Relationship Between Narcissism, Social Media Use and Time Spent on Social Media

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Abstract

The present study examined the relationship between narcissism including vulnerable and grandiose narcissism and the time spent on social media, after controlling for gender, age, and motivations of use of social media. Narcissism is a complex phenomenon studied across different psychology subfields, characterised by wide spectrum of behaviours such as a massive sense of self-importance arrogance, and callous defence of one's self-image as perfect, with a constant need for validation and flattery. The relationship between narcissism and social media use have been studied since first social media websites were launched. Social network platforms (SNSs) are defined as a web-based services where individuals engage and connect with other users within the system. The method of non-probability sampling was used to recruit the participants through different social media networks, such as WhatsApp, Facebook, and Messenger (n = 39). A quantitative approach was adopted to collect the data through an online questionnaire produced using a survey builder, Google Forms. There was no relationship found between the variables, however there was a relationship found among the following motivations factors: information exchange, conformity, new connections, recreation, and escapism, and a relationship between narcissistic scores and the motivations factor experimentation. These findings expand on previous research in relation to individual's motivations to use social media and further our understanding of narcissism and motivations to use social media.

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Introduction

Social media has been around for a while, and ever since the beginning research has investigated the relationship between personality (e.g., Narcissism) and online behaviour. This topic is important because online behaviour can negatively impact people's mental health, work life and personal relationships (Twenge et al., 2018; McCain & Campbell, 2018).

In the below section we will start by briefly reviewing the main concepts of personality, narcissism, and social media use, followed by a literature review.

Definition of personality

Personality is what makes each individual unique and distinctive from others. It informs the way we relate to others as much as the way we behave and use Social Networking Sites.

According to the American Psychological Association (2021) “personality refers to individual differences in characteristic patterns of thinking, feeling and behaving. The study of personality focuses on two broad areas: One is understanding individual differences in particular personality characteristics, such as sociability or irritability. The other is understanding how the various parts of a person come together as a whole.” According to the two-polarities model, personality is defined as a process that evolves from interpersonal relationships and the definition of oneself across the life span (Luyten & Blatt, 2013).

Definition of narcissism

Narcissism is a complex phenomenon studied across different psychology subfields, such as clinical, organizational developmental and social psychology, characterised by wide spectrum of behaviours such as a massive sense of self-importance, it meaning grandiosity, arrogance, and callous defence of one’s self-image as perfect, for the means of regulating self-esteem and an inflated and unrealistic self-image, compulsive bragging, constant need

for validation and flattery, narcissists crave for status and recognition (Eksi, 2016; Blickle et al., 2006: Araújo et al., 2021).

According to the agency model of narcissism, narcissism is a self-reinforcing system of traits, abilities, and behaviours (McCain & Campbell, 2018). It is suggested that psychopathology derives from a conflicted dichotomy adaptation of the aspects of relatedness and self-definition throughout the life span, therefore, the attempt to keep a balance between these two aspects (relatedness and self-definition) of personality derives in a personality disorder (Luyten & Blatt, 2013). Furthermore, the Diagnostic and Statistical Manual of Mental Disorders states that individuals with personality disorders such as: antisocial, narcissistic, paranoid, schizoid, schizotypic, avoidant, and obsessive-compulsive disorders show more preoccupation with self-definition.

Narcissists regard people as less competent and their excessive self-confidence prompt them to provide ill-advice and take bad decisions, these behaviours extend beyond private life, reaching the work environment, where their egoistical decision making and acts can affect co-workers and stakeholders (Araújo et al., 2021).

