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Do the Offline and Social Media Big Five Have the Same Dimensional Structure, Mean Levels, and Predictive Validity of Social Media Outcomes?

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Abstract

Prior studies found that the Big Five personality traits are significant predictors of social media outcomes, but they did not specify the situational context of the Big Five. The assumption is that people have the same personality on social media as offline. The present research addressed whether the Big Five are the same on social media as offline in terms of dimensional structure, mean levels, and predictive validity of social media outcomes. Across two samples, 943 college students completed measures of social media outcomes and two versions of the Big Five Inventory-2 adapted from Soto and John (2017), specifying offline and social media contexts. Findings revealed that all of the five dimensions emerged in both contexts, except that a few items might not apply well to the social media context. The mean levels of all five traits were significantly different between contexts, suggesting that the dimensional structure of the offline and social media Big Five are similar but peoples' levels of expression of the Big Five are not the same between these contexts. Conscientiousness and extraversion were the least similar dimensions out of the five between the contexts. There were also differences in predictive validity between the offline and social media Big Five showing that heavier social media users are more open, conscientious, and extraverted on social media, whereas they are lower on these traits offline. Consequently, studying offline and social media contexts separately and jointly is critical for understanding how the Big Five predict social media outcomes.

Keywords: Big Five; personality; social media; social networking sites; situational context

Introduction

Previous research found that the personality traits known as the "Big Five" (openness, conscientiousness, extraversion, agreeableness, and neuroticism; John et al., 2008) are significant predictors of social media outcomes such as time spent on social media and motivations to use social media (see Huang, 2019; Liu & Campbell, 2017 for reviews). However, almost all of the studies on this topic assessed the Big Five without specifying the situational context of measurement. This approach is consistent with the basic assumption of trait theory and models of the Big Five that personality is stable and consistent across contexts (see Allport & Odbert, 1936; Costa & McCrae, 1992a; Digman, 1990; Goldberg, 1990). However, research shows that, while personality is relatively stable, trait expression may differ across contexts (Mischel & Shoda, 1995; Sheldon et al., 1997). The context of social media is strikingly different from the physical world (i.e., offline context; Bayer et al., 2020; McFarland & Ployhart, 2015). As people constantly switch between these two contrasting contexts, often spending hours on social media every day (Chaffey, 2020), their personality may not be the same on social media as offline.

Therefore, the major aim of the present research was to test whether the offline and social media Big Five are the same. First, we planned to test whether the same dimensional structure of the Big Five emerged in reports of personality in offline and social media contexts separately. If the same dimensional structure emerged in both contexts, we planned to examine the similarities in the Big Five between social media and offline contexts in terms of mean levels (both for the entire group of participants and at the level of the individual) and their predictive validity of social media outcomes. Below, we briefly review the Big Five model of personality traits, and we discuss the studies that have compared the Big Five between offline and online contexts. We then identify gaps in the prior research that has compared the Big Five between the two contexts, and we report a study that addressed them.

Literature Review

The theoretical model of the Big Five organizes individual differences in five encompassing dimensions used to predict a variety of behavior and outcomes (John et al., 2008). Each of the Big Five is defined by a range of traits (Soto & John, 2017):[1] *Openness* encompasses intellectual curiosity, aesthetic sensitivity, and creative imagination; *conscientiousness* encompasses organization, productiveness, and responsibility; *extraversion* encompasses sociability, assertiveness, and energy level; *agreeableness* encompasses compassion, respectfulness, and trust; and *neuroticism* encompasses anxiety, depression, and emotional volatility. The Big Five predict a wide variety of social behavior and life outcomes ranging from academic performance (Poropat, 2009) to substance abuse disorders (Kotov et al., 2010).

The person-situation debate sparked the question of whether personality traits such as the Big Five predict people's personality across contexts (Kenrick & Funder, 1988). Early in this debate, Mischel (1968) emphasized that people's behavior often varies significantly across contexts (see also Bem & Funder, 1978; Mischel & Shoda, 1995). The Big Five taxonomy was developed long before the advances of social media. If people's personality on social media is different from their personality offline, then the context of the personality of interest needs to be specified in the assessments of personality. Otherwise, it is unclear whether participants' reports of their personality reflect their personality offline or on social media, or any combination of these contexts. That is, there may be a *Frame-of-Reference* effect (see Robie et al., 2017; Schulze et al., 2021) where participant reports of personality vary depending on the specified context. For instance, prior research showed that people may report their Big Five differently depending on the specified context (e.g., people report being higher on extraversion in a friendship compared to an employment context; Sheldon et al., 1997). Thus, if the Big Five are not the same on social media as offline, then using assessments of the Big Five without specifying the context may overlook potential issues in how the Big Five in these two separate contexts predict the person on social media.

Thus far, only a couple of the published studies have attempted to examine whether the Big Five are the same between offline and online contexts. For instance, Blumer and Döring (2012) tested whether the Big Five were the same offline as online, which includes, but is not limited to, social media. In this study, participants completed two measures of the Big Five personality: one version for their offline Big Five and another version to report their online Big Five. The online version was modified to indicate online context (items specified online context: e.g., "*On the computer or Internet*, I really enjoy talking to other people"). Findings showed that the mean level of each Big Five trait was lower in the online context compared to that of the offline context. This suggests an effect of context on reports of the Big Five. However, the online assessment of the Big Five occurred four to six weeks after the offline assessment, which possibly influenced the reported differences. Additionally, the Big Five was lower in the online context compared to that of the offline context only for participants who were scored in the top and upper quartiles (i.e., the top 25% and between 50% and 75%, respectively) of their offline Big Five traits, but not for those who were scored in the bottom quartile (i.e., the bottom 25%). Results were mixed for participants who were scored in the lower quartile of the offline traits (i.e., between 25 and 50%). These participants reported lower means in the online context compared to that of the offline context for openness and neuroticism but not the other three traits. These findings suggest that people do not express their Big Five traits the same between offline and online contexts. Nonetheless, Blumer and Döring (2012) reported collecting data in 2010/2011, almost a decade ago. Since then, social media has become an integral part of life, particularly among young individuals. Global reports indicate that approximately 3.96 out of the 4.57 billion internet users are active on social media (Chaffey, 2020). As such, the present research focused on whether the Big Five personality traits replicate on social media.

More recently, a couple of conference proceedings (Taber & Whittaker, 2018, 2020) reported findings on whether the Big Five is the same between offline and three popular social media platforms: Facebook, Snapchat, and Instagram. The majority of the reported findings mirrored those in Blumer and Döring (2012) such that all of the Big Five tended to be lower on the social media platforms compared to offline: Compared to offline context, participants reported lower openness on Facebook and Snapchat, lower conscientiousness on private Instagram accounts (i.e., "Finsta"), lower extraversion on Facebook, lower agreeableness on Facebook and Finsta, and lower neuroticism on all three social media platforms. Taber and Whittaker's (2018, 2020) work specified social media contexts to assess the social media Big Five. However, the comparison was between *individual* platforms of social media to basically *all* offline contexts. The popularity of individual platforms of social media changes over time and varies by user (Bayer et al., 2020). As an initial test of the differences in personality between offline and social media contexts, the present research asked participants to report their personality on the social media they use and compared their reports of personality in offline contexts.

Addressing the Gaps: Are the Big Five the Same on Social Media as Offline?

Dimensional Structure

As prior studies neither assessed whether the offline and social media Big Five have the same dimensional structure nor whether the Big Five emerge in reports of personality when the context (offline or social media) is specified, these questions thus call for an empirical investigation. It should be noted that the five-dimensional structure of the Big Five has been found across contexts such as in the workplace and educational settings (e.g., Holtrop et al., 2014; Holtz et al., 2005; Reddock et al., 2011; Schmit et al., 1995). However, the findings of a few studies suggest that the dimensional structure of personality may depend on the context. For example, items indicative of neuroticism (e.g., "I am not bothered by difficult social situations") have been shown to have significant loadings on both extraversion and neuroticism (Johnson, 2014; Schulze et al., 2021). Extraversion in social situations may be closely intertwined with one's level of neuroticism in certain contexts. Thus, it begs the question of whether the same dimensional structure of personality will emerge in the context of social media, which is a different kind of social situation from the offline world.

Mean Levels

If all of the Big Five emerged in both offline and social media contexts, we planned to examine whether the offline and social media Big Five were the same in terms of mean levels. Based on the findings in Blumer and Döring (2012) and Taber and Whittaker (2018, 2020) described above, we predicted that people would report lower levels of all the Big Five on social media compared to offline. We further derived our predictions about these differences in personality between offline and social media contexts from three major differences in features between these two contexts. First, interactions on social media are not restricted by dimensions of time and space as in offline contexts. Social media users can interact with others whenever and wherever they choose to do so (Bayer et al., 2020; McFarland & Ployhart, 2015). Accordingly, high levels of *conscientiousness* may be less relevant on social media given that users do not need to diligently plan, structure, or even remember information to interact with others (see Bayer et al., 2020; McFarland & Ployhart, 2015). Social media are also rife with impulsive behavior (i.e., an indicator of low conscientiousness; Roberts et al., 2014) suggesting lower levels of conscientiousness compared to offline contexts (e.g., frequent displays of risky behaviors and self-disclosure of personal information on social media; Huang et al., 2014; Tsai et al., 2017; Xie & Kang, 2015). Additionally, high levels of *neuroticism* may not be experienced as often on social media, where users have more control over their presentation and interaction. For instance, profiles allow users to curate their self-presentation and interact with others anonymously (Bayer et al., 2020; Tifferet, 2019). This enhanced control over self-presentation on social media may allow users who are high on social anxiety or self-consciousness (i.e., feelings that contribute to neuroticism; Trapnell & Campbell, 1999) to feel more comfortable interacting with others on social media (Lee et al., 2012; Lundy & Drouin, 2016). Indeed, online contexts have been shown to relieve people from feeling self-consciousness of what others think of them (Postmes et al., 1998). Further evidence suggests that women, who typically feel more self-conscious than men in offline contexts, do not experience such negative feelings to the same extent on social media (Bunker et al., 2021).

Second, social media are designed to facilitate interpersonal communication, fostering opportunities for users to easily communicate with others and join groups (Cheng et al., 2019). These features of social media grant users

opportunities to seek social resources on social media regardless of how socially skilled they are offline (Cheng et al., 2019; X. Hu et al., 2017; Liu & Brown, 2014; Rains & Keating, 2011). As such, high levels of interpersonal traits (e.g., *extraversion* and *agreeableness*) may be less relevant on social media given that people may not need strong interpersonal skills to interact with others in the accessible, social capital-rich context of social media. Third, other design features of social media may contribute to lower levels of openness. Specifically, *openness* may be less relevant on social media given that platform algorithms guide users towards interacting with like-minded others and show advertisements and content tailored to users' existing preferences (see Bakshy et al., 2015; Conover et al., 2012; Del Vicario et al., 2016; Flaxman et al., 2016).

To further understand the expression of the Big Five between offline and social media contexts, we explored whether the mean levels of each trait are the same at the level of the individual. Individual differences in the levels of one's offline versus social media traits are distinct from these differences observed across people. Accordingly, we examined the percentages of individuals that reported higher levels of the Big Five offline compared to social media, lower levels of the Big Five offline compared to social media, and no difference in the levels of the Big Five between these two contexts, and the average of these differences, to see whether most people show differences in the levels of the Big Five between the two contexts.

Predictive Validity

In the last decade, researchers examined whether the Big Five predict social media outcomes (see Huang, 2019; Liu & Campbell, 2017 for reviews). However, prior research did not specify the context of the Big Five to predict social media outcomes. Specifically, prior research may have overlooked three potential issues in how the offline and social media Big Five may predict social media outcomes. The first is that the Big Five in either offline or social media contexts may or may not predict social media outcomes independently of the Big Five in the other context. Second, the offline and social media Big Five may not predict social media outcomes with the same strength (i.e., the offline and social media Big Five may predict significantly different amounts of the variance in social media outcomes). Third, the offline and social media Big Five may not predict social media outcomes with the same patterns (i.e., the Big Five in one context may be positive predictors of social media outcomes whereas the Big Five in the other context may be negative predictors). If one or more of these issues occur, it is critical to study offline and social media contexts both separately and jointly to understand how the Big Five predict social media outcomes.

Therefore, the present research examined the relationships of two sets of the Big Five with the context specified (i.e., offline Big Five vs. social media Big Five) and three types of outcomes that prior research has demonstrated as relevant for understanding how people behave on social media (see Chae, 2017; Hollenbaugh & Ferris, 2014; Huang, 2019; Kircaburun et al., 2020; Kircaburun, & Griffiths, 2018; Kokkinos & Antoniadou, 2019; Lee et al., 2012; Lin et al., 2017; Liu & Campbell, 2017; Peluchette et al., 2015; Seidman, 2013; Shim et al., 2016; Tang et al., 2016). Specifically, we selected the three types of outcomes to reflect *how* people use social media (i.e., *usage* variables such as time spent, problematic use, and self-disclosure behaviors), *why* they use it (i.e., *motivation* variables such as socializing with others and information-seeking), and *what* their *experience* is like (i.e., *self-experience* variables such as self-consciousness and cyberbullying victimization on social media). Accordingly, we selected measures of these outcomes based on those used in prior research. While not an exhaustive list, these three types cover a range of social media outcomes and serve several purposes for testing whether the offline and social media Big Five had the same predictive validity of social media outcomes.

