebook because they hope to receive feedback and reassurance from others and because it is easier for them to communicate through a screen than it is for them to communicate face-to-face (Kandell, 1998).

Because social media is generally used to maintain and develop relationships, attachment style may affect its use. Anxiously attached people are insecure in relationships and often seek reassurance. They may use social media to maintain relationships and seek social feedback. Furthermore, communication through social media can help those who are anxious spend more time thinking about what they want to say and

avoid awkward pauses that may occur in real conversations (Kandell, 1998). Research has found that anxious attachment is related to using and seeking feedback on social media (Hart, Nailling, Bizer, & Collins, 2015; Oldmeadow, Quinn, & Kowert, 2013). The relationship between anxious attachment and addiction is less clear. While some research has found that insecure attachment is related to problematic internet use and internet addiction (Lin, Ko, & Wu, 2011; Schimmenti, Passanisi, Gervasi, Manzella, & Famà, 2014), another study found no differences in social media addiction between attachment styles (Baek, Cho, & Kim, 2014).

Those high in attachment avoidance consider themselves self-sufficient and avoid intimacy and closeness. One might assume that they may not wish to use social media as they may not be interested in developing and maintaining relationships. Nevertheless, social media may be used by those with avoidant attachment as a way to keep people in their lives, but at a distance (Nitzburg & Farber, 2013). In some research, avoidant attachment has been linked with less social media use (Hart et al., 2015). However, other research found that those who were both anxious and avoidant used social media more than those who were solely avoidant (Baek et al., 2014).

When people are anxious about relationships, they likely fear being socially excluded. Fear of missing out (FOMO) is a fear that other people are having fun without you (Przybylski, Murayama, DeHaan, & Gladwell, 2013). FOMO has been linked to increased social media use (Przybylski et al., 2013), as well as to problematic smartphone use (Elhai, Levine, Dvorak, & Hall, 2016). However, to our knowledge, no research has specifically examined the relationship between FOMO and social media addiction.

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In our study, we examined the effects of extraversion, neuroticism, attachment styles, and levels of FOMO on both social media use and addiction. We used hierarchical regression, first entering extraversion and neuroticism, then anxious and avoidant attachment, and lastly, FOMO. We hypothesized that each variable would be a significant predictor of both use and addiction at each step.

## 1. Method

### 1.1. Participants

We recruited 207 participants (50 men, 155 women, and two who indicated that their gender was “other”). The majority were recruited from a general psychology subject pool in the Southeastern U.S. ( $n = 118$ , 57%) and 89 (43%) were recruited online through Facebook or Reddit. Participants ranged in age from 17 to 49, ( $M = 22.15$ ,  $SD = 7.38$ ). Most identified as White/Caucasian (79.2%) and 82% were currently enrolled in college.

### 1.2. Procedure

We posted the link to the survey on Facebook and Reddit. The survey was also made available to general psychology students in order to receive partial credit for their course. We merged the data for both of the groups and differences between the groups were tested before our primary data analysis.

### 1.3. Materials

#### 1.3.1. Fear of Missing Out Scale

This scale (Przybylski et al., 2013) consisted of 10 items measured on a 5-point scale (1 = *not at all true* to 5 = *extremely true*). The Cronbach's alpha was 0.91.

#### 1.3.2. Revised version of the Experience in Close Relationship Scale

The Experience in Close Relationships Scale (Brennan, Clark, & Shaver, 1998) was developed to assess attachment anxiety and avoidance. We utilized a revised version that has been used in research about social media use (Baek et al., 2014). It consists of 5 items measuring anxiety and 5 items measuring avoidance on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*). The Cronbach's alphas were 0.81 for anxiety and 0.79 for avoidance.

#### 1.3.3. The Big Five Inventory

We used the Big Five Inventory (John & Srivastava, 1999) to measure extraversion (8-items) and neuroticism (8-items). It was rated on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*). The Cronbach's alphas were 0.88 for extraversion and 0.84 for neuroticism.

#### 1.3.4. Bergen Social Media Addiction Scale

This 6-item scale included items measuring whether one was troubled when one could not use social media and whether it interfered

with one's job or studies (Andreassen, Torsheim, Brunborg, & Pallesen, 2012). It was rated on a 5-point scale (1 = *very rarely*, 5 = *very often*). The Cronbach's alpha was 0.88.

