

Who Uses Social Networking Sites? Exploring Associations among Personality and the Relationship with Facebook, Twitter, and Instagram

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Abstract

Social network sites are attracting the attention of numerous researchers. Recently, several studies have examined how people are forming identities on social networking sites. Therefore, greater levels of variable specification are required to further the research on this topic. Testing the relationships among key variables is important when trying to understand these online social forums. Although there has been a rapid growth in the use of Facebook, Twitter, and Instagram, psychological theory explaining the use of social networks lags. Therefore, the purpose of this research is 1) to examine how personality traits influence which type of social network site individuals will use, and 2) to investigate whether specific social network sites are eliciting the display of particular personality characteristics. Fifty-five participants were recruited through social media (i.e., Facebook) and 239 participants were obtained from a Western University to participate in a survey. Researchers found no associations between overt narcissism and having social network accounts. Surprisingly, there was significant correlations between having personality characteristics of both conscientiousness and honesty and using Instagram. Finally, there was a significant correlation amongst covert narcissism and using Facebook. By recognizing relationships between variables such as personality and social network site usage, psychologists can work towards understanding how the online web is changing our social lives and social behaviors. Key Words: Narcissism, Social Network Sites, Personality

Social network sites allow individuals the ability, amongst others, to (a) create an individual web page, (b) communicate with people across the world simultaneously, and (c) post self-relevant information at the touch of a button. The effortless access to social networks has attracted over 2.3 billion users and this number is growing daily (Internet World Stats, 2014). This may be due to these sites becoming one of the primary venues in which people interact with one another, establish their identities and friendships, and influence peers. The rapid growth in social network sites (SNS) has begun to clearly introduce a change in our social lives (Amichai-Hamburger, Wainapel, & Fox, 2002; Hamburger & Ben-Artzi, 2000), and raises questions about the impact social networking has on the psyches of current and future generations (Barth, 2015).

The first objective of this study is to identify how personality characteristics relate to which type of SNS individuals use. Several researchers in the last decade have focused on personality in relation to online networks and realized the importance of such research. Specifically examining the “Big Five” in relation to Facebook (Ryan & Xenox, 2011; Ross et al., 2009), The Eysenck Personality Questionnaire–Revised impact on social interaction (Amichai-Hamburger, 2002), and other personality traits such as narcissism in relation to SNS (Buffardi & Campbell, 2008; Mehdizadeh, 2010).

To the author’s knowledge, no one has investigated the additional personality variables within the HEXACO model, which is a six-dimensional model of human personality, and a modification of the Big Five (Lee & Ashton, 2007) or looked at overt compared to covert narcissism in relation to online networks. Moreover, current research is limited and focused on very specific variables such as only college students and only Facebook (Ross et al., 2009)

This study will focus on three SNS: Facebook, Twitter, and Instagram. These three sites were chosen in this research because they are three of the top sites used by the adult population (Pew, 2015). Of these, Facebook is the largest social network with 1.11 billion users worldwide, 84% of whom fall between the ages of 18–29 (Guimaraes & Age, 2014). Additionally, personality characteristics such as narcissism, emotionality, extraversion,

agreeableness, conscientiousness, honesty-humility, and openness to experience will be examined with the relation to the three social networks. Each personality characteristic has additional facets that will be examined in the study.

It is important to note that for the focus of this study, narcissism will be looked at in two dimensions, because research has begun to conceptualize that there are two forms of trait-based narcissism: overt and covert (Wink, 1991). Overt narcissism is the most obvious of narcissistic personality disorders, manifesting as grandiose behavior and characterized by the direct expression of exhibitionism, self-importance, and preoccupation with receiving admiration from others (Wink, 1996), whereas covert narcissism is seen as more of the “shy” narcissist. In contrast, the covert narcissist lacks the confidence to present such grandiose behavior and instead appears to be hypersensitive, anxious, and insecure, but with personal relationships characterized by self-indulgence, conceit, and arrogance.