One purpose is to test whether the offline and social media Big Five predict social media outcomes that have been shown to be predicted by the Big Five in prior research. The main outcomes under this criterion are time spent on social media, problematic social media use, motivations for use, and cyberbullying victimization. For time spent on social media, individuals who are more extraverted or neurotic or less conscientious tend to spend more time on social media (Huang, 2019; Liu & Campbell, 2017). For problematic social media use, less conscientious individuals are more likely to use social media problematically (Kircaburun et al., 2020; Kircaburun, & Griffiths, 2018; Tang et al., 2016). For motivations, individuals who are more open or extraverted are more motivated to use social media to socialize with others, and those who are more open, extraverted, or conscientious are more motivated to use social media for seeking information (Kircaburun et al., 2020; Lin et al., 2017). For cyberbullying victimization, individuals who are more open or extraverted are more likely to report being cyberbullied on social

media, while those who are less conscientious or agreeable are less likely (Kokkinos & Antoniadou, 2019; Peluchette et al., 2015).

A second purpose is to test whether the offline and social media Big Five predict social media outcomes that have been shown not to be significantly predicted by the Big Five in prior research. Outcomes under this type are noteworthy when prior research expected the Big Five to be significant predictors of them. Self-disclosure on social media fits this criterion given notable null findings where the Big Five did not significantly predict self-disclosure behaviors on social media despite prior predictions (e.g., Hollenbaugh & Ferris, 2014; Seidman, 2013). For example, Seidman (2013) found no support for the hypotheses that conscientious individuals would be less likely to self-disclose on social media as they would be cautious to protect their information, and that neurotic individuals would be likely to self-disclose on social media as they would use social media as a safe place to express negative emotions. However, that same study found that conscientiousness predicted less presentation of hidden and idealized aspects of the self on social media. Relationships between the Big Five and self-disclosure on social media may appear more clearly when the context of personality assessment is specified as either offline or on social media.

A third purpose is to test whether the offline and social media Big Five predict social media outcomes that have been shown to predict a wide range of other social media outcomes in prior research. Outcomes under this type serve as an important point of reference given their relationships with many behaviors and experiences on social media. Self-consciousness fits this criterion given the range of social media outcomes that self-consciousness predicts (e.g., spending more time on social media and motivations to use social media; Chae, 2017; Lee et al., 2012; Shim et al., 2016).

Overview of the Present Research

To recapitulate, this study addressed two research questions. The first research question was: *Do people report the same Big Five personality on social media as offline in terms of dimensional structure and mean levels?* We assessed whether the same Big Five structure would emerge in the assessment of personality on social media as offline. If the same personality structure emerged in the reports of personality on social media as in the reports offline, we then proceeded to examine whether there were differences in the mean level of each personality dimension (across participants and at the individual level). We hypothesized that participants would report lower mean levels for all of the Big Five in the social media context compared to the offline context (H1) and that these differences would depend on participants' relative standings on their offline Big Five. Specifically, those who scored in the top and upper quartiles on the offline Big Five would score lower on the corresponding Big Five dimension on social media but there would be no differences between those two contexts among individuals who scored in the bottom quartile (H2). We explored how many participants reported lower levels of each trait on social media compared to offline, vice versa, and the number of participants reporting no difference in each trait between each context, and we explored whether the averages of these mean level differences at the individual level were greater than zero. The second research question was: *Do the offline and social media Big Five have the same predictive validity of social media outcomes*? We examined the offline and social media Big Five as separate sets of predictors of social media outcomes. Specifically, we tested whether the offline and social media Big Five predict social media outcomes with the same strength (i.e., variance explained) and patterns (i.e., positive or negative). We hypothesized that the social media Big Five would explain more variance in predicting social media outcomes than the offline Big Five (H3). We further explored whether the offline Big Five would predict social media outcomes after controlling for the effects of the social media Big Five and whether different patterns of relationships appeared between the offline and social media Big Five with social media outcomes. To ensure that the observed findings are replicable, we addressed the same questions in two different samples.

Method

Participants

We recruited two samples of participants for the study. Both samples were students in an introductory psychology course at a large, public university who participated for course credit. Sample 1 comprised 555 participants; 38 participants failed an attention check question ("If you are reading this please click 'often.'") and were omitted from

the analyses below. Participants in this final sample were 60.0 percent women (M_{age} = 19.14, SD_{age} = 2.23). In this sample, 54.5% of participants described themselves as White, 19.2% as Latino, 12.2% as Asian/Asian American, 3.5% as Black/African American, 3.3% as Middle Eastern, 2.1% as Indian/South Asian, 1.5% as American Indian, .2% did not specify any ethnicity, and 3.5% specified an ethnicity not listed. Sample 2 comprised 388 participants; 25 participants failed an attention check question and were omitted from the analyses below. Participants in this final sample were 62.3% women (M_{age} = 19.24, SD_{age} = 2.22). In this sample, 57.3% described themselves as White, 14.9% as Latino, 12.1% as Asian/Asian American, 4.4% as Black/African American, 4.1% as Middle Eastern, 2.8% as Indian/South Asian, .6% as American Indian, .6% did not specify any ethnicity, and 3.3% specified an ethnicity not listed. A post-hoc power analysis showed that Sample 2 (N = 363) could detect differences between the offline and social media Big Five (Cohen's d = 0.15 with 80% power) observed in Sample 1 (e.g., mean level differences in Sample 1 were Cohen's d > 0.37; N = 517). This suggests that Sample 2 was high-powered enough to fit the purpose of replication.

Overall, the findings of both samples were very similar. For ease of comprehension, we report the results from Sample 1 in the text and note whenever the results from Sample 2 statistically contrasted in each of the following analyses. Tables and Figures contain values from both samples as noted in each Table/Figure.

Design

The study design was a 2 (context: offline vs. social media) by 2 (order: offline first vs. social media first) mixed full factorial design. The context was a within-subjects factor: *all* participants completed two modified measures of their personality, one specifying offline context and another specifying social media context (described in the measures section below). Whereas the order was a between-subjects factor: participants completed *either* one of two counterbalanced conditions: In the offline first condition, participants reported their offline personality before their social media personality. In the social media first condition, participants reported their social media personality before their offline personality.

Measures

The Big Five Personality Traits

We measured personality in each of the two contexts with the 60-item Big Five Inventory-2 (Soto & John, 2017), including five subscales of 12 items each to assess each Big Five dimension:[2] (1) *openness* items (e.g., "Is curious about many different things.") comprise intellectual curiosity, aesthetic sensitivity, or creative imagination; (2) *conscientiousness* items (e.g., "Can be somewhat careless.") comprise organization, productiveness, or responsibility; (3) *extraversion* items (e.g., "Is outgoing, sociable.") comprise sociability, assertiveness, or energy; (4) *agreeableness* items ("Is compassionate, has a soft heart.") comprise compassion, respectfulness, or trust; and (5) *neuroticism* items ("Is relaxed, handles stress well.") comprise anxiety, depression, or emotional volatility. Participants indicated their agreement with each item on a five-point response scale ranging from 1= *disagree strongly* to 5 = *agree strongly*. The Big Five-Inventory-2 introduced a robust hierarchical structure to the original Big Five Inventory and has greater breadth and precision in measurement and predictive power than the original measure (Soto & John, 2017).

We modified the original instructions and items to specify the context (see supplemental material A). Instructions presented at the top of each measure specified the relevant context (modifications in italics): "Here are a number of characteristics that may or may not apply to you *offline (i.e., who you are in the physical world)/social media (examples of social media include Facebook, Instagram, Snapchat, and Twitter*.)." Items specified the relevant context at the end of each item's content (e.g., "Is curious about many different things *offline/on social media*."). We report and discuss the reliabilities of each personality dimension separately for each context in the Results and Discussion section.

Social Media Outcomes

Usage. We assessed three different types of social media usage: (1) To assess *time spent* on social media, we adapted an item from Ellison et al. (2007), which asked participants how much time per day they spent on social

media. Participants responded on a six-point scale, ranging from 1 = *less than 10 minutes* to 6 = *more than 5 hours*. Participants also reported which platform they preferred: 35.2% preferred Instagram, 34.4% Snapchat, 19.3% Twitter, 4.4% Facebook, 1.5% WeChat, and 5.0% preferred another platform.[3] (2) We assessed *problematic social media use* by modifying the Internet Addiction Test (Pawlikowski et al., 2013). Participants responded to 12 items modified to indicate social media context (e.g., "How often do you find that you stay on *social media* longer than you intended?" α = .87) on a five-point scale ranging from 1 = *rarely* to 5 = *always*. (3) We assessed *self-disclosure* with a similarly modified measure of Facebook self-disclosure (Hollenbaugh & Ferris, 2014). Participants responded to 13 items (e.g., "I often talk about myself on *social media*." α = .87) on a seven-point scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*.

Motivations. We assessed seven types of motivations to use social media with 18 items from Alhabash and Ma (2017). Following Alhabash and Ma (2017), we computed a composite score for each of the seven motivation scales with two or three items each: (1) *information-seeking* (e.g., "I use social media to share information." α = .78), (2) *social interaction* (e.g., "I use social media to meet new people." α = .78), (3) *self-documentation* (e.g., "I use social media to record what I do in life." α = .77), (4) *self-expression* (e.g., "I use social media to show my personality." α = .79), (5) e*ntertainment* (e.g., "I use social media because it entertains me." α = .80), (6) *passing time* (e.g., "I use social media to pass the time." α = .54), and (7) *convenience* (e.g., "I use social media because it is convenient." α = .68). Participants responded to each item on a seven-point scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*.

Self-Experience. We assessed three types of self-experience on social media. We assessed (1) *private* and (2) *public self-consciousness* on social media with a modified version of the Revised Self-Consciousness Scale (Scheier & Carver, 1985). Nine items assessed private self-consciousness on social media ("I generally pay attention to my inner feelings *on social media.*" α = .77) and seven assessed public self-consciousness on social media ("I care a lot about how I present myself to others *on social media*." α = .88). Participants indicated agreement on a six-point scale ranging from 1 = *not at all like me* to 6 = *a lot like me*. (3) We also assessed *cyberbullying victimization* by modifying the Cyberbullying Scale (Stewart et al., 2014). Participants responded to 10 items (e.g., "How often does another person say something mean to you (such as calling you names or making fun of you) *on social media*?" α = .90)[4] on a five-point scale ranging from 1 = *never* to 5 = *all the time*.

Procedure

We administered the study online via Qualtrics survey software during 2019 and 2020. After consenting to participate in the study, participants were randomly assigned to one of the two order conditions. After the personality measures, they completed the social media outcome measures, followed by a demographics section. After survey completion, participants were thanked, debriefed, and received credit for their participation.

Results

Overview of Analyses

To address *research question 1*, we first tested whether the Big Five dimensions emerged in offline and social media contexts. To this end, we conducted all of the analyses reported in Soto and John (2017) to assess the personality structure that emerged from reports on the Big Five Inventory-2. That is, we conducted principal components analyses and confirmatory factor analyses to assess the dimensional structure of the offline and social media Big Five. We also compared differences in reliability coefficients and intercorrelations between the offline and social media Big Five.

If all of the Big Five emerged in both offline and social media reports, we planned to compare the offline and social media Big Five in terms of their mean levels. We conducted three different sets of analyses addressing mean differences between offline and social media Big Five at both sample and individual levels. First, we conducted a two-way mixed MANOVA to test whether participants would report lower levels for all of the Big Five in the social media context compared to the offline context (H1) and whether these differences would depend on the presentation order of the Big Five (i.e., offline or social media first). Second, we conducted a series of two-way mixed ANOVAs to test whether those who scored in the top and upper quartiles on the offline traits would score

lower on the corresponding trait dimension on social media but there would be no differences between those two contexts among individuals who scored in the bottom quartile (H2). Third, we explored individual differences in the patterns of differences between participants' offline and social media trait scores. To this end, we subtracted individual participant's scores on the social media Big Five from their corresponding trait score on the offline Big Five. For example, if a participant's offline extraversion score was 4.50 and their social media extraversion score was 3.50, their difference score for extraversion was 1.00 (a positive difference). We then tested the average of these individual differences against the value of zero via a one-sample t-test to determine whether the average was greater than zero (which indicates no difference) for each of the Big Five, and we calculated the frequencies of positive, negative, and no differences between the two contexts for the entire sample.

To address *research question 2*, we tested whether the offline and social media Big Five had the same predictive validity of social media outcomes. To this end, we conducted a series of using multiple regression to examine whether the Big Five in each context predicted social media outcomes independently from the Big Five in the other context. We first entered the social media Big Five as a set of predictors and next entered the offline Big Five in a multiple regression for each social media outcome. Then we ran another series where we entered the offline Big Five as the first set, followed by the social media Big Five. We examined the variance explained by each Big Five set independently from the other set. We hypothesized that the social media Big Five would explain more variance in predicting social media outcomes than the offline Big Five (H3). We further examined whether differences appeared between the offline and social media traits in the strengths and patterns of correlation coefficients with social media outcomes. To this end, we calculated effect sizes reflecting the differences between the relationships between the offline traits and social media outcomes and the relationships between the social media traits and social media outcomes.

RQ1: Do People Report the Same Big Five Personality on Social Media as Offline in Terms of Dimensional Structure and Mean Levels?

