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Psychological Predictors of Young Adults' Use of Social Networking Sites

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Abstract

Young people are increasingly using social networking sites (SNSs), like Myspace and Facebook, to engage with others. The use of SNSs can have both positive and negative effects on the individual; however, few research studies identify the types of people who frequent these Internet sites. This study sought to predict young adults' use of SNSs and addictive tendency towards the use of SNSs from their personality characteristics and levels of self-esteem. University students ($N = 201$), aged 17 to 24 years, reported their use of SNSs and addictive tendencies for SNSs use, and completed the NEO Five-Factor Personality Inventory¹ and the Coopersmith Self-Esteem Inventory.² Multiple regression analyses revealed that, as a group, the personality and self-esteem factors significantly predicted both level of SNS use and addictive tendency but did not explain a large amount of variance in either outcome measure. The findings indicated that extraverted and unconscientious individuals reported higher levels of both SNS use and addictive tendencies. Future research should attempt to identify which other psychosocial characteristics explain young people's level of use and propensity for addictive tendencies for these popular Internet sites.

The proliferation of social networking sites (SNSs) has created a phenomenon that engages millions of Internet users around the world, especially young people.^{3,4} Given the popularity of these sites and their importance in young people's lives to facilitate communication and relationships, it is important to understand the factors influencing SNS use, especially at higher levels, and to identify those who may be prone to developing addictive tendencies towards new communication technologies.⁵ As with other communication technologies,^{6,7} a useful starting point may be to examine the role of personality traits and self-esteem on young people's SNS use.

Researchers have confirmed repeatedly that the five-factor model of personality adequately accounts for and explains personality by taking the approach that personality consists of five traits; openness to experience (pursuing and appreciating all types of experience), conscientiousness (control, regulation and direction of goals and impulses), extraversion (amount and intensity of interpersonal interactions), agreeableness (the type of interactions a person prefers to have with others), and neuroticism (degree of emotional adjustment and instability).⁸ Self esteem is defined as the subjective evaluation a person makes and maintains about him or herself, and the extent of belief in their capability, worth, and significance, which is conveyed through their attitudes and verbal behaviour.² Due to the recent introduction of SNSs, research investigating the intrapersonal characteristics of people who access these sites is limited. However, research investigating the personality and self-esteem of people who access the wider Internet, as well as use other technological innovations to connect with others (such as mobile phones), has been growing.

For instance, it was found that extraversion was negatively related to higher levels of Internet use among undergraduate students, suggesting that introverts had more spare time or were attracted to the Internet's online appeal.⁹ Agreeableness was

also negatively related to higher levels of use, suggesting that those who do not get along with others spend their time on the Internet as there are few demands for agreeable behaviour. Lower scores on conscientiousness were also associated with high Internet use, perhaps due to the Internet's limited rules and unstructured policies. Similarly, other researchers revealed that introversion predicted general Internet use but also found neuroticism and openness to be predictors of time spent online.¹⁰

Other studies have distinguished between the various ways the Internet can be used and intrapersonal characteristics. For example, it was found that introverted and highly neurotic females frequently utilise the social services available on the Internet.¹¹ These researchers suggested that introverted and neurotic females may feel protected and safe when using the Internet to socially interact with others as it is essentially an anonymous, virtual environment. Other researchers have found that openness to experience was positively and significantly related to the entertainment functions provided by the Internet,¹² suggesting that young adults using SNS might score high on openness to experience given that SNSs are a new innovation.

One study found that extraverted people used the Internet for instrumental purposes, such as researching, and extraverts rejected the use of the Internet for social purposes as they preferred social contact in more traditional contexts.¹³ A separate study also supported the finding that extraverts reject the Internet as a medium by which to communicate with others by identifying that extraverted young people, as opposed to introverts, preferred communicating with others offline.¹⁴ In addition, two studies found that neurotic people reported being comfortable and feeling a sense of belonging when interacting with others via the Internet.^{15,13}

A number of studies have investigated the intrapersonal characteristic of self-esteem as a possible predictor of Internet use. For example, one study investigated

the communication choices participants made (face-to-face, email, letter, or telephone) and self-esteem and found that participants with low self-esteem showed a greater preference for email communication.¹⁶ Similarly, another study found that young people with low levels of self-esteem reported a high level of instant messaging use.⁷ These findings indicate that the Internet has the potential to relieve some of the social anxiety that people with low self-esteem often experience in more traditional interpersonal situations.¹⁷