Literature Review

The existence of SNS has developed quickly, while the notion of an alternative form of social communication continues to reveal complexity. Researchers from different disciplines are barely keeping up with these overwhelming growths by trying to understand the different aspects of SNS, including descriptive analysis of users, motivations, identity presentation, social interactions, implications, and privacy (Ryan & Xenox, 2011; Leung, 2013; Dalton & Crosby, 2013). Many variables influence why people are beginning to spend more and more time on these online accounts. It is important to begin to conceptualize and constructively break down the variables that are associated with using popular online SNS such as Facebook, Instagram, and Twitter. SNS encourages users to highlight only certain aspects of their lives and personalities, thus a person’s personality plays a vital role in how they use SNS. By recognizing relationships between variables such as personality and SNS, psychologists can work towards understanding how the online web is changing our social lives and social behaviors. A study by the U.S. consumer technology adoption specialists at Pew Research Center (2007) stated: “10 years ago, only 7% of the US population used one or more social networking sites. Now that figure has increased almost tenfold, to 65%. Of those individuals who use the internet, 76% of Americans use social networks.” The rate at which people are actively using SNS is increasing significantly. As technology continues to advance, so will this number. With advancements in smartphones, people can now be online, anytime and anywhere. There are millions of applications that can be downloaded to smartphones at no cost. Many of the applications incorporate some form of SNS, which are now a primary medium for communication and way of networking.

Due to the huge shift in the way we communicate and socially interact with one another, there are current conversations taking place investigating the personalities of millennials and the relationship with online social network use. Researchers and media are claiming that the millennials are ‘generation me’ and tend to be more narcissistic than previous generations (Twenge & Campbell, 2009). Additionally, previous researchers found that narcissism was a strong predictor of social network usage (Buffardi & Campbell, 2008), and people who are more narcissistic reported higher frequency of online content production (Poon & Leung, 2011). Researchers have also indicated the Dark Triad, commonly known as the three personality traits of narcissism, Machiavellianism, and psychopathy, are positively related to Twitter usage (Sumner, Byers, Boochever, & Park, 2012). The impact of social network use and rise in narcissism is still not completely understood.

Because SNS have changed our social lives, it is important to work toward understanding who is using these online sites, how it is affecting individuals, and how it is affecting society. To examine the personalities of people using SNS, an appropriate approach is to investigate the objectives and underlying assumptions that both the research and participants hold. Therefore, this research will cover additional facets of narcissism, the six-dimensional model of human personality inventory, and a larger range of the population for more generalizable results.

Social networking sites

The movement of individuals, especially the millennials, onto the Internet has occurred in staggering proportions. With the ubiquitous use of SNS among individuals and such easy accessibility to communication via smartphones, SNS has begun to substantially change the ways individuals and communities operate. As of March 2016, on average, Facebook had more than 1.09 billion daily active users (Facebook, 2016); Instagram had more than 400 million monthly active users and 80 million daily shared photos with 3.5 billion daily likes (Instagram, 2016); and Twitter had 310 million monthly active users (Twitter, 2016). Dating back ten years ago, 90% of college

students had a Facebook profile (Ellison, Steinfield, & Lampe, 2007), and that number has increased significantly in size since then.

The popularity of such websites has led to the development of numerous SNS that cater to specific populations and certain interests, which is playing a dominant role in people's social landscapes (Lup, Trub, & Rosenthal, 2015). However, past researchers report contradicting results on whether or not social networking is beneficial or detrimental to current generations. As Twenge and Campbell (2009) believe, when it comes to SNS, these online communities may foster a perfect fertile ground for personality traits such as narcissism to take place in the form of self-regulation via social connections.