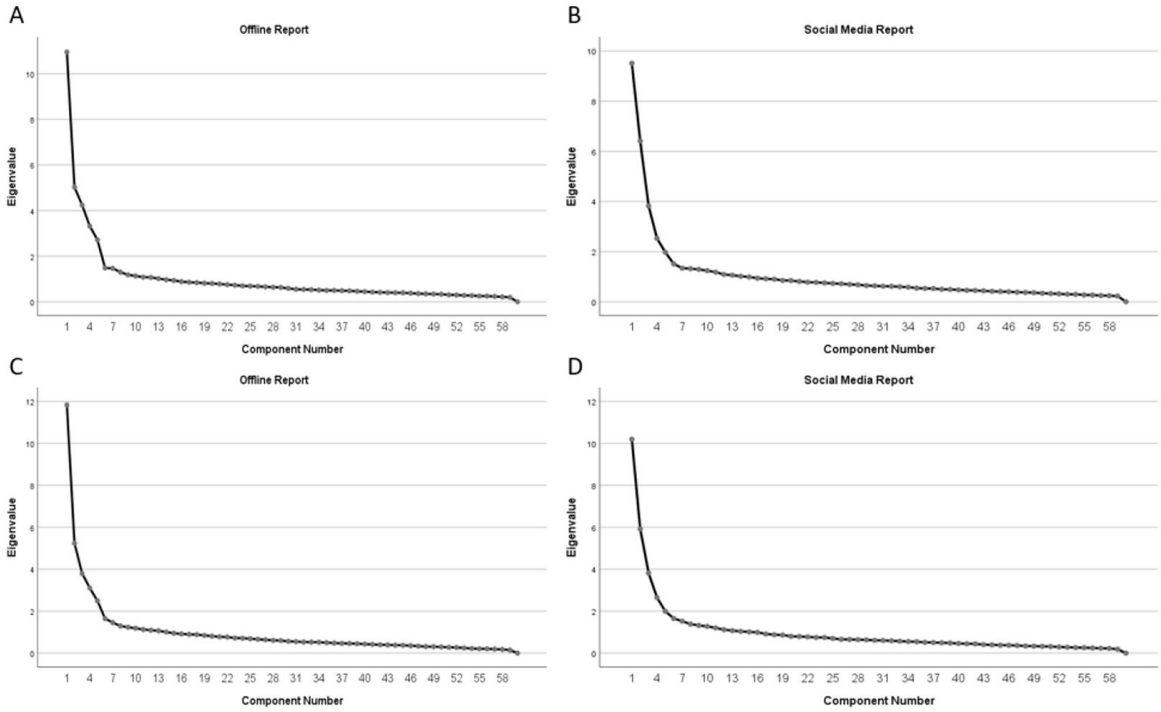
Dimensional Structure

We first ran principal components analyses (PCAs) on the items for both offline and social media reports to determine the number of components in each context. Before conducting the PCAs, we centered each item within each participant by taking each individual's mean response across all items and subtracting it from their response to each item. Following Soto and John (2017), this procedure was conducted in response to a sixth component that emerged in PCAs with an eigenvalue above 1 when assessing the personality structure of the Big Five. Similar to the previous research, the sixth component did not appear above the scree line and showed a decrease in the eigenvalue while the pattern of results remains similar for the other five components after within-person centering the responses. Soto and John (2017) discussed how this sixth component appearing in reports of the Big Five could be mistakenly interpreted as a substantive personality dimension when it reflects a methodological artifact like acquiescent responding. As this exact pattern of results for both the offline and social media reports also emerged in the present research, we choose to extract five components in our analysis following Soto and John (2017). These five components appeared above the "elbow" in the scree plots of eigenvalues (see plots A and B in Figure 1) for both offline and social media context reports, and they respectively accounted for 43.75% and 40.42% of the variance in the offline and social media reports (see supplemental material B for eigenvalues and variance accounted for by component). Together, these findings suggest that five dimensions emerged in both offline and social media reports.

Next, we extracted five components from the offline and social media context PCAs with varimax rotation to examine item loadings on a "primary" component (i.e., component loadings where the 12 items from each trait scale should strongly load together based on the Big Five structure) and loadings from "secondary" components (i.e., item loadings on components that items from other trait scales load strongly together). These loadings for both samples are listed in the supplemental materials C and D. The average primary and secondary loadings were respectively .59 and .12 for the offline context items and .53 and .13 for the social media context items, similar to those reported in Soto and John (2017). Further, we obtained Tucker's congruence coefficients to compare the similarity of the primary components between offline and social media reports. Following previous guidelines, a coefficient should range from .85 to .94 for researchers to consider the components as similar and .95 or above to consider them equal (Lorenzo-Seva & Ten Berge, 2006). Tucker's congruence coefficients were .96 for openness

and neuroticism items, and .92, .93, and .90 respectively for extraversion, agreeableness, and conscientiousness items, suggesting that all of the five primary components were similar between offline and social media reports. Although this further suggests a replication of the Big Five structure for offline and social media contexts, there was notable cross-loading for some items.[5] In particular, items measuring conscientiousness may not equally apply to offline and social media contexts, suggesting that some secondary traits of conscientiousness may not have the same meaning on social media as offline. We discuss these items in more detail below.

Figure 1. *Scree Plots of Offline and Social Media Centered Items in PCAs.*



Note. Plots A and B are for Sample 1. Plots C and D are for Sample 2.

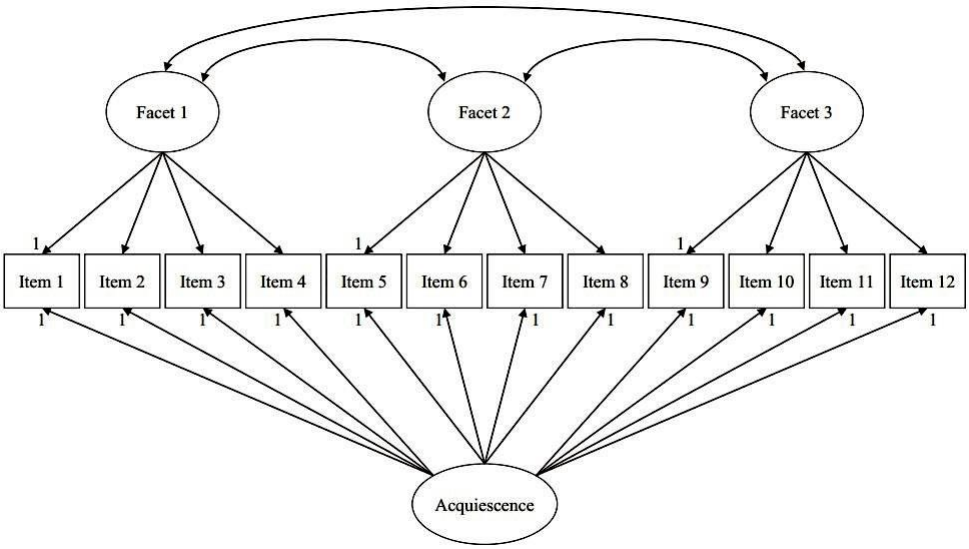
As all of the Big Five emerged in both contexts, we calculated Cronbach's alpha for each 12-item scale in all conditions to assess reliability (see Table 1). Overall, alphas ranged from .75 to .89, indicating acceptable levels of reliability for each of the Big Five for both contexts. These observed levels of reliabilities were also similar to those reported in Soto and John (2017). In comparing the observed reliabilities of the personality reports, we noted somewhat lower reliabilities for social media than for offline reports in two dimensions: openness and conscientiousness. We checked the corrected item-total correlations for items measuring these two traits in the social media reports. The average and the range of corrected item-total correlations for social media openness were respectively .41 and .23, and .40 and .30 for social media conscientiousness. Using the guideline that values of .30 or below may negatively impact reliability (see Nunnally, & Bernstein, 1994), these findings suggest that the items had acceptable corrected item-total correlations on average, but some items may have negatively impacted reliability. A close examination showed only one item for social media openness with a corrected item-total correlation below .30: "has few artistic interests on social media" (r = .27). Three social media conscientiousness items indicated corrected item-total correlations below .30: "has difficulty started on tasks on social media" (r = .26), "can be somewhat careless on social media" (r = .28), and "sometimes behaves irresponsibility on social media" (r = .27). These lower corrected item-total correlations may result from the item stylistics or content. Stylistics, such as quantifying information, may have affected participants' interpretations of social media items (e.g., what a "few" artistic interests means on social media may be unclear). Content may also be responsible; for example, a "task" on social media may be different from expressions of conscientiousness in offline contexts. By removing these items, reliabilities remained similar for social media openness (both 12 and 11 item versions: αs = .77), and reliabilities for social media conscientiousness suggest some improvement (12 item version: α = .75; 9 item version: α = .77). As these items may have impacted the results, we conducted all of the analyses below a second time with these items removed from the openness and conscientiousness scales in all conditions.[6] We note whenever these results statistically contrast from those using the full 12-item scales.[7]

Table 1. *Big Five Cronbach's Alphas by Condition*

Trait	Order condition			Original BFI-2 *N* = 1,000
	Offline first *n* = 255/184	Social media first *n* = 262/179	Overall *N* = 517/363	
O	.82/.80 (.77/.76)	.80/.79 (.76/.67)	.81/.80 (.77/.73)	.84
C	.85/.84 (.78/.81)	.86/.85 (.72/.77)	.86/.85 (.75/.79)	.88
E	.87/.88 (.88/.87)	.86/.89 (.86/.88)	.87/.88 (.87/.88)	.88
A	.75/.78 (.79/.82)	.79/.79 (.78/.73)	.77/.79 (.79/.79)	.83
N	.89/.89 (.83/.86)	.88/.87 (.87/.81)	.89/.88 (.85/.84)	.90

Note. Values left of each forward slash are for Sample 1. Values right of each forward slash are for Sample 2. Values outside parentheses indicate offline context. Values in parentheses indicate social media context. Original BFI-2 refers to the alphas in the validation of the Big Five Inventory-2 (Soto & John, 2017). O = openness; C = conscientiousness; E = extraversion; A = agreeableness; N = neuroticism.

Figure 2. *Confirmatory Factor Analysis Model from Soto and John (2017).*



Note. From "The next Big Five Inventory (BFI-2): Developing and assessing a hierarchical model with 15 facets to enhance bandwidth, fidelity, and predictive power," by C. J. Soto and O. P. John, 2017, *Journal of Personality and Social Psychology, 113*(1), p. 134. © 2017 American Psychological Association.

Next, we conducted bifactor confirmatory factor analysis (CFA) models of each Big Five dimension following Soto and John (2017) to assess the hierarchical structure of each trait in both offline and social media reports (see supplemental material E for CFA models conducted on all 60 items for each report). This conceptual model from Soto and John (2017, p. 134) is depicted in Figure 2. Each model contains the 12 observed items expected to comprise one of the Big Five and contains three latent factors representing the three secondary traits of each Big Five. We allowed all items to load onto only one secondary trait factor. All items loaded onto the acquiescence factor; we constrained these loadings to equal 1 to force true-keyed and false-keyed items in the same direction. We allowed the secondary trait factors to intercorrelate with each other but not with the acquiescence factor. To assess fit, we used comparative fit index values above .900 and root mean square error of approximation values below .080 as indicators of reasonable model fit (see Browne & Cudeck, 1993; L. Hu & Bentler, 1999). Following these recommendations, all models indicated reasonable fit except for conscientiousness on social media (see Table 2). However, after removing the three conscientiousness items with low corrected item-total correlations, this model indicated acceptable fit (CFI = .975; RMSEA = .049). While this might again suggest that although some secondary traits of conscientiousness may not have the same meaning on social media as in offline contexts, the same Big Five structure emerged in offline contexts and replicated on social media contexts.

Table 2. *CFA Model Fits for Offline and Social Media Big Five.*

Model	X^2	*df*	CFI	RMSEA
Openness	107.026/126.412 (159.597/117.158)	50	**.959/.922 (.910/.909)**	**.047/.065 (.065/.061)**
Conscientiousness	166.682/123.146 (276.732/241.394)	50	**.942/.944** (.818/.816)	**.067/.063** (.094/.103)
Extraversion	140.619/138.788 (163.070/108.233)	50	**.962/.952 (.949/.964)**	**.059/.070 (.066/.057)**
Agreeableness	163.749/123.158 (197.644/126.047)	50	**.912/.929 (.904/.929)**	**.066/.063 (.076/.065)**
Neuroticism	113.485/76.186 (138.460/123.561)	50	**.974/.983 (.952/.938)**	**.050/.038 (.058/.064)**

Note. Values left of each forward slash are for Sample 1 (*N* = 517). Values right of each forward slash are for Sample 2 (*N* = 363). Values outside of parentheses are for offline models. Values in parentheses are for social media models. CFI = Comparative fit index; RMSEA = Root mean square error of approximation. CFI values ≥ .900, and RMSEA values ≤ .080 are bolded.

Given that the comparable Big Five structure emerged between offline and social media contexts, as suggested by our analyses following Soto and John (2017), we next examined the intercorrelations *between* the offline and social media Big Five along the main diagonal in the correlation matrix in Table 3. The intercorrelations indicated moderate to high overlap between offline and social media contexts: openness (*r* = .62), conscientiousness (*r* = .45), extraversion (*r* = .33), agreeableness (*r* = .62), and neuroticism (*r* = .61). This suggests that the offline and social media Big Five are quite similar—but they are not the same. In particular, extraversion revealed the lowest correlation between the contexts, suggesting that offline extraverts may not be social media extraverts and vice versa. Further, in the analyses omitting items with low corrected item-total correlations, the intercorrelation between offline and social media conscientiousness was .35, suggesting that when omitting items that may not apply equally to social media as offline contexts, those who are conscientious offline may not be so on social media.