Narcissism informs human behaviour (Back et al. 2010), usually conceptualized as a spectrum, ranging from normal to maladaptive or pathological forms (Eksi, 2016). Healthy narcissism serves to protect and nourish oneself (Muller, 2014); it gives the individual a steady sense of self-worth that gives the strength for genuine achievement, recover from disappointment or failure and finding comfort and support in relationships (MacDonald, 2014). Healthy narcissism defines the infant's sense of worth through the reinforcement of an empathic adult that reflect back to the infant that he is present, important and care for (Muller, 2014), on the other hand, pathological narcissism develop when there is a need for compensation of the self with others that goes beyond the healthy need for affirmation and validation so these individuals create an idealized self-image that require other's constant

affirmation and validation (Muller, 2014). Moreover, pathological narcissists are characterized for using flashy and neat clothing, charming facial expressions, self-assured body movements and humorous verbal expressions, which make them more likeable at first (Back et al., 2010). Overall, pathological narcissism is formally defined as a consistent pattern of grandiosity, self-focus, and sense of self-importance (Back et al., 2010) making them feel entitled of the life of the person they have a relationship with (Muller, 2014).

This feeling of entitlement over other people's lives make the pathological narcissists feel injured when someone break alliance with them, they are not capable to understand that someone committed to them can refuse to continue a relationship, for them it translates as an actual death of self, and so pathological narcissists sometimes can only imagine the start of a new life by killing the person who in their mind have killed them first (Muller, 2014), because for narcissists relationships with others are only a means for regulating self-esteem (Eksi, 2016) and so when that bond is broken the narcissist feels their sense of worth have been put in doubt. Narcissism have been studied as subtype classification and they are: grandiosity (the overt type) and vulnerability (the covert type), the grandiose narcissism is characterized with attention seeking, arrogance, grandiosity, little anxiety, and a sense of entitlement, while the vulnerable narcissist is hypersensitive to other's criticism, inhibition, observable distress, and outwardly modest behaviour (Eksi, 2016). Summarizing, these types are very distinctive, the overt type will be dominant and display antagonistic interpersonal behaviours, while the covert type individuals will have low self-esteem, attachment problems and introversion (Miller et all., 2015).

Narcissists have the need to maintain their grandiose self-concept through behaviours, need to engage with people and generate interpersonal strategies to obtain self-affirming feedback from the environment (McCain & Campbell, 2018).

Narcissism and social media

The relationship between narcissism and social media use have been studied since first social media websites were launched (McCain & Campbell, 2018). Social network platforms (SNSs) are defined as a web-based services where individuals construct a profile, public or semi-public, and engage and connect with other users from within the system (Alhabash et al., 2012). Thus, SNSs such as Facebook, Twitter, or Instagram, are designed to allow users to share, in a matter of seconds, exuberant pictures and flattering statuses that can enhance self-image and personality, with the potential to receive instant feedback from followers in the form of "likes" and comments (McCain & Campbell, 2018).

Essentially, SNSs allow users to receive instant gratification and validation, and as such, can be considered as a favourable medium conducive of narcissism because SNSs instigate broad but shallow social networks that fit well individuals that are high in grandiose narcissism, as they are known to prefer emotionally shallow relationships (McCain & Campbell, 2018).

Literature review

The use of social media is extremely popular across all age groups, lately people turn to social media to show themselves (McCain & Campbell, 2018) because of the profound desire of humans to connect with others, making social media so appealing and motivating (Bradley et al., 2019). Social media is a medium for quick reinforcement and admiration (McCain & Campbell, 2018), all these factors might explain why the levels of narcissism among millennials is in the rise along with the increased use of social media (Bergman et al., 2011). Interestingly, the rich-get-richer hypothesis suggests that individuals with big social networks and socially skilled can reap off big benefits from SNSs, by enhancing their social communication than individuals less socially adept, in contrasts the social-compensation

theory suggests that less socially skilled individuals will use SNSs to increase their social connections by forging social relationships online (Gosling et al., 2011).

Social media encourage users to share selfies facilitating admiration and validation from other users, narcissistic aspects such as grandiose and exhibitionistic are linked to taking selfies (Koterba et al., 2021). For example, Twitter users scored higher in openness and more Machiavellian, thus, more motivated to use Twitter for career promotion, social connection, and attention-seeking than Facebook users (Marshall et al., 2018).