Coinciding with the growth in SNS popularity, there is a growing body of evidence suggesting a rise in addictive online behaviors (Pantic, 2014; Ryan et al., 2014), which brings up a major concern for the negative impacts of SNS. Especially addiction whereby users, irrespective of their context, manifest symptoms of behavioral addiction (Andreassen, 2015; Ryan, Chester, Reece, & Xenos, 2014). As we perceive it, social network addiction is the compulsive use of SNS that manifests itself in behavioral addiction symptoms. The symptoms include salience, tolerance, conflict, withdrawal, relapse, and mood modification (Griffiths, 2005). The Internet allows the fantasy principle to trump the reality principle, which is why people create their ideal identity, and may be why people choose to spend so much time on these SNS. These online sites emphasize the promotion of presenting the most attractive or cool pictures of oneself. Many researchers believe this "second best self" is part of the link between the increase of narcissistic personality characteristics and SNS usage (Campbell & Twenge, 2009).

Personality

Personality represents the fundamental characteristics that affect human behavior. Hamburger and Ben-Artzi (2000) suggested that Internet use is related to personality, and Amichai-Hamburger (2002) argued that personality is a leading factor in understanding why people behave the way they do on the Internet. Additionally, Rosengren (1974) argued that individual differences, such as age, gender, and personality, influence the use of mass media. This theory has been applied to many forms of mass media such as books, popular culture and television shows. However, with the web dominating so quickly in recent years, there is a deficit in this theory being applied to online SNS. With past literature finding significant correlations between personality and the Internet, it is important to further work towards understanding personality in relation to current popular SNS such as Facebook, Instagram, and Twitter.

During the 1980s and 1990s, the Big Five or Five-Factor Model of personality structure gained most researchers' attention. However, throughout the 21st century there has been ongoing lexically-based investigations being conducted in various languages. These studies, "which are based on variable sets representative of the indigenous personality characteristics of each culture, showed a surprising result: a set of *six* dimensions could be recovered from the personality lexicons of diverse languages" (Ashton et al., 2004). These six cross-language-replicated dimensions are referred to as the "HEXACO" factors (Lee & Ashton, 2004; Lee & Ashton, 2006): Honesty-Humility (H), Emotionality (E), eXtraversion (X), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O). The following table breaks the six dimensions into additional detailed facets.

Table 1. List of HEXACO-PI-R Dimensions and Facets

Personality dimensions	Facets
H – Honesty-Humility	Sincerity, Fairness, Greed Avoidance, Modesty
E – Emotionality	Fearfulness, Anxiety, Dependence, Sentimentality
X – Extraversion	Social Self-Esteem Social Boldness, Sociability, Liveliness
A – Agreeableness	Forgiveness, Gentleness, Flexibility, Patience
C – Conscientiousness	Organization, Diligence, Perfectionism, Prudence
O – Openness to Experiences	Aesthetic Appreciation, Inquisitiveness, Creativity, Unconventionality

Narcissism

Narcissism is, first of all, a personality type, one that reflects a grandiose and an inflated self-concept. Narcissism has been associated with positive and inflated self-views of certain traits such as power, intelligence, and physical attractiveness (Brown & Zeigler-Hill, 2004; Campbell, Rudich, & Sedikides, 2002; Gabriel, Critelli, & Ee, 1994; John & Robins, 1994) as well as a pervasive sense of uniqueness (Emmons, 1984) and entitlement (Campbell,

Bonacci, & Shelton, 2004). Starting with the clinical viewpoint, narcissism was seen as a personality disorder, known as Narcissistic Personality Disorder. The degree to which a person shows signs of being “narcissistic” varies on many different levels. For this research, the subclinical form of narcissism will be discussed. Subclinical narcissism is seen as personality trait and not only in terms of the severe level of those with clinical narcissism. In fact, numerous healthy individuals possess this characteristic. There are a variety of studies that demonstrate the validity of subclinical narcissism as being a normal personality trait (Emmons, 1897; Rhodewalt & Morf, 1995; Watson, Grisham, Trotter, & Biderman, 1984).