Like all Internet applications, overuse of SNSs can lead to an array of social, psychological, physical, and other problems for young people.¹⁸ Griffiths¹⁹ has speculated that the structural and design characteristics of a website seem to be particularly addictive. For example, he states that an interactive experience can satisfy the user's personal needs and, therefore, reinforce the behaviour. This argument implies that SNSs can potentially encourage addictive tendency due to the fact that these Internet sites promote interactivity.

Although numerous definitions of Internet addiction exist, many of them refer to the substance-dependence criteria of the Diagnostic and Statistical Manual Fourth Edition (DSM-IV) to define it.¹⁹ This definition purports that Internet addiction, like other technological addictions, consists of six central components: salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse.^{19,20} In line with this definition, some researchers revealed that the symptoms of withdrawal (negative physiological or psychological response to not engaging in the behaviour); loss of control (engaging in the behaviour more than intended); and salience (the activity dominating thoughts or behaviour) were indicative of mobile phone addiction.⁵ Therefore, in order to adequately assess not only level of SNS use, but addictive tendencies towards their use, the scale developed by Walsh, White and Young⁵ (see

also Ehrenberg et al.⁷) has been adapted for use in the present study as a measure of SNS addictive tendencies.

Hardie and Tee²¹ found that high levels of emotional loneliness, social anxiety, neuroticism, and low levels of extraversion contributed to Internet addiction. These results are perhaps unsurprising given introverts often avoid large social occasions and prefer to spend time in solitary activity, thus making them prone to Internet addiction.¹¹ Likewise, it is not entirely unexpected that highly neurotic people would be prone to Internet addiction as these people often feel they are misinterpreted in face-to-face social situations and, therefore, might prefer online interactions where they feel less restrained.¹³ With similar results to other studies,^{22,23} Armstrong, Phillips, and Saling²⁴ found that low self-esteem predicted addictive Internet use as measured by the Internet Related Problem Scale (IRPS). Similar to Walsh et al.'s⁵ measure of addictive tendencies, the IRPS captures some of the DSM-IV criteria for substance-dependence such as withdrawal, craving, and tolerance. In addition, Ehrenberg et al.⁷ found that low levels of self-esteem predicted young adults' instant messaging addictive tendencies.

Drawing on previous research examining related communication technologies, this study aims to test the role of personality and self esteem in the context of young adults and their level of SNS use. In addition, the study aims to investigate whether these intrapersonal characteristics predict young adults' addictive tendencies towards the use of SNSs.

Materials and Methods

Participants

A total of 201 (46 males, 153 females) currently enrolled students at a major Australian university were recruited for this study (ethics approval number:

0800000159). Inclusion criteria required participants to be aged between 17 to 24 years ($M = 19.07$, $SD = 1.86$) and to have a personal page on a SNS site. On average, participants reported using their SNS 4 days per week ($M = 4.49$, $SD = 2.06$) and reported logging on to their SNS nearly 10 times per week ($M = 9.97$, $SD = 10.21$).

Measures

NEO Five-Factor Inventory (FFI). The 60-item NEO-FFI¹ measured participants' level of agreement (1 *strongly disagree* to 5 *strongly agree*) for statements on five 12-item scales: Neuroticism ($\alpha = .85$), Extraversion ($\alpha = .78$), Openness ($\alpha = .69$), Agreeableness ($\alpha = .75$) and Conscientiousness ($\alpha = .84$).

Coopersmith Self-Esteem Inventory (SEI). The 25-item SEI² assessed participants' evaluative attitudes towards themselves (*like me* or *unlike me*) in areas of academic, social, family, and personal experience ($\alpha = .85$).

Time spent using SNSs. Participants reported the average number of hours per week they spend using their SNS.

Addictive tendencies scale. Based on previous research,^{5,7} the addictive tendencies scale ($\alpha = .76$) comprised three items measuring level of salience ("One of the first things I do each morning is log onto a social networking internet site (e.g. MySpace or Facebook)"), loss of control ("I find it hard to control my use of a social networking site (e.g. MySpace or Facebook)"), and withdrawal (I feel lost when I cannot access my social networking site (e.g. MySpace or Facebook)).