Information control and privacy are some of the concerns for vulnerable narcissists in social media platforms, thus, traits such as self-esteem, computer anxiety and concern for information privacy can predict online behaviours because these are psychological factors that predict how users will respond to privacy-threatening activities in SNSs, it meaning that vulnerable narcissist will display behavioural intention to control privacy, and as a consequence vulnerable narcissists are more likely to disengage from SNSs when they feel their privacy can be threatened (Ahn et al., 2015).

Individuals scoring high in narcissism will be more inclined to expose personal information in social media because narcissists like to boast and brag about themselves and social media platforms are a very accessible and convenient place for self-promotion (Ahn et al., 2015). Though, both vulnerable and grandiose narcissists will use social media to promote themselves and seek attention at the same level, they will not behave the same in relation to privacy (Ahn et al., 2015). Vulnerable narcissist showed more concern with their privacy in social network sites (SNS) because they are more hypersensitive and hypervigilant about the private information they share, while grandiose narcissist want to promote themselves regardless of risks of privacy invasion, therefore they will be less vigilant and sensitive about spreading personal information (Ahn et al., 2015).

But being concerned with privacy will not stop individuals scoring high in narcissism to share personal information because it helps them to be more likable on social media and make more friends (Mehdizadeh, 2010). Narcissists appear to use SNSs as a medium to display vanity and manipulate their self-image just for gaining approval and attention (Bergman et al., 2011).

Scoring high in extraversion, openness, and neuroticism, as well as being active online (have a lot of online friends and post frequently) have been found to be positively correlated with more time spent on social media and high scores in narcissism (Kuo & Tang, 2014, Heser et al., 2015), as well as having more photo albums in Facebook, (Brailovskaia & Bierhoff, 2016; Heser et al., 2015). Additionally, narcissism was found to be positively associated with self-promotion through quotes and personal information, numbers of wall posts (Heser et al., 2015), thus narcissism is positively correlated with the numbers of times a day Facebook is checked and the time spent in Facebook (Heser et al., 2015). As it gives narcissists the chance to satiates attention seeking, approval and promote shallow relationships (Buffardi & Campbell, 2008; Bergman et al., 2011).

Social media users seem to prolong their personalities in social networking sites as a mechanism to escape real life or compensate for a lacking aspect of their real lives (Gosling et al., 2011; Anderson et al., 2012).

There are personality traits such as extraversion that it is related to seeking out more virtual social context than interaction in a social networking context such as Facebook because extroverts as well as introverts work on matching the characteristics of their real-life circles of socialization in social media platforms too (Gosling et al., 2011).

Facebook allows users to be in control of their profile and how they want to portray themselves and what benefits to draw from these interactions (Garcia & Sikström, 2014), as such, users scoring high in malevolent behaviour (self-promotion), emotional coldness,

duplicity, and aggressiveness (all belonging to the Dark Triad of personality: Psychopathy, Narcissism, and Machiavellianism) are manifested in Facebook updates (Garcia & Sikström, 2014). Psychopaths and narcissist benefit more through short interactions to take advantage of people but maybe it does not translate into the time they spent in social media and if the interactions are passive or active (Garcia & Sikström, 2014).

Anderson et al. (2012), found that Facebook users spent time online rather passively, for example checking personal messages and viewing other people's profiles, than actively posting information or pictures, for example the Uses and Gratifications (U&G) approach consider social media users as active and goal orientated consumers of media (Alhabash et al., 2012). The motivations to use social media can be for social connection, sharing photographs and content such as applications and games, for social investigation, social network surfing, and status updates, it means that with the U&G approach we can assume that an individual's choice of medium and amount spent on social media reveal an individual's media-use behaviour as well as their personality and narcissistic scores (Alhabash et al., 2012).