Many social-personality theorists state that narcissism in social relationships helps regulate self-esteem, self-concept positivity, or narcissistic esteem (Campbell, 1999; Campbell, Brunell, & Finkel, 2006; Morf & Rhodewalt, 2001; Raskin, Novacek, & Hogan, 1991). Masterson (1988) argued that narcissism might be considered a psychological defense that protects individuals from the fear of abandonment and the painful, depressive state that accompanies it. While on the other hand, many researchers concur that narcissism is associated with interpersonal difficulties (e.g., Campbell & Foster, 2002). The contradicting literature leads to a continuing debate on narcissism and whether it has a potential beneficial or detrimental effect for health in distress (Cain, Pincus, & Ansell, 2008; Campbell, 2001).

Furthermore, many researchers have discussed the rise of narcissism amongst millennials, the generation born in the 1980s and 1990s. Twenge and Campbell (2009), termed this generation as “Generation Me.” In their book *The Narcissistic Epidemic: Living in the Age of Entitlement*, they explain: “that data from 37,000 college students, narcissistic personality traits rose just as fast as obesity from the 1980s to the present” (p. 2). This outcome of the comparison to obesity suggests that narcissism is another American epidemic. The rise in this particular personality trait entails that it is more complex than previously thought and assumptions about its correlation to SNS may also have alternative meanings. Other researchers have found that narcissism is a strong predictor of social network usage (Buffardi & Campbell, 2008), and people who are more narcissistic reported higher frequency of online content production compared to people who are less narcissistic (Poon & Leung, 2011). In addition, researchers have indicated the Dark Triad personality traits are positively related to Twitter usage (Sumner, Byers, Boochever, & Park, 2012).

Narcissism and the number of SNS users are both rising at a parallel level and the research on the relationship between the two variables is controversial. It is hoped that this study will begin to shed light on which websites are fertile grounds for both narcissistic characteristics and begin to set the stage for SNS theory.

Formulation of hypotheses

The purpose of this research is to examine how personality characteristics influence which type of SNS people will use, and to examine if particular SNS are eliciting personality characteristics. Based on the above literature review, I hypothesize that narcissism and extraversion will be associated with increased Twitter use. Additionally, I hypothesize that narcissism, extraversion, and openness to experience will be associated with increased Facebook use. Narcissists are reported to spend more time on SNS and to have multiple accounts. I further hypothesize that overt narcissism, extraversion, and emotionality will be associated with increased Instagram use. Finally, I hypothesize that increased honesty-humility will be associated with lower overall SNS use because of their modesty, and a person higher on conscientiousness will use SNS less because they are worried about deadlines and obligations.

Methods

Participants

A total of 294 self-selected Internet users participated in the study. Participants were recruited in two ways. First, to obtain a generalizable sample, this study collected samples through posts on the author's social media (i.e., Facebook), with no compensation, and resulted in a sample size of 55. In order to increase the sample size, participant recruitment was done through a Western University, using Psychology 101 students from the SONA survey database. SONA Systems is a software used by Boise State, that allows for the set-up of studies, participant recruitment, and the ability to give students credit for their participation. Participants received course credit for their participation and resulted in a sample size of 239.

A total of 277 complete responses were received, comprised of 101 men and 176 women, whose ages ranged from 18 to 70 years old ($M = 22.61$ years, $SD = 9.21$). The majority of participants considered themselves

Caucasian ($N = 228$), and the rest categorized themselves as African American ($N = 4$), American Indian or Alaska Native ($N = 5$), Asian ($N = 2$), Native Hawaiian or Pacific Islander ($N = 1$), Latino ($N = 34$), or Other ($N = 10$).

Procedure

Two different procedures were used for the collection of data. Participants were recruited from either Facebook or a SONA system database, and the procedures differed slightly. First, participants accessed the questionnaire through social media (i.e., Facebook), where they reviewed the conditions for participation and proceeded directly from their personal computer. Before starting the survey, participants encountered an informed consent form. The continuation of the questionnaire signified consent. Participants were then presented with the questionnaires, followed by the demographics section. By using social media and asking participants to share the post, the study created a snowball sampling throughout the country gathering a wide variety of participants over a series of several months. Upon the completion of all questionnaire sections, participants were debriefed. Second, participants were recruited through the university's SONA database, where they were able to review the conditions, consent form, and begin the survey. After finishing the survey and demographic questions, the participants were debriefed and received course credit for their participation.