Table 3. *Intercorrelations of the Big Five Between Offline and Social Media Contexts.*

Trait	O_{SM}	C_{SM}	E_{SM}	A_{SM}	N_{SM}
O_{off}	.62/.62	.11/.15	.11/.07	.11/.21	-.11/-.18
C_{off}	.06/.10	.45/.55	.01/.06	.35/.40	-.25/-.33
E_{off}	.08/.11	.19/.29	.33/.42	.13/.20	-.28/-.40
A_{off}	.12/.23	.32/.41	.01/.10	.62/.64	-.30/-.35
N_{off}	.09/.05	-.22/-.17	.02/-.09	-.21/-.10	.61/.61

Note. Values left of each forward slash are for Sample 1 (*N* = 517). Values right of each forward slash are for Sample 2 (*N* = 363). O = openness; C = conscientiousness; E = extraversion; A = agreeableness; N = neuroticism. off = offline context; SM = social media context. Absolute correlations of .11 or stronger in Sample 1 and 2 are significant at $p < .05$.

Next, in examining intercorrelations *within* each context (see Table 4), we further noted statistically different correlation strengths of extraversion with openness and extraversion with neuroticism within the offline context compared to within the social media context. Fischer's *z* tests revealed significant differences in these correlation pairs such that extraversion and openness were more positively correlated in the social media context (z = -4.76, $p < .001$).[8] Further, and after removing conscientiousness items with low corrected item-total correlations, extraversion and conscientiousness were more positively correlated in the social media context (z = -3.49, $p < .001$). These results further suggest that what it means to be extraverted may be particularly different between contexts—social media extraverts may be likely to engage in social media activities that express openness or conscientiousness. Additionally, extraversion and neuroticism were more negatively correlated in the offline context (z = 6.16, $p < .001$), suggesting that offline extraverts are less neurotic than social media extraverts while in their respective contexts.

Among the 20 pairs of correlation coefficients reported in Table 4, we note one significant difference whereby offline agreeableness and openness were more strongly correlated in Sample 2 (r = .34) than in Sample 1 (r = .18; z = 2.45, p = .014). This difference could be due to an increase in the type I error rate as the number of comparisons increased. Importantly, this correlation is not directly relevant to our hypotheses and the relationships that compared these traits offline versus on social media did not vary by sample (i.e., agreeableness and openness did not have a stronger/weaker relationship for the social media context compared to the offline context for either sample).

Table 4. *Intercorrelations and Descriptives of the Big Five Within Offline and Social Media Contexts.*

Trait	1	2	3	4	5	*M*	*SD*
$O_{off(SM)}$	-					3.78 (3.41)/ 3.64 (3.39)	0.64 (0.62)/ 0.63 (0.58)
$C_{off(SM)}$	.19 (.28)/ .26 (.31)	-				3.70 (3.45)/ 3.68 (3.48)	0.68 (0.58)/ 0.66 (0.62)
$E_{off(SM)}$	.21 (.47)/ .27 (.41)	.28 (.37)/ .33 (.42)	-			3.44 (2.89)/ 3.32 (2.90)	0.76 (0.78)/ 0.80 (0.80)
$A_{off(SM)}$	.18 (.20)/ .34 (.27)	.36 (.53)/ .45 (.59)	.15 (.18)/ .25 (.22)	-		3.90 (3.68)/ 3.81 (3.66)	0.56 (0.59)/ 0.58 (0.59)
$N_{off(SM)}$	-.09 (-.03)/ -.12 (-.09)	-.36 (-.38)/ -.36 (-.31)	-.45 (-.10)/ -.46 (-.13)	-.34 (-.37)/ -.30 (-.38)	-	2.67 (2.37)/ 2.68 (2.36)	0.81 (0.73)/ 0.78 (0.69)

Note. Values left of each forward slash are for Sample 1 (N = 517). Values right of each forward slash are for Sample 2 (N = 363). Values outside parentheses indicate offline context. Values in parentheses indicate social media context. Values in parentheses indicate social media context. O = openness; C = conscientiousness; E = extraversion; A = agreeableness; N = neuroticism. off = offline context; SM = social media context. Absolute correlations of .09 for Sample 1 and .12 for Sample 2 or stronger are significant at the p < .05 level.

Mean Levels

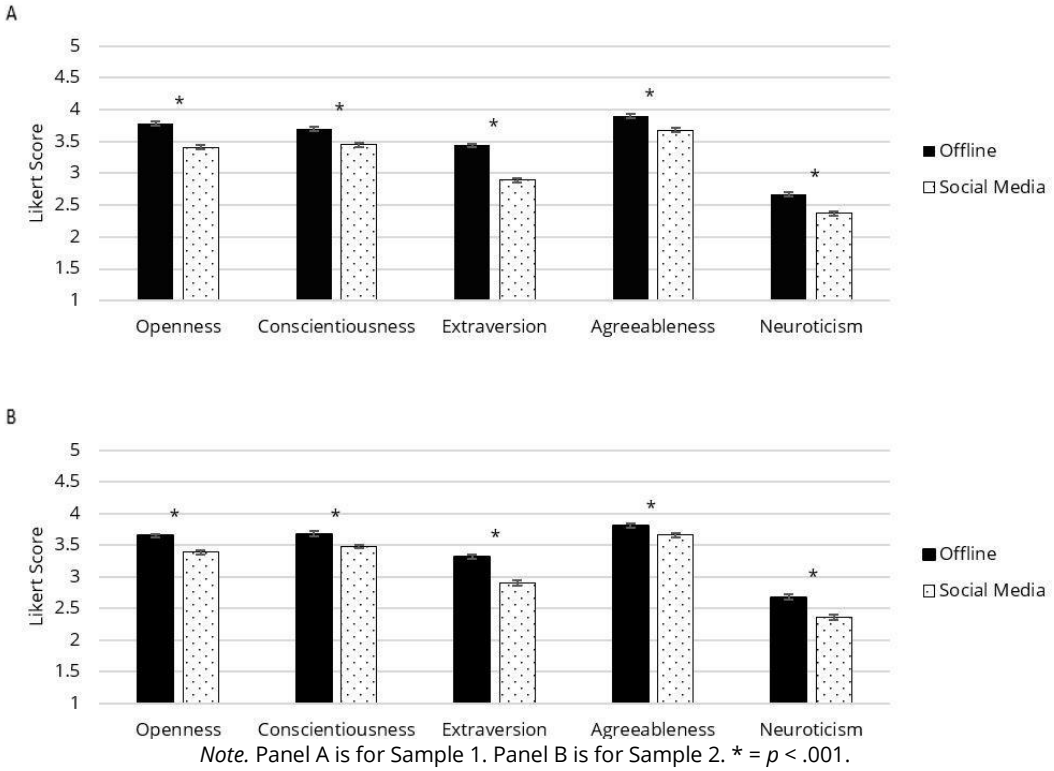
Next, we tested mean comparisons between the offline and social media Big Five. We ran a two-way mixed MANOVA to test the effects of context (offline vs. social media) and order (offline first vs. social media first) on the Big Five reports. A two-way interaction appeared between context and order (Pillai's Trace = .04, F(5,511) = 4.51, p < .001). A main effect of context appeared (Pillai's Trace = .55, F(5,511) = 126.89, p < .001), but no significant main effects of order appeared (Pillai's Trace = .01, F(5,511) = 1.49, p = .19). Thus, we examined the univariate effects for significant interactions and the main effects of context below.

Univariate interaction effects appeared for openness (F(1,515) = 19.19, p < .001) and conscientiousness (F(1,515) = 4.34, p < .05). In both order conditions, lower levels of openness and conscientiousness appeared on social media than offline contexts, but this difference was more pronounced in the social media first condition (O_{off} = 3.79, SD = 0.64; O_{SM} = 3.31, SD = 0.62, p < .05; C_{off} = 3.73, SD = 0.70; C_{SM} = 3.43, SD = 0.55, p < .001) compared to offline first condition (O_{off} = 3.77, SD = 0.63; O_{SM} = 3.50, SD = 0.61, p < .001; C_{off} = 3.66, SD = 0.66; C_{SM} = 3.47, SD = 0.61, p < .001).[9] In other words, these differences between the two contexts were smaller when the offline context was presented to the participants before the social media context. These findings may also explain why differences in reliability appeared for openness and conscientiousness between the contexts compared to the other traits, as participants may have used their offline personality as a guide for interpreting certain items that may be ambiguous in terms of whether they tapped into the intended dimensions on social media. Nevertheless, the patterns and significance of these results remained consistent after removing these items with low corrected item-total correlations. Despite these interactions, we note the consistency with our hypothesized direction given that participants reported lower mean levels on social media compared to offline reports for both of these traits across order conditions.

Univariate effects of context appeared for each of the Big Five such that lower mean levels appeared on social media compared to offline contexts (see Figure 3, Panel A for a depiction): Openness (F(1,515) = 239.48, p < .001, d = 0.59), conscientiousness (F(1,515) = 70.23, p < .001, d = 0.39), extraversion (F(1,515) = 190.38, p < .001, d = 0.70); agreeableness F(1,515) = 97.49, p < .001, d = 0.38); and neuroticism (F(1,515) = 104.56, p < .001, d = 0.40). Notably,

these patterns of results did not change when we examined the effects of context on the Big Five separately for participants with different preferred social media platforms. That is, the results held regardless of whether participants indicated their most preferred platform as Instagram, Twitter, or Snapchat. Taken together, these results support H1 and suggest that people's levels of expression of the Big Five are not the same on social media as offline. Further, when items with low corrected item-total correlations were omitted, there was a substantial change in the effect size between offline and social media conscientiousness (d = 0.85).[10] These findings suggest that extraversion and conscientiousness are the most different out of the Big Five between the contexts in terms of mean levels.

Figure 3. *Mean Differences Between the Offline and Social Media Big Five.*



Note. Panel A is for Sample 1. Panel B is for Sample 2. * = p < .001.

We further examined whether differences in mean levels between the offline and social media Big Five varied between participants with different offline Big Five levels. We grouped participants into four groups based on their scores on each of the offline Big Five dimensions: below 25th percentile (bottom quartile), between 25th and 50th percentile (lower quartile), between 50th and 75th percentile (upper quartile), or above 75th percentile (top quartile). We then ran a 2 (within-subjects context factor: offline vs. social media) x 4 (between-subjects offline quartile factor: bottom vs. lower vs. upper vs. top) mixed full factorial ANOVA for each of the Big Five. A significant interaction appeared for each of the five possible effects (see Table 5), such that participants reported significantly lower levels for each of the Big Five on social media compared to offline only if they were scored in the lower, upper, and top quartiles of the offline trait.[11] This suggests that most people report lower levels of the Big Five on social media compared to offline. In contrast, participants in the bottom quartile of the offline traits reported higher levels in social media compared to offline—although, this effect for those in the bottom quartiles was only significant after Bonferroni correction for two traits: conscientiousness and neuroticism.[12] This suggests that people do not report lower levels of the Big Five on social media compared to offline if they have very low levels of the traits offline compared to most people.

Together, these results support H2 that lower social media Big Five reports would appear for participants in the upper and top quartiles of the offline traits but not the bottom quartile. These results may reflect regression towards the mean—people who score at the two ends of the offline reports may be closer to the mean levels for their reports on the social media context. However, regression towards the mean may not explain all of the observed differences. For instance, participants in the lower quartile of the offline traits reported social media traits farther from the mean on social media contexts rather than closer towards it, and participants in the bottom quartile of the offline traits reported significantly higher social media traits for only two of the Big Five after

Bonferroni correction (and only one trait after removing items with low corrected item-total correlations). Thus, these results may suggest that social media contexts constrain Big Five expression.

Table 5. *Mean Differences Between the Offline and Social Media Big Five by Offline Quartile.*

Trait	Context x Quartile Effect *F*(3,513/359) =	Quartile			
		Bottom	Lower	Upper	Top
O	48.46/31.63 *p*s < .001	*MD* = -0.03/-0.06 *n* = 119/93	***MD* = 0.27**/0.15 ***n* = 139/84**	***MD* = 0.58/0.38** ***n* = 119/95**	***MD* = 0.63/0.58** ***n* = 140/91**
C	99.93/36.47 *p*s < .001	***MD* = -0.36/-0.28** ***n* = 121/86**	***MD* = 0.13**/0.15 ***n* = 136/88**	***MD* = 0.43/0.35** ***n* = 132/93**	***MD* = 0.75/0.52** ***n* = 128/96**
E	66.15/41.59 *p*s < .001	*MD* = -0.07/-0.15 *n* = 143/92	***MD* = 0.33/0.26** ***n* = 119/91**	***MD* = 0.82/0.54** ***n* = 111/88**	***MD* = 1.12/1.04** ***n* = 144/92**
A	27.54/23.85 *p*s < .001	*MD* = -0.11/-0.15 *n* = 105/83	***MD* = 0.18/0.15** ***n* = 155/93**	***MD* = 0.35**/0.13 ***n* = 118/92**	***MD* = 0.40/0.43** ***n* = 139/95**
N	63.04/43.20 *p*s < .001	***MD* = -0.17**/-0.12 ***n* = 140/88**	***MD* = 0.24/0.18** ***n* = 126/90**	***MD* = 0.39/0.40** ***n* = 120/94**	***MD* = 0.80/0.81** ***n* = 131/91**

Note. Values left of each forward slash are for Sample 1 (*N* = 517). Values right of each forward slash are for Sample 2 (*N* = 363). O = openness; C = conscientiousness; E = extraversion; A = agreeableness; N = neuroticism. *MD* = mean difference (offline – social media). Values significant at corrected *p* < .0025 level are bolded.