While scoring high in narcissism can influence behaviour on social network, gender and age is an area that is not much investigated, for example McCain & Campbell (2018) suggest that the relationship between social media use, narcissism and age can be deemed to generational or developmental effects for example Gen Xers, who are users in their 30s and 40s, have been associated with narcissism and Facebook use, on the other hand, there was no correlation found with narcissism and social media use with Millennials or Generation Y, primarily in their 20s, that have lived a life submerged in a saturated social media world. Narcissists tend to share more selfies online, it can be explained by the complex an multidimensional nature of narcissism, like previously mentioned non pathological narcissism includes vanity and the need to exploit others to sell oneself as a strong leader and

show superiority, on the other hand vulnerable narcissist are more dependent on positive appraisal, conceal perceived weaknesses and self-esteem fluctuates in accordance to others appraisal, as a result social media platforms are the perfect medium for both variants of narcissism to portray themselves exactly as they believe they are or want to be, for instance by sharing selfies to an audience that have the potential to provide instant gratification and positive feedback (Barry et al., 2019). Some research show that narcissism declines in older people (Foster et al., 2003) and so is the gap in the literature and what are the intentions and motivation for spending time on social networks, therefore this study is aims to understand the relationship between age, gender, narcissistic scores, motivations, and time spent on social media, the importance of understanding these relationships lies in that human behaviour online and the time spent on social media platforms can have a negative effect on individual's mental health (Twenge et al., 2018). Nonetheless, grandiose, and vulnerable narcissism appear to be risk factors for aggression such as online bullying and trolling, which can have a very negative effect on mental health (Kjærvik & Bushman, 2021). For example, a meta-analytic review found that narcissism is related to direct, indirect, and displaced aggression, specifically narcissism being strongly related to offline and online bullying, showing a significant positive relation, another significant finding was the link between narcissism and trolling, finding a significant positive correlation between narcissism and trolling (Kjærvik & Bushman, 2021).

In a positive note, social network platforms are becoming more popular, and being used as well as a medium of communication among young people, the use of social media platforms can increase self-esteem and well-being in adolescence when positive feedback is provided but when the feedback is negative it decreases self-esteem, that being said, excessive use of social media can have a negative effect in an individual's work life and personal relationships (Pelling & White, 2009). The excessive use of SNSs can result in

internet addiction (Pelling & White, 2009). Which refers to when an individual engages compulsively in internet use, and research suggest that excessive internet use can have a negative impact on individuals mental health including loneliness, depression, as well as problems in different areas of life (e.g.,, academic, professional, personal, etc.) (Pelling & White, 2009); when users have a strong need to belong with others that does predict addiction to Social Network Sites (SNS) (Pelling & White, 2009; Wilson et al., 2010).

Internet addiction and time spent on social media is highly associated with decreasing psychological well-being (Twenge et al., 2018); A study conducted by Twenge et al. (2018) found that 8th and 10th graders that spend more time on social networking platforms experience less happiness, had lower self-esteem and were more dissatisfied with their lives than those who spent more time in other non-screen activities such as, face to face social interactions, sports and homework, experience higher psychological well-being. But surprisingly for 12th graders these correlations were weaker, suggesting that screen time among this age group does not affect their well-being, on the other hand positive correlations in relation to non-screen time and well-being were similar among all age groups.

This is a new field of research that evolves rapidly and consistently (McCain & Campbell, 2018). The way humans behave on the internet and more specifically in social media can tell a lot about their personality traits, such as narcissism and SNSs reflect and fuel narcissistic tendencies (Gnambs & Appel, 2018). In Facebook alone there are over 845 million users around the world, the research is consistent in finding that people scoring high in Narcissism will spent more time in Social Media because it provides them with a favourable environment to gain instant admiration and self-esteem which reinforce the narcissistic self; narcissist post more pictures of themselves, have more friends and post more frequent statuses on social media and more frequently (McCain & Campbell, 2018). Studies suggest that the more time we spent on social media the bigger the impact on our mental

health and wellbeing will be, cross-sectional research suggests that passive social media use, that is scrolling through news feeds and pictures of friends, can increase depressed mood, and depressed mood is a strong predictor for depression (Aalbers et al., 2019).