#### 1.3.5. Social Media Engagement Scale

This 5-item scale measured the extent to which an individual uses social media in their daily lives (Przybylski et al., 2013). It was rated on an 8-point Likert scale (1 = *not one day last week*, 8 = *every day last week*). The Cronbach's alpha was 0.85.

## 2. Results

Bivariate correlations between all variables can be seen in Table 1. In order to investigate whether the two subsamples differed, we ran a MANOVA with recruitment style (general psychology or online) as the independent variable and all other variables as the dependent variables. The results were significant,  $F(8,198) = 6.77$ ,  $p < 0.001$ . Univariate indicated that the subsamples differed significantly by age  $F(1,205) = 48.36$ ,  $p < 0.001$  and social media engagement  $F(1,205) = 4.74$ ,  $p = 0.031$ . Those recruited online were older ( $M = 25.85$ ,  $SD = 9.28$ ) than those recruited through the subject pool ( $M = 19.36$ ,  $SD = 3.59$ ), and were less engaged with social media (5.03 vs. 5.65). With age covaried, the MANCOVA was not significant  $F(7,198) = 0.86$ ,  $p = 0.54$  meaning age accounted for the differences between the subsamples. Thus, age was included as the first step to control for its effects in our regression analyses.

The hierarchical regressions for both social media use and addiction can be seen in Table 2. For social media use, we found that age was significant at the first step such that younger people used social media more. After adding extraversion and neuroticism, age remained a significant predictor and both extraversion and neuroticism were significant. At the third step, the addition of attachment avoidance and anxiety was not significant, only neuroticism and extraversion were significant predictors at this step. The addition of FOMO in the final step was significant. The final model accounted for 17.1% of the variance  $F(1,200) = 11.13$ ,  $p < 0.001$  in social media use. Age, neuroticism, and FOMO were significant in the final model.

For social media addiction, age was significant at the first step such that younger people were more likely to be addicted. After adding extraversion and neuroticism, a statistically significant increase, age did not remain a significant predictor but neuroticism was significant. The addition of attachment avoidance and anxiety at the third step resulted in a statistically significant increase. Extraversion, avoidance, and anxiety were all significant at this step. The addition of FOMO in the final model was significant. The final model accounted for 31.4% of the variance in social media addiction,  $F(1,200) = 52.01$ ,  $p < 0.000$ , and FOMO was the only significant predictor.

## 3. Discussion

The goal of our study was to examine whether extraversion, neuroticism, attachment style, and FOMO were significant predictors of social

**Table 1**  
Inter-correlations among study variables.

	1	2	3	4	5	6	7	8
1. Age	–	–0.005	–0.136	–0.004	–0.253**	–0.174*	–0.163*	–0.220**
2. Extraversion		–	–0.239**	–0.370**	–0.075	0.010	0.062	0.130
3. Neuroticism			–	0.274**	0.587**	0.481**	0.274**	0.250**
4. Avoidance				–	0.186**	0.154*	0.160*	–0.078
5. Anxiety					–	0.643**	0.342**	0.262**
6. FOMO						–	0.560**	0.357**
7. Addiction							–	0.575**
8. Engagement								–

Note.  $n = 207$ .

\*  $p < 0.05$ .

\*\*  $p < 0.01$ .