Table 6. *Mean Differences Between the Offline and Social Media Big Five (Individual Level).*

Trait	Difference (offline - social media)		*t*(516/362)	Frequency of differences		
	M	*SD*		Positive difference	No difference	Negative difference
O	0.37/0.26	0.55/0.53	15.27^{***}/9.42^{***}	359 (69.44%) /240 (66.12%)	40 (7.74%) /25 (6.89%)	118 (22.82%) /98(27.00%)
C	0.24/0.20	0.66/0.61	8.38^{***}/6.15^{***}	321 (62.09%) /224 (61.71%)	29 (5.61%) /24 (6.61%)	167 (32.30%) /115(31.68%)
E	0.54/0.42	0.89/0.86	13.81^{***}/9.33^{***}	368 (71.18%) /246 (67.77%)	20 (3.87%) /17 (4.68%)	129 (24.95%) /100 (27.55%)
A	0.22/0.15	0.50/0.50	9.88^{***}/5.75^{***}	332 (64.22%) /220 (60.61%)	48 (9.28%) /20 (5.51%)	137 (26.50%) /123 (33.88%)
N	0.31/0.32	0.68/0.65	10.23^{***}/9.31^{***}	340 (65.76%) /245 (67.49%)	31 (6.00%) /18 (4.96%)	146 (28.24%) /100 (27.55%)

Note. Values left of each forward slash are for Sample 1 (*N* = 517). Values right of each forward slash are for Sample 2 (*N* = 363). O = openness; C = conscientiousness; E = extraversion; A = agreeableness; N = neuroticism. $^{***}p$ < .001. Positive difference = higher means for offline than social media. No difference = means were the same for offline and social media. Negative difference = higher means for social media than offline.

We further compared means between the offline and social media Big Five at the level of the individual. One sample t-tests showed that these difference scores were all significantly different than zero (see Table 6). The frequencies of participants showing positive, negative, and no differences are also reported in the table below. A "positive" difference indicates that the participant reported higher mean levels of the offline trait than the social media trait while a "negative" difference indicates higher mean levels of the social media trait than the offline trait. "No difference" indicates that the mean levels of the offline and social media traits were the same. Overall, these findings suggest that most participants indicated lower levels of the Big Five on social media compared to the offline context.

RQ2: Do the Offline and Social Media Big Five Have the Same Predictive Validity of Social Media Outcomes?

Multiple Regression

To test whether the offline and social media Big Five have the same predictive validity of social media outcomes, we first conducted a series of multiple regression analyses to test whether the Big Five in each context predicted social media outcomes independent from the Big Five in the other context. We first entered the social media Big Five as a set of predictors and next entered the offline Big Five in a multiple regression for each social media outcome. Then we ran another series where the offline Big Five was entered first, followed by the social media Big Five. Before interpreting the results, we checked multicollinearity diagnostics. All tolerances were above .40, and VIFs less than 2.47, suggesting that multicollinearity was not an issue.

Table 7. *Offline and Social Media Big Five Predictive Validity of Social Media Outcomes.*

Social media outcomes	R^2	ΔR^2
Usage		
Time spent	.06/.01 (.09/.11)	.05/.05 (.08/.15)
Problematic use	.14/.16 (.14/.18)	.06/.09 (.06/.11)
Self-disclosure	.13/.10 (.33/.28)	.03/.02 (.24/.20)
Motivations		
Information-seeking	.05/.08 (.26/.28)	.00/.01 (.22/.22)
Social interaction	.04/.07 (.28/.24)	.01/.02 (.25/.18)
Self-documentation	.10/.11 (.26/.27)	.02/.02 (.18/.19)
Self-expression	.06/.13 (.32/.33)	.01/.02 (.26/.23)
Entertainment	.08/.08 (.13/.18)	.05/.01 (.11/.11)
Passing time	.06/.03 (.01/.03)	.08/.03 (.03/.02)
Convenience	.03/.02 (.07/.05)	.03/.01 (.06/.04)
Self-experience		
Self-consciousness		
Private	.07/.08 (.23/.26)	.02/.02 (.18/.21)
Public	.11/.11 (.18/.18)	.03/.03 (.10/.10)
Cyberbullying victimization	.13/.11 (.18/.12)	.02/.05 (.07/.05)

Note. Sample 1: Values left of each forward slash are for Sample 1 (N = 517). Values right of each forward slash are for Sample 2 (N = 363). Values outside parentheses indicate offline context. Values in parentheses indicate social media context. Values in parentheses indicate social media context. R^2 values indicate the proportion of variance explained by the offline or social media Big Five. ΔR^2 values indicate the proportion of variance explained by adding the offline or social media Big Five apart from the other context.

Table 7 presents the proportion of variance explained in each outcome by each Big Five context set and changes in variance explained by adding the other set of Big Five. Findings showed that the social media Big Five predicted all the social media outcomes after controlling for the offline Big Five (ΔR^2s ranged from .03 to 26, ps < .05), supporting H3. Not surprisingly, the offline Big Five did not predict all of the social media outcomes after controlling for the social media Big Five. However, the offline Big Five explained additional variance in predicting time spent on social media, problematic social media use, and self-disclosure usage, four types of motivation to use social media (self-documentation, entertainment, convenience, and passing time), and private and public self-consciousness self-experience (ΔR^2s ranged from .02 to .08, ps < .05).[13] These results suggest that both a person's offline and social media Big Five traits are useful for predicting the person on social media.

Of secondary interest, we noted that the social media Big Five entered alone as predictors explained more of the variance on social media outcomes than the offline Big Five entered alone, as one might expect. This suggests that the offline and social media Big Five are not the same in terms of the predictive validity of social media outcomes.

Correlation Strengths and Patterns

Table 8. *Simple Correlations of the Offline and Social Media Big Five with Social Media Outcomes.*

Social media outcomes	O	C	E	A	N	*M*	*SD*
Usage							
Time spent	-.10/-.06 (.13/.18)	-.15/-.06 (.02/.14)	-.10/-.04 (.22/.31)	.00/-.04 (.10/.13)	.20/.09 (.12/.03)	3.82/ 3.84	1.27/ 1.22
Problematic use	-.14/ -.19 (.07/.12)	-.30/-.26 (-.12/-.04)	-.13/-.18 (.18/.21)	-.18/-.23 (-.10/-.09)	.31/.35 (.29/.33)	2.14/ 2.24	0.71/ 0.73
Self-disclosure	-.12/-.16 (.17 /.07)	-.20/-.18 (.00/.04)	.08 /.10 (.49/.43)	-.10/-.12 (-.04/-.06)	.21/.11 (.23/.21)	2.93/ 2.91	1.03/ 0.96
Motivations							
Information-seeking	.15/.09 (.38/.32)	.03/10 (.27/.27)	.15/.22 (.47/.50)	.07/.06 (.18/.16)	-.01/.04 (-.05/.04)	4.75/ 4.72	1.37/ 1.46
Social interaction	.09/.10 (.36/.26)	.03/.14 (.31/.25)	.14/.24 (.49/.57)	.08/.12 (.21/.18)	.03/-.06 (-.06/.00)	4.91/ 4.89	1.35/ 1.35
Self-documentation	.08/.06 (.25/.25)	.03/.15 (.22/.30)	.25/.24 (.48/.47)	.08/.09 (.18/.21)	.04/.05 (.05/.06)	4.54/ 4.62	1.43/ 1.53
Self-expression	.05/.13 (.31/.34)	.02/.10 (.27/.25)	.17/.28 (.54/.55)	.06/.13 (.22/.21)	.06/.05 (-.04/.00)	4.78/ 4.87	1.54/ 1.61
Entertainment	.00/.12 (.24/.22)	.03/.16 (.21/.30)	.12/.21 (.28/.36)	.21/.21 (.25/.23)	.01/-.09 (-.11/-.21)	5.81/ 5.91	1.00/ 1.09
Passing time	-.18/-.11 (.00/-.04)	-.10/-.07 (.01/.04)	-.15/-.04 (.08/.10)	-.02/.06 (.02/.07)	.14/.02 (.01/-.05)	4.88/ 5.00	1.11/ 1.08
Convenience	-.03/-.03 (.15/.08)	-.04/.10 (.14/.14)	.08/.10 (.19/.21)	.11/.05 (.19/.08)	.01/-.05 (.00/-.04)	5.41/ 5.52	1.14/ 1.13
Self-experience							
Self-consciousness							
Private	.09/.08 (.29/.21)	-.10/-.02 (.12/.20)	-.06/-.03 (.34/.37)	-.08/-.04 (.05/.11)	.22/.24 (.25/.23)	3.12/ 3.14	0.87/ 0.96
Public	-.02/-.05 (.15/.16)	-.01/.03 (.17/.18)	-.06/-.08 (.21/.21)	-.01/-.02 (.15/.12)	.29/.29 (.24/.27)	3.56/ 3.64	1.22/ 1.28
Cyberbullying victimization	-.08/-.16 (.02/.02)	-.18/-.27 (-.14/-.15)	-.06/-.13 (-.17/.08)	-.28/-.27 (-.25/-.19)	.28/.20 (.33/.29)	1.37/ 1.37	0.54/ 0.56

Note. Values left of each forward slash are for Sample 1 (*N* = 517). Values right of each forward slash are for Sample 2 (*N* = 363). Values outside parentheses indicate offline context. Values in parentheses indicate social media context. Values in parentheses indicate social media context. O = openness; C = conscientiousness; E = extraversion; A = agreeableness; N = neuroticism. off = offline context; SM = social media context. Absolute correlations of .09 (Sample 1) and .11 (Sample 2) or stronger are significant at $p < .05$.

Next, we examined whether differences appeared between the offline and social media Big Five in the strengths and patterns of correlation coefficients with social media outcomes (see Table 8). First, we examined the *strengths* of the correlation coefficients, noting whether the offline and social media traits explained the same amount of variance in the social media outcomes. Notable findings concerned social media motivations. Compared to offline openness, conscientiousness, and extraversion, these three traits on social media were stronger predictors of five of the motivations: information-seeking, social interaction, self-documentation, self-expression, and entertainment (average Cohen's *q*s of the differences were .25 for openness, .23 for conscientiousness, and .32

extraversion). On the other hand, the predictive strengths of offline and social media agreeableness and neuroticism for these motivations were more similar (average Cohen's *q*s of the differences were .11 for agreeableness and .09 for neuroticism). Taken together, these findings suggest that actively motivated social media users are most open, conscientious, and extraverted on social media compared to offline—on the other hand, motivation to use social media may not reflect offline agreeableness and neuroticism over these two traits on social media as much.

We subsequently examined the *patterns* of the correlation coefficients, noting whether the offline and social media traits predicted social media outcomes in the same direction (either positive or negative). Upon close examination, with few exceptions, offline openness, conscientiousness, and extraversion tended to negatively predict time spent on social media, problematic social media use, and self-disclosure usage, convenience and passing time motivations, and public and private self-conscious experience on social media while their respective social media traits tended to positively predict these outcomes. Further, by removing items with low corrected item-total correlations, the exception whereby social media conscientiousness did not predict self-disclosure was significant ($r = .17$, $p < .001$). In contrast, predictive pattern differences between offline and social media contexts did not tend to appear for agreeableness and neuroticism. Taken together, these results suggest that the heaviest users of social media are more open, conscientious, and extraverted on social media, while the lightest users are higher on these traits offline—on the other hand, light and heavy users may be equally agreeable and neurotic on social media compared to offline.

Discussion

This study was the first empirical investigation to test whether the Big Five emerge in personality reports specifying offline and social media contexts. Findings show that all five dimensions emerged in both reports. Of note, some conscientiousness items in the social media version of the Big Five Inventory-2—ones that negatively impacted reliability—loaded strongly with items under other traits in the offline context. This suggests that some items measuring conscientiousness offline may not apply well to the social media context.

As the structure of the Big Five replicated in both contexts, we examined the intercorrelations between the offline and social media Big Five and whether they were the same in terms of mean levels. The moderate to high intercorrelations of traits between the two contexts suggest that the offline and social media Big Five are similar, but they are not the same. As predicted, we found that all of the social media Big Five were lower than their respective offline traits in terms of their mean levels across participants. Intercorrelations and mean levels between the offline and social media Big Five suggested that conscientiousness and extraversion are the most different between offline and social media contexts. Three major contrasts between offline and social media contexts may explain the observed differences in personality between them. First, social media lack restrictions of time and space in offline contexts; users are free to interact with others regardless of the time of day or physical location (Bayer et al., 2020; McFarland & Ployhart, 2015). As such, instant messaging and the unstructured sharing of content on social media may not require the careful planning and diligence needed in offline contexts (e.g., at one's place of work). Users may even fail to follow norms on social media that they otherwise would in offline contexts. As a result, people may become irresponsible and disorganized while on social media, as evidenced by lower reports of conscientiousness on social media observed in the present research. Indeed, research on the "dark side" of social media suggests that platforms are rife with unconscientious behavior (e.g., cyberbullying, cybercrime, harassment, procrastination, risky behaviors; Baccarella et al., 2018; Huang et al., 2014; Meier et al., 2016; Tsai et al., 2017; Xie & Kang, 2015). The enhanced control over interaction with others on social media may also extend to how users feel on social media compared to how they feel offline, as evidenced by the lower reports of neuroticism on social media observed in the present research. These features may alleviate feelings of social anxiety or self-consciousness that have been shown to correlate with high levels of neuroticism (see Trapnell & Campbell, 1999).

Second, interpersonal features of social media allow users to seek social capital that may be unobtainable in offline contexts (e.g., easy access to vast online groups; Bayer et al., 2020; Cheng et al., 2019; McFarland & Ployhart, 2015). As such, users navigating digital platforms may not need social skills characterized by high levels of extraversion. Given how focal these interpersonal features are to social media, it may not be surprising why extraversion showed some of the largest differences between offline and social media contexts in the present research.