Research suggest that the time spent on social media can have negative effects on our well-being such as promoting stress, loneliness, and depression symptoms (Meier et al., 2016; Aalbers et al., 2019) for example a study conducted by Aalbers et al. (2019) found that individuals that spend more time passively on social media have lower attentional control, this offers an explanation how passive social media use (PSMU) may decrease affective well-being. Moreover, being permanently connected online, procrastinating with Facebook and decreased well-being is strongly associated with negative consequences on individuals' daily life, this is because individuals who are prone to check on Facebook constantly for other users' updates can conflict with prioritization of tasks, impacting their performance and well-being (Meier et al., 2016). The importance of this study is that it will help identify the impact of narcissism on SNSs use, as well as the time spent on SNSs in relation to age, because of the implications of the pervasive increasing use of social media has in interpersonal interactions (Barry et al., 2019) and well-being and mental health (Meier et al., 2016; Aalbers et al., 2019).

The current study

Therefore, this current study aims to investigate the following questions: Q1 is there a relationship between the time spent on social media, age, and gender? Q2 Is there a relationship between time spent on social media and motivations? Q3 Is there a relationship between overall narcissistic scores, including grandiose and vulnerable narcissistic scores and the time spent on social media? We hypothesise, as established by previous literature; that there will be a relationship between the predictor variables (PV) age, gender, motivations and narcissism scores and the criterion variable (CV) time spent on social media.

Methods

Participants

The method of non-probability sampling was used to recruit the participants through different social media networks such as WhatsApp, Facebook, and Messenger. Participants had to be over the age of 18 to take part in the study and they must have at least one account open in social media (e.g., Facebook, Twitter, Instagram).

The sample for the current study consists of 39 participants, of which 61.5% are Females (n = 24), 61.5% are Males (n = 13) and 5.1% Prefer not to say (n = 2), participants age ranging from 21 to 52. The G* Power calculator (Faul et al., 2009) was used to determine the sample size, where a minimum sample size of 153 participants was needed, for this study the predictor variables are a total of 5 (age, gender, narcissism scores, motivations for use of SNSs scores and time spent on SNSs scores). The sample size for this study is quiet below this requirement, and the reason for this could be the COVID-19 pandemic situation where participants could be only reached by mouth of word and by sharing the link for the survey online.

Design

The researcher adopted a cross-sectional study design, and all participants must comply with the two requirements, one was being over the age of 18 and having a social media account active at the moment of participation. A quantitative approach was adopted to collect the data through an online questionnaire produced using a survey builder, Google Forms. Participants completed an online questionnaire that consists of 5 sections such as age, gender, Five-Factor Narcissism Inventory–Short Form (FFNI-SF), Social Media Motivations Scale (SMMS) and Social Networking Time Use Scale (SONTUS). The criterion variable examined was time spent on social media (SONTUS Scale), and the predictor variables were the demographics (age and gender) the narcissism scores (FFNI-SF Scale) and motivations to

use social media (SMMS Scale). Hierarchical Multiple Regression analysis was conducted to investigate the relationship between the criterion variable Time spent on social media (SONTUS) and the predictor variable Motivations for using social media (10 facets Procrastination, Freedom of expression, Conformity, Information exchange, New connections, Ritual, Social maintenance, Escapism, Recreation, and Experimentation SMMS) and Narcissism scores (FFNI-SF), after controlling for the predictor variables age and gender.

Materials

The questionnaires for this study were compromised of demographic questions and three distinct scales were produced using a survey builder, Google Forms. The demographic questions provided information needed to run the statistics and to create a profile of the participants, for this section questions like gender and age were included in the questionnaires.