**Table 2**  
Regression analyses.

Variable	Regression analyses			
	Social media use		Social media addiction	
	$\beta$	$p$	$\beta$	$p$
Step 1:				
Age	−0.22	0.001	−0.16	0.02
	$R^2 = 0.044$ ; $F = 10.4^{***}$		$R^2 = 0.027$ ; $F = 5.62^*$	
Step 2:				
Age	−0.18	0.005	−0.12	0.07
Extraversion	0.19	0.004	0.13	0.07
Neuroticism	0.27	<0.001	0.29	<0.001
	$\Delta R^2 = 0.085$ ; $\Delta F = 9.94^{***}$		$\Delta R^2 = 0.081$ ; $\Delta F = 9.19^{***}$	
Step 3:				
Age	−0.16	0.20	−0.09	0.20
Extraversion	0.15	0.03	0.16	0.02
Neuroticism	0.22	0.01	0.13	0.13
Avoidance	−0.11	0.14	0.14	0.05
Anxiety	0.12	0.14	0.23	0.0
	$\Delta R^2 = 0.017$ ; $\Delta F = 2.05$		$\Delta R^2 = 0.053$ ; $\Delta F = 6.37^{**}$	
Step 4:				
Age	−0.15	0.02	−0.08	0.19
Extraversion	0.12	0.09	0.10	0.12
Neuroticism	0.17	0.04	0.03	0.72
Avoidance	−0.12	0.09	0.12	0.07
Anxiety	−0.03	0.76	−0.07	0.44
FOMO	0.28	0.001	0.56	<0.001
	$\Delta R^2 = 0.045$ ; $\Delta F = 11.13^{**}$		$\Delta R^2 = 0.173$ ; $\Delta F = 52.01^{***}$	

\*  $p < .05$ .\*\*  $p < .01$ .\*\*\*  $p < .001$ .

media use and addiction. Previous research has shown that extraversion is a predictor of social media use and addiction (Wilson et al., 2010). Extraversion was a significant predictor of use and addiction, but only predicted addiction at the third step. Extraverted individuals may be more likely to use social media because they crave social interaction; too much use may lead to addiction. On the other hand, addiction may be less of a concern for extraverts because they are also comfortable interacting in person.

We found that neuroticism was a predictor of use, and predicted addiction when only age and personality variables were entered. This is consistent with previous research that has shown that neuroticism was a predictor of social media use (Tang et al., 2016) and internet addiction (Andreassen et al., 2013). People high in neuroticism may have a lot of anxiety about personal relationships and social media can be used to frequently stay in touch with others. On the other hand, once attachment styles were entered into the regression, neuroticism no longer predicted social media addiction. Thus, the effects of neuroticism on social media addiction may be mediated through insecure attachment styles.

Interestingly, we found that both anxious and avoidant attachment were predictors of social media addiction before FOMO was included in the model. This is inconsistent with some research that found no relationships between attachment styles and social media addiction (Baek et al., 2014), but consistent with other research that found that insecure attachment styles were associated with internet addiction (Lin et al., 2011; Schimmenti et al., 2014). It may be that avoidant attachment is related to social media addiction only when individuals are also high in attachment anxiety. For such people, social media can be a way to feel connected to others but not actually engage in social interaction (Nitzburg & Farber, 2013).

Fear of missing out is a relatively newly operationalized variable and previous research showed that it had a positive relationship with social media use (Przybylski et al., 2013). FOMO predicted social media use and addiction above and beyond personality traits and attachment style. Furthermore, our study predicted a greater proportion of the variance in social media addiction than has been found in previous

research that has focused on either attachment style or personality characteristics (e.g., Andreassen et al., 2013; Schimmenti et al., 2014). Although research has found that FOMO is linked to problematic smartphone use (Elhai et al., 2016), as far as we know, this is the first study specifically looking at FOMO and social media addiction.

There were a few limitations to our study. One limitation was having two separate recruitment styles. The participant pool was younger and this accounted for the differences between our recruitment styles on all other variables. By controlling for age, we attempted to account for this limitation. Another limitation was that the majority of our participants were white, college-age, females. Because of this, our study may not generalize to other sociodemographic groups. Lastly, our data is limited by the use of self-report measures; the validity of our data is contingent on the accuracy of our participants' reports.

Future research should continue to look at FOMO as a contributor to social media use and addiction using more extensive and comprehensive measures. FOMO has recently been linked to negative consequences associated with mobile phone use (Oberst, Wegmann, Stodt, Brand, & Chamarro, 2017), and has been linked to distracted driving (Przybylski et al., 2013). It may also be useful to look at predictors of FOMO. For example, while this study investigated attachment in current close relationships, the history of attachment style one had with one's parents may influence the extent to which people fear social exclusion. Furthermore, other aspects of personality may contribute to this dynamic such as narcissism and loneliness as well as other components of the Big Five such as conscientiousness or agreeableness (Ryan & Xenos, 2011). Finally, a mediation model could be tested where neuroticism may predict attachment anxiety, which may, in turn, predict social media addiction.

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