Interpersonal traits that comprise agreeableness (e.g., respect and compassion; Soto & John, 2017) may not be as relevant in this social capital-rich context as well—evidenced by the lower reports of agreeableness on social media observed in the present research. Shallow interpersonal interaction on social media can undermine deep, meaningful connections in the offline world (see Sbarra et al., 2019). Thus, future work could examine how differences in extraversion and agreeableness between offline and social media contexts impact peoples' relationships. Third, other features of social media, such as the algorithms that determine user experiences and guide them towards interacting with others who share the same characteristics (see Bakshy et al., 2015; Conover et al., 2012; Del Vicario et al., 2016; Flaxman et al., 2016), may explain why reports of openness were lower on social media in the present research. Future research may examine how differences in personality between offline and social media contexts vary by how individuals use these specific features of social media.

It is important to note that the differences between the offline and social media Big Five varied depending on the individual. The present findings suggested that most people, particularly those with moderate or high levels of the offline Big Five, report lower levels of the Big Five on social media than offline. Social media contexts may constrain the expression of the Big Five. It's also possible that those higher on the Big Five in offline contexts don't need to express high levels of the Big Five on social media as they may use social media to access resources they already have in offline contexts. For example, those high on offline extraversion may prefer offline communication (and thus report higher extraversion offline) but use social media to complement their offline social resources. This possibility may suggest rich-get-richer or social enhancement effects of social media (see Cheng et al., 2019; Liu & Brown, 2014). Furthermore, the findings suggested that some individuals, particularly those with low levels of the Big Five in offline contexts, report no difference or higher levels of the Big Five on social media. Those with low levels of the Big Five in offline contexts may benefit from social media. For example, those low on offline extraversion may find it easier to communicate via social media than offline contexts, given higher levels of anonymity and the ability to communicate asynchronously on social media. These findings may suggest poor-get-richer or social compensation effects of social media (see Cheng et al., 2019; X. Hu et al., 2017; Rains & Keating, 2011). Taken together, the present findings imply that poor-get-richer/social compensation and rich-get-richer/social enhancement effects of social media may not be opposing possibilities. Indeed, this interpretation of the present findings is consistent with a recent review by Cheng et al. (2019) that discussed how poor-get-richer/social compensation and rich-get-richer/social enhancement effects of social media can coincide. Future research may test whether differences in personality between offline and social media contexts help explain why some people benefit more from social media use than others (e.g., individual differences in benefits in terms of social capital from social media use).

Of further interest, the offline and social media Big Five did not have the same predictive validity of social media outcomes. Not surprisingly, the social media Big Five independently predicted social media outcomes apart from the offline Big Five. It is noteworthy that the offline Big Five together independently predicted some social media outcomes apart from the social media Big Five across both samples: time spent, problematic use, motivation for self-documentation, and public self-consciousness. As such, both a person's offline and social media personality can independently inform us about that person's usage, motivations, and self-experiences on social media.

Compared to offline openness, conscientiousness, and extraversion, these respective social media traits were stronger predictors of socialization, information-seeking, self-documentation, self-expression, and entertainment motivations to use social media. Furthermore, these three social media traits tended to positively predict social media outcomes while the respective offline traits were negative predictors. This suggests that heavier social media users are more open, conscientious, and extraverted on social media, whereas they are lower on these traits offline. People higher on these traits offline may prefer offline experiences relevant to these traits (e.g., exploring interests or communicating with others face-to-face); those higher on these traits on social media may prefer otherwise. In particular, the observed discrepancies between offline and social media extraversion and conscientiousness may suggest an "escape into the virtual world" (see Behm-Morawitz, 2013, p. 122) where some individuals seek out digital platforms like social media for experiences or opportunities they lack offline. Specifically, the present findings showed that those low on offline extraversion and conscientiousness spend more time on social media and show higher rates of problematic social media use compared to those high on these traits offline. Introverted and socially inhibited individuals find it easier to communicate via social media than in person, and people low in conscientiousness, with a tendency to procrastinate, may spend more time on social media activities, and therefore they report being more conscientious on social media than in offline contexts. These findings add to the growing findings on the duality of social media: Some use it as an adaptive strategy

whereas others use it as an escape from offline responsibilities (Kwan & Bodford, 2015; Teske, 2002). Future research may examine whether specific experiences or behaviors that may lead people to escape into the virtual world such as loneliness or procrastination explain the observed differences between offline and social media extraversion and conscientiousness.

On the other hand, the offline and social media versions of agreeableness and neuroticism revealed similar predictive strengths and patterns for social media outcomes. As such, a person's offline agreeableness and neuroticism may be just as useful as these respective social media traits for predicting social media outcomes.

Limitations and Future Directions

Like most studies on the Big Five, the present research included self-report assessments that may reflect participant bias (e.g., social desirability responding and limits on self-knowledge; see Paulhaus & Vazire, 2007). Future research may accordingly address whether the present findings replicate in study designs where these biases may not occur. For instance, researchers may wish to test whether differences between individuals' offline and social media Big Five as described by another person replicate the differences revealed by self-reports in the present study. Past research showed that personality reports of a target by others are fairly consistent with self-reports, particularly when the other is well-known by the target (e.g., close friend, family member; Connelly & Ones, 2010) and that people can infer a target's self-reported personality based on that target's social media content such as their post, pictures, etc. (see Tskhay & Rule, 2014 for a meta-analysis). However, some studies showed that some self-reported traits such as conscientiousness, agreeableness, and neuroticism are harder to infer from social media content that is observable to others (e.g., Gosling et al., 2011). The present findings may suggest that the limits in inferring a person's self-reported personality based on their social media content may result from not specifying the context of personality assessment. Nevertheless, researchers could obtain raters who know the target well on social media to test differences in the Big Five between offline and social media with reports by others.

Another limitation is that the present research cannot fully determine the source of why some items of the Big Five Inventory-2 may not apply the same to social media as offline. One possible source is *differential item functioning*: the relation between assessment items and the traits they represent may not be the same between offline and social media contexts. Another possible source is *differential dimensionality*: the dimensionality of the constructs representing these traits may not be the same between the two contexts (see Edwards & Wirth, 2012 for more on these sources). For example, *items* that assess conscientiousness (e.g., "leave a mess, doesn't clean up" and "tends to be lazy") may not tap into their respective secondary traits of organization and productiveness equally between offline and social media contexts, or participants may have had difficulty interpreting them. Alternatively, the *constructs* these traits represent may be different between the contexts. Given that some of the items measuring conscientiousness from the Big Five Inventory-2 loaded more strongly with items measuring agreeableness and extraversion, the constructs of some secondary traits of conscientiousness may be more interpersonal on social media than offline—perhaps as social media is a platform for interpersonal communication. Future research may test whether these two sources are present using an item-response theory framework (see Edwards & Wirth, 2012). To do so, researchers may construct alternative items capturing the content of these traits by considering social media context (e.g., "has a disorganized social media profile" may apply more on social media than "leaves a mess, doesn't clean up on social media") and test how these items load onto dimensions alongside items already available in widely used measures of the Big Five. If these alternative items continue to load more strongly with unexpected trait dimensions in social media, this suggests differential dimensionality. However, if the alternative items load most strongly onto their expected trait dimension, this suggests that the original items may have differential item functioning.

The samples used in the present research were undergraduate students and mostly younger adults (i.e., one of the largest demographic groups of social media users). Differences between the offline and social media Big Five may vary depending on age group—particularly since younger adults tend to be heavier users of social media and express different levels of the Big Five than older adults (Perrin, 2015; Soto et al., 2011). As such, an interesting direction for future research is to examine whether the observed findings will be consistent across the lifespan. Given the observed relationships between the offline and social media Big Five with social media use, older adults

may show more pronounced differences in some of the Big Five between the two contexts (e.g., openness, conscientiousness, and extraversion) given their tendencies for lighter use.

The present research tested differences in the offline and social media Big Five using modified versions of the Big Five Inventory-2 (Soto & John, 2017). There is ongoing debate on the nature of the secondary traits that comprise the Big Five (Olaru et al., 2015). Future studies could compare the offline and social media Big Five with other measures such as the Revised NEO five-factor inventory (Costa & McCrae, 1992b) that tap into a slightly different set of secondary traits of the Big Five to establish generalizability of the present results.

Conclusion

We conclude with two major implications. First, the differences in personality expression between offline and social media contexts may be analogs to how the personality expression of bicultural individuals varies depending on their cultural context. Prior research showed that the personality of bicultural individuals may vary depending on which cultural context is currently activated (Chen & Bond, 2010). Similarly, the context of social media may activate a different cultural context than offline contexts given evidence for normative differences in the ways people present themselves, exchange information, and communicate between these contexts (see Bayer et al., 2020). As conscientiousness and extraversion seemed to be the least similar dimensions out of the Big Five between offline and social media contexts, cultural differences between these two separate contexts may reflect specific norms that change the expression of these traits (e.g., the need for organization or the quality of socializing with others). Second, the findings comparing the offline and social media Big Five in terms of the predictive validity of social media outcomes suggest a need to study the Big Five in offline and social media contexts *separately* and *jointly* to fully understand the complete picture of how the Big Five predict social media outcomes. Doing so will serve future research to better understand social media outcomes.

Footnotes

1. Researchers have used different labels for each of the Big Five. For consistency of presentation, we refer to them as openness, conscientiousness, extraversion, agreeableness, and neuroticism.

2. The Big Five Inventory-2 (Soto & John, 2017) uses the label “open-mindedness” and “negative emotionality.” As stated in the previous footnote, we retain the labels “openness” and “neuroticism.” These labels still denote the same construct.

3. Sample 2 had similar preferred platform reports: 36.9% reported Snapchat; 33.6% Instagram; 12.4% Twitter; 5.2% WeChat; 3.9% Facebook, and 8.0% reported another platform.

4. Sample 2 had similar reliabilities for the social media outcomes: Problematic use (α = .88); self-disclosure (α = .86); information-seeking (α = .83); social interaction (α = .77); self-documentation (α = .82); self-expression (α = .86); entertainment (α = .82); passing time (α = .45); convenience (α = .71); private self-consciousness (α = .83); public self-consciousness (α = .90); and cyberbullying victimization (α = .91).

5. Some items were lower on the primary dimension than a secondary dimension or had no loading above .30 (i.e., no strong loading). Only one offline item, from the agreeableness scale, loaded more strongly with neuroticism items: “Is suspicious of other’s intentions offline” (-.19 on primary/.39 on secondary component). However, multiple social media items loaded more strongly on secondary components or failed to load strongly on the primary component. We noted two items from the agreeableness scale: “Tends to find fault with others on social media” (no loading above .30) and “Is suspicious of other’s intentions on social media” (-.02 on primary/.34 on a secondary component comprised of strong loadings from neuroticism items). Several items from the conscientiousness scale, loaded more strongly with agreeableness items: “Leaves a mess, doesn’t clean up on social media” (-.33 on primary/-.42 on secondary component); “Can be somewhat careless on social media” (-.28 on primary/-.40 on secondary component); and “Sometimes behaves irresponsibility on social media” (-.27 on primary/-.46 on secondary component). Another conscientiousness item loaded more strongly with extraversion items: “Tends to be lazy on social media” (-.44 on primary/-.48 on secondary component) and one more item, also

with a low item-total correlation, indicated no loading above .30: "Has difficulty getting started on tasks on social media."

6. We removed the corresponding items from the offline traits for these follow-up analyses as well so that each offline and social media scale had an equal number of items. After removing these items from the offline traits, reliabilities did not substantially change for offline openness (α = .81) nor conscientiousness (α = .83).

7. In Sample 2, "has few artistic interests on social media" also did not have a corrected item-total correlation above .30, but we noted another item, "avoids intellectual, philosophical discussions on social media," with a low corrected item-total correlation of .19. Reliability was .76 for openness overall without these items, suggesting some improvement. While all items had corrected item-total correlations above .30 for social media conscientiousness, removing the same three conscientiousness items as in Sample 1 maintained similar reliability (α = .79). As these items may have impacted the results, like Sample 1, we conducted all analyses in Sample 2 with these items removed in addition to the analyses with the full 12-item versions.

8. In Sample 2, although the correlation between extraversion and openness was not significantly stronger for social media context after removing the items with low corrected item-total correlations (z = -1.93, p = .05), the nonsignificant pattern was consistent.

9. In Sample 2, a significant univariate interaction effect appeared for agreeableness as well (F(1,361) = 3.95, p < .05) where the effect was more pronounced for the offline first condition (A_{off} = 3.83, SD = 0.56; A_{SM} = 3.63, SD = 0.66, p < .05) than the social media first condition (A_{off} = 3.78, SD = 0.52; A_{SM} = 3.68, SD = 0.52, p < .05).

10. In Sample 2, the change in effect size between offline and social media conscientiousness by removing items with low corrected item-total correlations was not as substantial: ds changed from 0.31 to 0.39.

11. In Sample 2, the levels of significance varied more for these interactions between offline quartile and context on Big Five reports that appeared for each trait (see Table 5). But the patterns were consistent with Sample 1.

12. The difference between offline and social media conscientiousness for those in the bottom quartile of offline conscientiousness was non-significant after removing the items with low corrected item-total correlations (p = .19).