Five-Factor Narcissism Inventory–Short Form (FFNI-SF) with Cronbach's alpha value ranging from .63 to .90 develop by Glover, Miller, Lynam, Crego, & Widiger (2012) is a 60 item, self-report scale to measure 15 traits related to narcissistic personality disorder (NPD), as well as vulnerable and grandiose narcissism, items are measured by a 5-points Likert scale ranging from *1 = Disagree strongly* to *5 = Agree strongly*. Vulnerable narcissism is scored by summing up the facet cynicism/distrust, need for admiration, reactive anger, and shame. Grandiose narcissism is scored by summing up the facet indifference, exhibitionism, authoritativeness, grandiose fantasies, manipulativeness, exploitativeness, entitlement, lack of empathy, arrogance, acclaim seeking, and thrill seeking. Total scores indicate the subject's overall level of narcissism.

Social Media Motivations Scale (SMMS) with Cronbach's alpha for all subscales of the SMMS in the medium to high range (Procrastination = .893, Freedom of expression = .875, Conformity = .805, Information exchange = .817, New connections = .791, Ritual =

.802, Social maintenance = .757, Escapism = .820, Recreation = .831, and Experimentation = .594) develop by Orchard, Fullwood, Galbraith, & Morris (2014) is a 40-item, self-report scale to measure the motivations behind social media use. Items are presented to participants in the form of a Likert scale, ranging from *1 = Strongly disagree* to *6 = Strongly agree.* The questionnaire aims to measure the following facets Procrastination, Freedom of expression, Conformity, Information exchange, New connections, Ritual, Social maintenance, Escapism, Recreation, and Experimentation, when using social media.

Social Networking Time Use Scale (SONTUS) with Cronbach's alpha .92 developed by Olufadi (2016) consists of 29 questions using a scale of 1 (not applicable to me during the past week) to 11 (I used it more than 3 times during the past week but spent more than 30 min each time) to indicate how often they use the SNSs (e.g., Facebook) during the past week. The common Likert scale measures like ‘‘almost never", ‘‘frequently", ‘‘almost always", ‘‘sometimes" ‘‘often" etc., is not used because it can be subjective to a person's opinion, for instance the option "sometimes" can be more or less frequent then for another person, additionally the option "not applicable" is included because some situations might not be applicable for a participant in that week.

Procedure

A post briefly explaining the nature of the study was advertise in social media sites such as Facebook with the title Are Your Personality Traits Related to the Way You Use Social Media?; including detailed information such as age criteria, it being 18 or over, and having at least one open account in social media, providing in the same post the direct link to the questionnaire. The researcher also advertised the study post through WhatsApp and Messenger applications, including the same information as for the Facebook post.

The link for the questionnaire was created through the survey builder, Google Forms, once participants click in the link, they are directed to an Information Sheet providing details about

the nature and purpose of the study, as well as great detail about requirements to take part, possible risks, and confidentiality, followed by a Consent Sheet where participants must agree and unknowledge understanding of the previous conditions explained in the Information Sheet, once they accept this they were directed to the first questionnaire (FFNI-SF), second (SMMS) and third last (SONTUS). National College of Ireland Research Ethics Committee in 2019 has granted the ethical approval to carry on this project, before recruiting participants and collect data.

Results

Descriptive statistics

The sample consisted of 37 participants, of which 64.9% are Females (n = 24), 61.5% are Males (n = 13), participants age ranges from 21 to 52 (M = 35.7, SD = 7.531).

Analysis of descriptive statistics was performed for the continuous variables Time spent on social media (SONTUS), Motivations for using social media -10 factors Procrastination, Freedom of expression, Conformity, Information exchange, New connections, Ritual, Social maintenance, Escapism, Recreation, and Experimentation – (SMMS) and Narcissism scores (FFNI-SF) to generate the measures of central tendency such as Means, Medians and variance: Standard Deviations and Range and Confidence Intervals (See Table 1).