Measures

Overt narcissism. Overt narcissism was assessed using the Narcissism Personality Inventory (NPI-16), which has acceptable face, internal, discriminant, and predictive validity (Ames, Rose, & Anderson, 2006). The NPI-16 is a forced-choice dichotomous measure of narcissistic tendencies. Example items include "I am more capable than other people" and "There is a lot that I can learn from other people." Higher scores on the NPI indicate a more narcissistic personality. Overall the NPI-16 is both a valid and reliable measure that captures a range of facets of this construct.

Covert narcissism. The Hypersensitive Narcissism Scale (HSNS) was used to assess covert narcissistic tendencies (Hendin & Cheek, 1997). This instrument is a 10-item measure. Examples from the scale include "I dislike sharing the credit of an achievement with others" and "I often interpret the remarks from others in a personal way." Participants rate items on a 5-point scale, 1 (very uncharacteristic or untrue, strongly disagree) to 5 (very characteristic or true, strongly agree).

Personality traits. Personality was assessed using the HEXACO Personality Inventory Revised. The short 60-item self-report scale was used (Lee & Ashton 2007). The scale contains six domains of personality: honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, and openness to experience. Additionally, each domain is made up of four facets. Participants rate items (e.g., "I feel reasonably satisfied with myself overall") on a 5-point scale, 1 (strongly disagree) to 5 (strongly agree). Some of the items were reverse coded to reflect a higher degree of the construct.

SNS usage. Five separate items assessed SNS usage. The first item asked participants if they are registered with any online SNS. Next, participants were asked if they belonged to Facebook, Twitter, or Instagram, which online network they spent the most time on, and lastly, what SNS is their favorite. If at the beginning, the participant answered 'no' to being registered with an online account, they were then asked why they did not have an online account.

Results

A Spearman ρ correlation coefficient was calculated for the relationship between the use of Instagram and having personality characteristics such as covert narcissism, overt narcissism, extraversion, honesty-humility, conscientiousness, openness to experience, agreeableness, and emotionality. Although no significant associations were observed between Instagram use and covert narcissism ($r(275) = .05$ ($p > .05$)), overt narcissism ($r(287) = .10$ ($p > .05$)), emotionality ($r(287) = .06$ ($p > .05$)), openness to experience ($r(287) = .05$ ($p > .05$)), agreeableness ($r(287) = .65$ ($p > .05$)), and extraversion ($r(287) = .02$ ($p > .05$)), significant associations were observed between Instagram use and honesty-humility ($r(287) = -.047$, $p < .05$), conscientious ($r(287) = .04$, $p < .05$), and also having a Twitter account ($r(292) = .00$, $p < .05$).

A Spearman ρ correlation coefficient was calculated for the relationship between the use of Facebook and having personality characteristics such as covert narcissism, overt narcissism, extraversion, conscientiousness, agreeableness, emotionality, honesty-humility and openness to experience. Although no significant associations were observed between Facebook use and overt narcissism ($r(287) = .09$ ($p > .05$)), honesty-humility ($r(287) = .36$ ($p > .05$)), emotionality ($r(287) = .21$ ($p > .05$)), openness to experience ($r(287) = .98$ ($p > .05$)), agreeableness ($r(287) = .38$ ($p > .05$)), conscientiousness ($r(287) = .65$ ($p > .05$)), and extraversion ($r(287) = .78$ ($p > .05$)), significant associations were observed between Facebook use and covert narcissism ($r(275) = .02$, $p < .05$), and also having a Instagram account ($r(292) = .00$, $p < .05$) and Twitter account ($r(292) = .00$, $p < .05$).

A Spearman ρ correlation coefficient was calculated for the relationship between the use of Twitter and having personality characteristics such as covert narcissism, overt narcissism, and the six dimensions of the HEXACO model. There were no significant correlations with any of the variables. Finally, there was a significant correlation between having a Twitter account, and also having an Instagram ($r(292) = .00$, $p < .05$) and Facebook account ($r(292) = .00$, $p < .05$).