13. Although this added predictive validity for private self-consciousness was not significant when items with low item-total correlations were removed (ΔR^2 = .02, p = .08). In Sample 2, the offline Big Five did not significantly predict self-disclosure, private self-consciousness, nor entertainment, convenience, and passing time motivations apart from the social media Big Five (ΔR^2s ranged from .01 to .03, ps = n.s.).

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Data Availability Statement

Data, code, and materials are publicly available:
https://osf.io/kbe68/?view_only=830439a320ca4457baf03ee75855dbc7

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Supplemental Material A

This supplemental material shows how the Big Five Inventory-2 (Soto & John, 2017) was specified for offline and social media contexts.

Citation for the Big Five Inventory-2:

Soto, C. J., & John, O. P. (2017). The next Big Five Inventory (BFI-2): Developing and assessing a hierarchical model with 15 facets to enhance bandwidth, fidelity, and predictive power. *Journal of Personality and Social Psychology, 113,* 117-143.

Instructions for offline version:

Here are a number of characteristics that may or may not apply to you **offline** (i.e., who you are in the physical world). For example, do you agree that you are someone who likes to spend time with others **offline**? Please choose the number next to each statement that indicates the extent to which you agree or disagree with that statement. I am someone who . . .

Instructions for social media version:

Here are a number of characteristics that may or may not apply to you on **social media** (examples of social media include Facebook, Instagram, Snapchat, and Twitter). For example, do you agree that you are someone who likes to spend time with others on **social media?** Please choose the number next to each statement that indicates the extent to which you agree or disagree with that statement. I am someone who . . .

Response scale:

1 = Disagree strongly, 2 = Disagree a little, 3 = Neutral; no opinion, 4 = Agree a little, = Agree strongly

Items (brackets denote modifications):

1. Is outgoing, sociable [offline/on social media.]

2. Is compassionate, has a soft heart [offline/on social media.]

3. Tends to be disorganized [offline/on social media.]

4. Is relaxed, handles stress well [offline/on social media.]

5. Has few artistic interests [offline/on social media.]

6. Has an assertive personality [offline/on social media.]

7. Is respectful, treats others with respect [offline/on social media.]

8. Tends to be lazy [offline/on social media.]

9. Stays optimistic after experiencing a setback [offline/on social media.]

10. Is curious about many different things [offline/on social media.]

11. Rarely feels excited or eager [offline/on social media.]

12. Tends to find fault with others [offline/on social media.]

13. Is dependable, steady [offline/on social media.]

14. Is moody, has up and down mood swings [offline/on social media.]

15. Is inventive, finds clever ways to do things [offline/on social media.]

16. Tends to be quiet [offline/on social media.]

17. Feels little sympathy for others [offline/on social media.]

18. Is systematic, likes to keep things in order [offline/on social media.]

19. Can be tense [offline/on social media.]

20. Is fascinated by art, music, or literature [offline/on social media.]

21. Is dominant, acts as a leader [offline/on social media.]

22. Starts arguments with others [offline/on social media.]

23. Has difficulty getting started on tasks [offline/on social media.]

24. Feels secure, comfortable with self [offline/on social media.]

25. Avoids intellectual, philosophical discussions [offline/on social media.]

26. Is less active than other people [offline/on social media.]

27. Has a forgiving nature [offline/on social media.]

28. Can be somewhat careless [offline/on social media.]

29. Is emotionally stable, not easily upset [offline/on social media.]

30. Has little creativity [offline/on social media.]

31. Is sometimes shy, introverted [offline/on social media.]

32. Is helpful and unselfish with others [offline/on social media.]

33. Keeps things neat and tidy [offline/on social media.]

34. Worries a lot [offline/on social media.]

35. Values art and beauty [offline/on social media.]

36. Finds it hard to influence people [offline/on social media.]

37. Is sometimes rude to others [offline/on social media.]

38. Is efficient, gets things done [offline/on social media.]

39. Often feels sad [offline/on social media.]

40. Is complex, a deep thinker [offline/on social media.]

41. Is full of energy [offline/on social media.]

42. Is suspicious of others' intentions [offline/on social media.]

43. Is reliable, can always be counted on [offline/on social media.]

44. Keeps their emotions under control [offline/on social media.]

45. Has difficulty imagining things [offline/on social media.]

46. Is talkative [offline/on social media.]

47. Can be cold and uncaring [offline/on social media.]

48. Leaves a mess, doesn't clean up [offline/on social media.]

49. Rarely feels anxious or afraid [offline/on social media.]

50. Thinks poetry and plays are boring [offline/on social media.]

51. Prefers to have others take charge [offline/on social media.]

52. Is polite, courteous to others [offline/on social media.]

53. Is persistent, works until the task is finished [offline/on social media.]

54. Tends to feel depressed, blue [offline/on social media.]

55. Has little interest in abstract ideas [offline/on social media.]

56. Shows a lot of enthusiasm [offline/on social media.]

57. Assumes the best about people [offline/on social media.]

58. Sometimes behaves irresponsibly [offline/on social media.]

59. Is temperamental, gets emotional easily [offline/on social media.]

60. Is original, comes up with new ideas [offline/on social media.]

Scoring key (reverse score items with "R"):

Openness: 5R, 10, 15, 20, 25R, 30R, 35, 40, 45R, 50R, 55R, 60

Conscientiousness: 3R, 8R, 13, 18, 23R, 28R, 33, 38, 43, 48R, 53, 58R

Extraversion: 1, 6, 11R, 16R, 21, 26R, 31R, 36R, 41, 46, 51R, 56

Agreeableness: 2, 7, 12R, 17R, 22R, 27, 32, 37R, 42R, 47R, 52, 57

Neuroticism: 4R, 9R, 14, 19, 24R, 29R, 34, 39, 44R, 49R, 54, 59

Supplemental Material B

Table S1. *Eigenvalues and Variance Accounted for by Six Components in PCAs.*

Component	Offline eigenvalues		Social media eigenvalues	
	Total	% of variance	Total	% of variance
1	10.95/11.83	18.26/19.72	9.51/10.20	15.85/17.00
2	5.02/5.24	8.37/8.73	6.41/5.92	10.69/9.87
3	4.23/3.80	7.06/6.33	3.82/3.82	6.37/6.37
4	3.32/3.11	5.53/5.18	2.53/2.65	4.22/4.42
5	2.72/2.50	4.53/4.16	1.97/1.99	3.29/3.32
6	1.49/1.65	2.48/2.74	1.51/1.65	2.52/2.76

Note. Values left of each forward slash are for Sample 1 (*N* = 517). Values right of each forward slash are for Sample 2 (*N* = 363). The sixth component is listed for reference.

Supplemental Material C

Table S2. *Principal Component Loadings from Sample 1.*

Item	Component				
	1	2	3	4	5
Openness					
Is curious about many different things	**.46 (.30)**	.17 (.17)	.05 (.20)	.19 (.25)	-.19 (-.01)
Avoids intellectual, philosophical discussions	**-.57 (-.46)**	.05 (.00)	-.19 (-.16)	.15 (.24)	.10 (.04)
Is complex, a deep thinker	**.61 (.52)**	.07 (.18)	.02 (.08)	-.08 (-.13)	-.05 (.06)
Has little interest in abstract ideas	**-.65 (-.58)**	-.02 (-.01)	-.07 (-.16)	-.10 (-.10)	.01 (.03)
Has few artistic interests	**-.43 (-.41)**	.05 (.09)	-.07 (-.12)	.-.07 (-.14)	-.20 (-.07)
Is fascinated by art, music, or literature	**.64 (.64)**	-.03 (-.16)	-.16 (-.13)	.19 **(.30)**	.04 (.04)
Values art and beauty	**.65 (.60)**	-.02 (-.01)	-.08 (-.08)	.24 **(.35)**	.10 (.03)
Thinks poetry and plays are boring	**-.58 (-.53)**	.00 (.05)	.10 (-.04)	-.10 (-.17)	-.14 (-.11)
Is inventive, finds clever ways to do things	**.49 (.48)**	.18 **(.30)**	.14 **(.31)**	-.02 (-.04)	-.29 (-.03)
Has little creativity	**-.59 (-.57)**	-.09 (-.10)	-.08 **(-.30)**	-.07 (-.01)	-.02 (.01)
Has difficulty imagining things	**-.56 (-.53)**	-.06 (-.09)	-.17 (-.18)	-.06 (.01)	.14 (.08)
Is original, comes up with new ideas	**.53 (.51)**	.18 (.14)	.18 (.27)	-.07 (-.09)	-.13 (-.06)
Conscientiousness					
Tends to be disorganized	.06 (.04)	**-.75 (-.49)**	-.03 (-.17)	.05 (-.12)	.01 (.05)
Is systematic, likes to keep things in order	-.04 (.03)	**.73 (.69)**	-.06 (-.02)	.08 (.22)	-.06 (.00)
Keeps things neat and tidy	-.07 (-.06)	**.76 (.66)**	.01 (.00)	.07 (.28)	-.08 (-.09)
Leaves a mess, doesn't clean up	-.08 (-.11)	**-.58 (-.33)**	.01 (-.08)	-.19 **(-.42)**	.03 (.12)

Tends to be lazy	-.14 (-.10)	**-.63 (-.44)**	-.24 **(-.48)**	.07 (.01)	.11 (-.03)
Has difficulty getting started on tasks	-.13 (-.05)	**-.59** (-.26)	-.23 (-.14)	.00 (-.12)	.13 (.23)
Is efficient, gets things done	.16 (.27)	**.68 (.47)**	.18 (.20)	.05 (.00)	-.17 **(-.32)**
Is persistent, works until the task is finished	.12 (.19)	**.59 (.59)**	.09 (.10)	.17 (.11)	-.18 (-.22)
Is dependable, steady	.22 (.05)	**.35 (.42)**	.12 (.22)	.18 (.18)	-.17 (-.05)
Can be somewhat careless	-.02 (-.02)	**-.57** (-.28)	.00 (.15)	-.19 **(-.40)**	.12 (.13)
Is reliable, can always be counted on	.14 (.14)	**.51 (.45)**	.26 **(.33)**	**.32** (.13)	-.05 (-.08)
Sometimes behaves irresponsibly	.01 (-.01	**-.48** (-.27)	.14 (.23)	-.20 **(-.46)**	.19 (.18)
Extraversion					
Is outgoing, sociable	-.04 (.08)	.03 (-.03)	**.74 (.70)**	.21 (.19)	-.21 (-.07)
Tends to be quiet	.02 (-.11)	.07 (-.07)	**-.78 (-.81)**	-.05 (.03)	.14 (-.09)
Is sometimes shy, introverted	.03 (-.10)	.03 (-.12)	**-.73 (-.70)**	.00 (.09)	.17 (.13)
Is talkative	-.03 (.08)	-.03 (.02)	**.77 (.77)**	.19 (.12)	-.10 (-.02)
Has an assertive personality	.04 (.12)	.03 (.12)	**.51 (.46)**	-.26 (-.25)	-.08 (-.03)
Is dominant, acts as a leader	.12 (.25)	.16 (.18)	**.65 (.58)**	-.10 (-.24)	-.08 (-.08)
Finds it hard to influence people	-.26 **(-.33)**	.04 (-.20)	**-.53 (-.30)**	.02 (.13)	.18 (.21)
Prefers to have others take charge	-.15 (-.22)	-.11 (-.18)	**-.58 (-.46)**	.17 (.16)	.05 (.07)
Rarely feels excited or eager	-.25 (-.24)	-.13 (-.15)	**-.32 (-.43)**	-.25 (-.15)	.11 (-.05)
Is less active than other people	-.01 (-.06)	-.29 (-.13)	**-.49 (-.67)**	.02 (-.02)	.12 (-.13)
Is full of energy	.13 (.25)	.21 (.07)	**.59 (.64)**	.25 (.15)	-.24 (-.19)
Shows a lot of enthusiasm	.14 (.23)	.19 (.08)	**.59 (.65)**	.28 (.28)	-.28 (-.13)
Agreeableness					
Is compassionate, has a soft heart	.08 (.17)	.01 (.04)	.02 (.25)	**.67 (.65)**	-.01 (.06)
Feels little sympathy for others	-.10 (-.18)	.14 (.07)	-.08 (-.23)	**-.31 (-.38)**	-.10 (-.10)
Is helpful and unselfish with others	.18 (.09)	.26 (.05)	.09 (.14)	**.50 (.51)**	-.10 (-.11)
Can be cold and uncaring	-.02 (-.04)	-.16 (-.22)	-.03 (-.15)	**-.69 (-.64)**	.00 (.07)
Is respectful, treats others with respect	.15 (.08)	.23 (.05)	-.01 (-.09)	**.56 (.69)**	-.06 (-.14)
Starts arguments with others	.06 (.03)	**-.32** (-.11)	.28 (.19)	**-.50 (-.62)**	.09 (.10)
Is sometimes rude to others	.04 (-.05)	-.26 (-.18)	.05 (.06)	**-.66 (-.66)**	.11 (.11)
Is polite, courteous to others	.15 (.02)	.23 (.07)	-.09 (-.05)	**.57 (.70)**	-.09 (-.17)
Tends to find fault with others	-.03 (.04)	-.09 (-.27)	-.14 (-.16)	**-.47** (-.26)	**.32** (.20)
Has a forgiving nature	.10 (-.01)	-.04 (.14)	-.03 (.02)	**.67 (.56)**	-.15 (-.17)
Is suspicious of others' intentions	.07 (.16)	.05 (-.21)	.01 (-.13)	-.19 (-.03)	**.39 (.34)**
Assumes the best about people	-.03 (-.09)	.05 (.08)	.12 (.21)	**.52 (.35)**	-.24 (-.26)
Neuroticism					
Is relaxed, handles stress well	.01 (.04)	.14 (.05)	.10 (.07)	-.07 (.02)	**-.67 (-.63)**
Can be tense	.07 (.02)	-.01 (-.05)	-.09 (-.17)	**-.37** (-.29)	**.50 (.50)**
Worries a lot	-.03 (-.07)	-.06 (.04)	-.28 (-.02)	.04 (.02)	**.70 (.67)**
Rarely feels anxious or afraid	-.07 (-.12)	.02 (-.04)	.19 (-.04)	.00 (-.10)	**-.60 (-.58)**
Stays optimistic after experiencing a setback	.20 (.09)	.12 (.07)	.19 (.06)	.09 (.15)	**-.55 (-.55)**
Feels secure, comfortable with self	.05 (.07)	.15 (.10)	**.31** (.23)	.05 (-.01)	**-.60 (-.56)**

Often feels sad	.05 (.05)	-.08 (-.09)	-.28 (-.03)	-.13 (-.12)	**.69 (.72)**
Tends to feel depressed, blue	.02 (.00)	-.14 (-.15)	-.26 (-.14)	-.16 (-.15)	**.68 (.69)**
Is moody, has up and down mood swings	.00 (-.03)	-.17 (-.20)	-.04 (.10)	.11 (-.15)	**.67 (.63)**
Is emotionally stable, not easily upset	.01 (-.05)	.15 (-.05)	.08 (-.11)	.09 (.14)	**-.71 (-.64)**
Keeps their emotions under control	.11 (-.02)	.24 (.11)	.01 (-.27)	.09 **(.33)**	**-.62 (-.54)**
Is temperamental, gets emotional easily	-.06 (-.02)	-.11 (-.15)	.02 (.18)	-.02 (-.29)	**.72 (.61)**

Note. Sample Size = 517. Loadings outside of parenthesis are from the offline reports. Loadings from inside the parenthesis are from the social media reports. Loadings above .30 are bolded.