Results

Multiple Regression Analysis for Time Spent Using Social Networking Sites

Given its substantial positive skew, an inverse transformation was applied to the dependent variable of time spent using a SNS. A standard multiple regression was performed to examine the impact of the personality factors (openness to experience,

conscientiousness, extraversion, agreeableness, neuroticism) and self-esteem on the amount of time (in hours) participants spent using a SNS per week (see Table 1). As a group, these variables significantly predicted participants' SNS use, $F(6, 192) = 3.14$, $p < .01$, accounting for 8.9% of the variance. The significant predictors were conscientiousness and extraversion. Participants scoring lower on conscientiousness and higher on extraversion reported spending more time using a SNS.

 Insert Table 1 about here

Multiple Regression Analysis for Social Networking Site Addictive Tendencies

A standard multiple regression was performed also examining the impact of personality factors and self-esteem on participants' SNS addictive tendencies (see Table 1). As a group, these variables significantly predicted participants' SNS addictive tendencies scores, $F(6, 194) = 2.99$, $p < .01$, accounting for 8.5% of the variance. The significant predictors were conscientiousness and extraversion. Participants scoring lower on conscientiousness and higher on extraversion reported stronger addictive tendencies towards using SNSs.

Discussion

The aim of the present study was to explore whether the personality and self-esteem of young adults can predict time spent using SNSs and addictive tendencies towards the use of SNSs. Participants scoring higher on extraversion spent more time using a SNS, a finding inconsistent with previous researchers who have typically concluded that extraverts do not view the Internet as a suitable replacement for face-to-face interactions.¹³⁻¹⁵ The findings of the present study suggest, however, that SNS may offer something unique to the wider Internet which makes them more appealing to extraverts. For example, because extraverts tend to require a high level of

stimulation and a large social network,⁸ the numerous functional abilities and unlimited contact with friends may be specifically attracting their attention. Based on the conceptualisation of Griffiths²⁰ that the internet is a tool assisting people to access their objects of interest, it is likely that extraverts may become overly involved with the opportunity to connect with/reach out to others, as well as present and display information about themselves via SNSs. Participants scoring low on conscientiousness also were found to spend an increased amount of time using a SNS, in line with previous research which found that unconscientious people are frequent users of the general Internet.⁹ It may be that students who score low on conscientiousness use SNS to occupy their time whilst procrastinating about completing other tasks, such as study.

Openness to experience did not have any impact on SNS use, which is inconsistent with previous research investigating Internet use.¹² It may be that SNS may no longer be as 'new' an experience for some young people, so has lost some of its appeal for those eager to experience even newer activities. Agreeableness did not predict SNS use either, a finding inconsistent with Landers and Lounsbury⁹ who found disagreeable people to spend more time on the Internet. However, these researchers did not differentiate between the different uses of the Internet suggesting that, whilst disagreeable people may use the Internet more often, they are not necessarily using it to engage with other people socially and may be using it for more functional purposes such as business-related interactions.

Neuroticism was not associated with increased levels of SNS use. Similar to agreeableness, previous research has demonstrated neuroticism to be significantly associated with time spent on the Internet.^{11-13,15} However, Tuten and Bosnjak¹² found that neuroticism was only a predictor of using the Internet for the specific

purpose of seeking information (rather than socialising). It is likely that, due to their insecure and anxious nature,⁸ neurotic young adults may not like the idea of posting photos and information about themselves on a SNS and instead prefer to use the Internet for other functions. Self-esteem did not influence SNS use, a finding inconsistent with previous research which has indicated that people with low self-esteem prefer online social interaction over face-to-face exchanges.^{16,17} As one researcher found, self-esteem can either increase or decrease depending on the tone of feedback received on people's virtual profiles,²⁵ therefore it is possible that both people with high levels and low levels of self-esteem seek to use SNSs to confirm or as a means of increasing their feelings of self-worth in the hope of positive feedback from other users.