Discussion

The purpose of the present study was to examine the influence of personality traits on Facebook, Instagram, and Twitter use, and to investigate if certain SNS are eliciting the display of particular personality characteristics. Surprisingly, the hypothesized significant relationship between narcissism and SNS was absent. Overall, the sample showed no correlation between being an overt narcissist and using online social networks. This research adds to the current literature by reexamining the relationship between the rise in narcissism and the rise in social network use, and suggests that the two variables are not as related as previously suggested in others studies. As for Facebook usage, these findings contradict previous research by Buffardi and Campbell (2008) and Mehdizadeh (2010), and question the proposition that Facebook is particularly appealing for narcissistic people. This could be due to the sample having an age range of up to 70 years old, whereas previous studies focus more on just college age students, or because new SNS have been introduced to the Internet since these studies were published.

In addition, the negative correlation between being a covert narcissist and using Facebook reveals more complexity. Covert narcissist might avoid Facebook because it does not allow them to form personal relationships built on self-indulgence, conceit and arrogance. This tendency may suggest that amongst many online social networks, Facebook may be a safer more modest form of social connection. In terms of specific hypotheses, the prediction that extraverted people would be more likely to use Facebook, contradicts the findings in Ryan and Xenox (2011) and Correa et al. (2010). This difference may have occurred because people are now using social networks for more purposes than just means of social extension, or because social networking is becoming a normal form of communication for all people.

Furthermore, conscientiousness and Instagram showed to be significantly correlated, suggesting that this online network's structure allows the representation of perfectionism and organization. Instead of the hypothesized negative correlation between SNS and conscientiousness, it could be that people who are more conscientious like to use Instagram as it allows them to apply their diligence and prudence while presenting their "life" through nine planned out squares. At the same time, the sample presented a negative correlation between using Instagram and having the personality characteristics of honesty-humility. Which suggest that Instagram is not a place to be modest, avoid-greed, be fair, or show sincerity. These findings show that there is something about Instagram that is eliciting different personality characteristics than other popular social networks, such as Facebook and Twitter. Although Instagram did not reveal a significant correlation with narcissism, it did suggest positive and negative associations with the different factors of the HEXACO model that relate to overt narcissistic personality characteristics.

Lastly, the significant relationship between having a Facebook, Instagram, and Twitter account, confirms that more users are signing up with more than one SNS to engage in varying activities, groups, and networks that are available on each one of the sites. For instance, in the United States, 52% of social network users reported using multiple platforms compared to 42% the year before with a projected annual increase of 10% (WeAreSocial, 2016). These results suggest that online networks are indeed a phenomenon and will continue to shape, change, and mold humanities social interactions.

Limitations and future directions

Limitations to this study should be noted. Because the current study relied on quantitative assessments, future research designs may benefit from the inclusion of qualitative approach to understanding a person's

personality, why they use SNS, and how it is influencing changes in social lives. Additionally, our sample was predominantly Caucasian, and thus, we do not know how these results would generalize to ethnic minority groups. This study was a one-time assessment, and it could be beneficial for future studies to look at SNS use over time to assess the effects on personality development.

Future research efforts are needed to develop theory and a conceptual understanding for how online SNS are affecting current and future generations' social lives in addition to understanding what about these online accounts are so addicting. It is likely that the current popularity of SNS is going to continue to grow and thus continue to need scientific research.

It is hoped that the results within this paper will serve as a foundation for the development of much psychological theory relating to the use of SNS. While no significant results have been found between having overt narcissistic personality characteristics and using Facebook, Instagram, and Twitter, it is important that scientific researchers continue to look at other variables to explain the rise in narcissism, specifically in the millennial generation. Additionally, the significant relationship found between having multiple accounts in this study supports the idea that SNS is a phenomenon that will continue to grow. Finally, this study implies that Instagram is different than other popular SNS, and it may play a bigger role in identity formation than previously thought.

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