Supplemental Material D

Table S3. *Principal Component Loadings from Sample 2.*

Item	Component				
	1	2	3	4	5
Openness					
Is curious about many different things	**.51 (.41)**	.21 (.26)	.13 (.13)	**.34** (.21)	.24 (.09)
Avoids intellectual, philosophical discussions	**-.55 (-.31)**	-.01 (.11)	-.21 (-.28)	.05 (.16)	-.02 (-.09)
Is complex, a deep thinker	**.57 (.48)**	.06 (.03)	.14 (.12)	.07 (-.06)	.01 (-.08)
Has little interest in abstract ideas	**-.59 (-.58)**	.03 (.00)	.03 (-.18)	-.12 (-.18)	-.08 (-.11)
Has few artistic interests	**-.46 (-.48)**	-.08 (-.10)	.00 (-.11)	-.02 (-.02)	.13 (.17)
Is fascinated by art, music, or literature	**.70 (.70)**	.02 (-.02)	-.19 (-.12)	.06 (.14)	-.04 (-.01)
Values art and beauty	**.70 (.68)**	.05 (-.12)	-.12 (-.09)	.04 (.24)	-.03 (.08)
Thinks poetry and plays are boring	**-.51 (-.47)**	.06 (.08)	.03 (-.02)	-.15 **(-.32)**	.16 (.08)
Is inventive, finds clever ways to do things	**.43 (.36)**	.07 (.26)	.22 **(.38)**	.11 (-.05)	.28 (.04)
Has little creativity	**-.58 (-.46)**	-.11 (-.14)	-.11 **(-.41)**	-.07 (-.09)	.00 (-.04)
Has difficulty imagining things	**-.51 (-.32)**	-.18 **(-.30)**	-.19 (-.21)	-.15 (.00)	-.02 (-.13)
Is original, comes up with new ideas	**.41** (.23)	.06 (.24)	**.31 (.36)**	.05 (-.09)	.25 (.12)
Conscientiousness					
Tends to be disorganized	.05 (-.05)	**-.75 (-.53)**	-.07 (-.23)	-.01 (-.07)	.00 (.01)
Is systematic, likes to keep things in order	-.01 (.07)	**.70 (.61)**	.00 (.07)	.02 (.24)	.04 (.01)
Keeps things neat and tidy	-.02 (.07)	**.77 (.68)**	-.08 (.03)	.06 (.27)	.04 (.15)
Leaves a mess, doesn't clean up	-.11 (-.09)	**-.59 (-.40)**	-.10 (-.12)	-.13 **(-.48)**	-.04 (-.01)
Tends to be lazy	-.02 (-.05)	**-.55 (-.32)**	-.29 **(-.47)**	-.07 (-.08)	-.05 (.13)
Has difficulty getting started on tasks	-.04 (.09)	**-.49 (-.43)**	-.20 (-.21)	-.07 (-.12)	-.27 (-.14)
Is efficient, gets things done	.14 (.11)	**.60 (.53)**	.20 **(.33)**	.10 (.10)	.22 (.15)
Is persistent, works until the task is finished	.15 (-.07)	**.61 (.45)**	.17 (.29)	.21 **(.33)**	.10 (.13)
Is dependable, steady	.19 (-.14)	**.50** (.21)	.15 **(.47)**	.24 (.25)	.14 (.06)
Can be somewhat careless	-.05 (-.06)	**-.45 (-.41)**	.07 (.14)	-.25 **(-.39)**	-.20 (-.11)
Is reliable, can always be counted on	.11 (-.03)	**.54 (-.37)**	.22 **(.44)**	**.34** (.28)	.14 (.14)
Sometimes behaves irresponsibly	-.11 (.05)	**-.35 (-.43)**	.20 (.17)	**-.30 (-.50)**	-.21 (-.15)
Extraversion					
Is outgoing, sociable	-.03 (.05)	.07 (.01)	**.70 (.70)**	.23 (.21)	.16 (.02)

Tends to be quiet	-.06 (-.09)	.04 (.02)	**-.80 (-.80)**	-.09 (.02)	-.12 (.04)
Is sometimes shy, introverted	-.03 (.00)	.04 (-.01)	**-.81 (-.74)**	-.08 (.07)	-.17 (-.06)
Is talkative	.01 (-.06)	.06 (-.02)	**.70 (.78)**	**.30** (.16)	.14 (.03)
Has an assertive personality	.01 (.11)	.05 (.08)	**.64 (.54)**	-.22 (-.24)	.08 (.02)
Is dominant, acts as a leader	.04 (.09)	.20 (.20)	**.71 (.60)**	-.14 (-.11)	.10 (.02)
Finds it hard to influence people	-.09 (-.11)	-.05 (-.19)	**-.60 (-.45)**	-.04 (.04)	-.15 (-.21)
Prefers to have others take charge	-.07 (-.18)	-.28 (-.17)	**-.57 (-.54)**	.14 (.10)	-.10 (-.06)
Rarely feels excited or eager	-.25 (-.21)	-.14 (-.11)	**-.40 (-.47)**	**-.34** (-.19)	-.17 (-.05)
Is less active than other people	-.06 (.07)	-.20 (-.02)	**-.47 (-.65)**	-.02 (-.07)	-.22 (.08)
Is full of energy	.13 (.09)	.15 (.03)	**.56 (.71)**	.16 (.14)	**.36** (.07)
Shows a lot of enthusiasm	.23 (.15)	.03 (.06)	**.53 (.64)**	**.42** (.27)	.23 (.03)
Agreeableness					
Is compassionate, has a soft heart	.12 (.19)	.14 (.01)	.13 (.14)	**.69 (.65)**	-.08 (.04)
Feels little sympathy for others	-.14 (-.12)	-.03 (-.08)	-.13 (-.18)	-.25 (-.27)	.11 (-.03)
Is helpful and unselfish with others	.20 (.02)	.23 (.16)	.00 (.09)	**.63 (.51)**	.02 (.08)
Can be cold and uncaring	-.11 (-.12)	-.14 (-.16)	-.13 (-.20)	**-.67 (-.64)**	-.11 (-.03)
Is respectful, treats others with respect	.18 (.11)	**.37** (.16)	.00 (-.05)	**.52 (.71)**	.04 (.10)
Starts arguments with others	-.16 (.01)	-.20 (-.28)	.25 (.17)	**-.45 (-.54)**	-.06 (-.04)
Is sometimes rude to others	-.06 (-.03)	-.25 (-.16)	.05 (.09)	**-.58 (-.70)**	-.09 (-.09)
Is polite, courteous to others	.27 (.09)	**.39** (.24)	-.05 (-.07)	**.56 (.66)**	.04 (.10)
Tends to find fault with others	.00 (.05)	-.17 (-.06)	-.10 (-.25)	**-.46 (-.39)**	-.25 (-.25)
Has a forgiving nature	.08 (.19)	.09 (-.03)	-.06 (.08)	**.65 (.53)**	.15 (.20)
Is suspicious of others' intentions	.10 (.28)	.19 (.11)	-.07 (-.27)	**-.40** (-.18)	-.16 (-.19)
Assumes the best about people	-.02 (-.14)	-.09 (-.12)	.13 (.20)	**.62 (.49)**	.19 (.25)
Neuroticism					
Is relaxed, handles stress well	-.03 (.12)	.02 (.05)	.15 (.13)	-.02 (.10)	**.69 (.61)**
Can be tense	-.02 (-.06)	-.06 (-.02)	-.07 (-.12)	-.25 **(-.37)**	**-.50 (-.47)**
Worries a lot	.07 (-.10)	.01 (-.02)	-.24 (-.05)	.06 (.01)	**-.69 (-.70)**
Rarely feels anxious or afraid	-.07 (-.03)	-.07 (-.02)	.17 (-.05)	-.09 (-.23)	**.61 (.57)**
Stays optimistic after experiencing a setback	.13 (.09)	.05 (-.05)	.22 (.13)	.19 **(.31)**	**.53 (.46)**
Feels secure, comfortable with self	.09 (-.02)	.16 (.13)	.27 **(.31)**	.06 (.06)	**.55 (.56)**
Often feels sad	.02 (.11)	-.12 (-.04)	-.20 (-.12)	-.18 (-.03)	**-.71 (-.70)**
Tends to feel depressed, blue	.03 (.05)	-.12 (-.06)	-.20 (-.18)	-.09 (-.06)	**-.73 (-.72)**
Is moody, has up and down mood swings	.06 (-.02)	-.12 (-.09)	-.06 (.01)	-.10 (-.16)	**-.65 (-.56)**
Is emotionally stable, not easily upset	.05 (-.11)	.13 (.14)	.08 (-.09)	.18 (.18)	**.72 (.64)**
Keeps their emotions under control	.00 (-.03)	**.33** (.18)	.01 (-.26)	.14 (.27)	**.62 (.59)**
Is temperamental, gets emotional easily	-.05 (.05)	-.15 (-.10)	.04 (.22)	-.07 (-.24)	**-.61 (-.58)**

Note. Sample Size = 363. Loadings outside of parenthesis are from the offline reports. Loadings from inside the parenthesis are from the social media reports. Loadings above .30 are bolded.

Supplemental Material E

We ran additional CFA models that assessed whether a five-factor structure fit reports on both versions of the offline and social media Big Five Inventory-2. To assess fit, we used comparative fit index (CFI) values above .900 and root mean square error of approximation (RMSEA) values below .080 as indicators of reasonable model fit (see Browne & Cudeck, 1993; Hu & Bentler, 1999). We found that a five-factor structure of personality showed acceptable fit according to the RMSEA but was not a good fit according to the CFI (see the table below). As such, we tried fitting other models proposed by other trait theories. Specifically, we fitted a two-factor model, following "Big Two" models (see DeYoung, 2006, DeYoung, 2015, Digman, 1997) that combine openness with extraversion and combine conscientiousness with agreeableness and neuroticism. We also fitted a one-factor model proposed by theories of a general factor of personality (see Musek, 2007; Van der Linden et al., 2010). The two-factor and one-factor models had unacceptable fit. To compare these fits to the five-factor model, we used values showing that the change in CFI above .01 as indicators of better fit (see Cheung & Rensvold, 2002). Under this criterion, the five-factor model was a better fit than the alternative models.

Table S4. *CFA Model Fits for Offline and Social Media Big Five (all 60 items included).*

Model	X^2	df	CFI	RMSEA
Five-Factor	5380.380/4511.642 (5397.734/4601.924)	1700	.687/.674 (.649/.623)	**.065/.067** **(.065/.069)**
Two-Factor	8437.822/6444.406 (7540.081/6215.570)	1709	.429/.450 (.446/.414)	.087/.087 (.081/.085)
One-Factor	9192.802/6994.943 (8596.358/6576.929)	1710	.365/.386 (.346/.368)	.092/.092 (.088/.089)

Note. Values left of each forward slash are for Sample 1 (N = 517). Values right of each forward slash are for Sample 2 (N = 363). Values outside of parentheses are for offline models. Values in parentheses are for social media models. CFI = Comparative fit index; RMSEA = Root mean square error of approximation. CFI values ≥ .900, and RMSEA values ≤ .080 are bolded.

We should note that the unacceptable fit of the five-factor model according to the CFI is consistent with prior research (e.g., Borkenau & Ostendorf, 1990; Church & Burke, 1994; McCrae, et al., 1996; Parker et al., 1993; Vassend & Skrondal, 1997). Together, these previous findings and the present ones raise questions about the appropriateness of using CFAs to assess the structure of the Big Five. Researchers have argued that CFA requirements are too restrictive for research on the Big Five (e.g., indicators are likely to load strongly onto secondary factors unless researchers develop items that are nearly identical in content; Marsh et al., 2010).

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