The personality traits and self-esteem explained slightly less variance in addictive tendencies than they did in time spent using a SNS. Similar predictors influenced people's addictive tendencies as for their level of use. Extraversion was found to be associated with addictive tendencies, suggesting that extraverts may become overly-reliant on SNSs as the interactive experience meets their need for stimulation and social interaction. Low scores on conscientiousness significantly predicted addictive tendencies. It is plausible that unconscientious young adults demonstrate addictive tendencies towards to the use of SNS as unconscientious people tend to lack self-control.²⁶ There was no relationship between openness to experience, agreeableness, neuroticism or self-esteem to self-reported addictive tendencies.

In general, the intrapersonal characteristics accounted for only a small proportion of variance in both behavioural outcomes, suggesting that there are other factors underlying people's SNS usage, especially given evidence of other potential influences (e.g., motivation to communicate).²⁷ Some important practical applications,

however, can be gained from the study's findings. For example, knowing that extraversion and unconscientiousness are predictors of SNS use and addictive tendencies may mean that web developers can modify the features of their SNS to further attract people with these types of personalities. For example, SNS sites could be designed to display more stimulating and interactive features (e.g., web-cams) that would appeal to extraverts or include more time-consuming games to appeal to those who are less conscientious. Importantly, the present findings can be used to inform psychologists, counsellors, and educators within schools and universities of the types of young people who are likely to use SNSs at higher levels or develop a behavioural addiction towards the use of SNS. For example, as a preventative measure to combat the overuse of the Internet, which often leads to sedentary behaviour, schools and universities could encourage extraverts to interact and socialise with others more offline while unconscientious young people can be taught better time management and organisational skills to avoid procrastination via SNS use.

This study is one of the first to identify the intrapersonal characteristics of people who frequent SNSs, as well as those people who are likely to demonstrate SNS addictive tendencies and used a population that typically access SNSs. Despite these strengths, this study had several limitations. The generalisation of the study's results is limited due to the fact that the sample was predominately female and solely university students. Further, the scale reliability for addictive tendencies was slightly lower than expected and item examination suggests that is possible that the scale may reflect impulse control difficulties in respect to SNS use rather than addictive tendencies per se. Future research should include more participants from a range of ages, locations, and a more balanced gender ratio. In addition, longitudinal studies could be conducted to establish when, and for what reasons, frequent users and those

with addictive tendencies reduce the time they spend using the sites and how any addictive tendencies are managed. More research is needed to establish valid and reliable measures of the addictive tendencies construct. Furthermore, to yield more accurate measures of use, future research should utilise objective measures (e.g., diary records or a computer program that records use unobtrusively).

Although personality and self-esteem were significant predictors of both time spent using SNSs and addictive tendencies, they did not explain a large amount of variance, indicating there are other factors that account for young adults' use of SNSs which should be examined in future. For example, the SNS functions of posting information and photos about oneself may attract the attention of narcissistic people.²⁸ Also, sensation seekers have characteristics in common with extraverts, such as the need for stimulation and a large number of friends.²⁹ In summary, although personality and self esteem explained only a small amount of variance in both SNS use and addictive tendencies, extraversion emerged as a positive predictor, and conscientiousness a negative predictor, of both time spent using SNSs and SNS addictive tendencies. However, despite these findings and their practical implications, it is imperative for researchers to continue to identify the psychosocial factors that influence some young adults to use at high levels, and potentially develop addictive tendencies towards this worldwide Internet phenomenon.

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Table 1

Multiple Regression Analysis for Variables Predicting Time Spent Using a Social Networking Site (SNS) and SNS Addictive Tendencies

Variable	<i>R</i>	<i>R</i> ²	β	<i>t</i>	<i>p</i>
Prediction of Time Spent using a SNS					
Openness to experience	.30	.09	-.11	-1.47	.14
Conscientiousness			-.18	-2.40	.02
Extraversion			.27	3.34	.00
Agreeableness			.02	0.23	.82
Neuroticism			.16	1.66	.10
Self-esteem			.05	0.47	.64
Prediction of SNS Addictive Tendencies					
Openness to experience	.29	.09	-.06	-0.82	.41
Conscientiousness			-.15	-2.02	.05
Extraversion			.28	3.45	.00
Agreeableness			.04	0.49	.62
Neuroticism			.14	1.46	.15
Self-esteem			-.09	-0.87	.39