Table 1

Descriptive statistics of all continuous variables

Variable	*M* [95% CI]	*Median*	*SD*	Range
Age	35.70 [33.19, 38.21]	37.00	7.531	21-52
SMMS				
Procrastination	22.78 [20.98, 24.58]	24.00	5.396	12-32
Freedom of expression	13.76 [12.08, 15.44]	13.00	5.041	6-23
Conformity	8.76 [7.52, 9.99]	8.00	5.396	5-21
Information Exchange	10.57 [9.35, 11.78]	10.00	3.700	4-17
New Connections	7.59 [6.31, 8.88]	6.00	3.648	4-17
Ritual	11.65 [10.50, 12.79]	12.00	3.434	4-18
Social Maintenance	16.05 [14.97, 17.13]	16.00	3.240	8-20
Escapism	4.00 [3.36, 4.64]	4.00	1.915	2-8
Recreation	5.35 [4.73, 5.98]	6.00	1.874	2-8

Experimentation	2.41 [2.01, 2.80]	2.00	1.189	2-9
Vulnerable Narcissism	43.62 [40.06, 47.18]	43.00	10.681	23-61
Grandiose Narcissism	94.65 [88.02, 101.27]	89.00	19.871	67-144
Narcissism	138.27 [130.30, 146.24]	137.00	23.916	98-202
Time Spent on SNS SONTUS	9.08 [8.12, 10.04]	9.00	2.871	5-18

Inferential statistics

Hierarchical Multiple Regression analysis was conducted to investigate the relationship between the criterion variable Time spent on social media (SONTUS) and the predictor variables age, gender, Motivations (10 factors Procrastination, Freedom of expression, Conformity, Information exchange, New connections, Ritual, Social maintenance, Escapism, Recreation, and Experimentation SMMS), Vulnerable Narcissism, Grandiose Narcissism and a second Hierarchical Multiple Regression analysis was performed to assess the relationship between time spent on social media and overall Narcissism scores (FFNI-SF), after controlling for the predictor variables named above.

Additionally, preliminary analyses were conducted to ensure no violation of the assumption of normality, time spent on social media (SONTUS) was not normally distributed (p = .001) this could be due to the small sample size.

Hierarchical Multiple Regression 1

Hierarchical Multiple Regression analysis one was performed to assess the relationship between time spent on social media and vulnerable narcissism and grandiose narcissism after controlling for age and gender, and motivation factors. There was no relationship between the CV and the PVs (p = .336) in the model. However, there was a correlation between the following PVs: Information Exchange and Conformity (p = .012), Information Exchange and New Connections (p = .036).

Preliminary analyses were conducted to ensure no violation of the assumption of normality, linearity, and homoscedasticity. The CV was not normally distributed (see appendix G). Additionally, the correlations amongst the predictor variables (age, gender, procrastination, Freedom of expression, Conformity, Information exchange, New connections, Ritual, Social maintenance, Escapism, Recreation, and Experimentation, vulnerable narcissism, and grandiose narcissism) were examined and presented in Table 2. All correlations were weak ranging between r = -.05 to .36. All Tolerance and VIF values were in acceptable range indicating no violation of multicollinearity, therefore the data was suitable for linear regression analysis.

In Step 1 of the hierarchical multiple regression two predictors were entered: gender and age. This model was statistically non-significant F (2, 34) = .840; p = .441 and explained 4.7% of variance for time spent on social media (see Table 2 for details). In Step 2, after the entry of procrastination, Freedom of expression, Conformity, Information exchange, New connections, Ritual, Social maintenance, Escapism, Recreation, and Experimentation the total variance explained by the model was 42% F (12, 24) = 1.446; p = .213. The introduction of the predictors in Step 2 explains an additional 37.3% variance in time spent on social media. In Step 3, after the entry of vulnerable narcissism and grandiose narcissism the total variance explain by the model was 43.4% F (14, 22) = 1.207; p = .336, this addition explained an additional 1.5% variance in time spent on social media, after controlling for age, gender and procrastination, Freedom of expression, Conformity, Information exchange, New connections, Ritual, Social maintenance, Escapism, Recreation, and Experimentation; a change that was non statistically significant (R^2 Change = .015; F (2, 22) = .289; p = .752). Finally, in the final model the PVs were all statistically non-significant (p = .336).

Table 2

Hierarchical Multiple Regression Model One for Time Spent on Social Media

	R	R^2	R^2 *Change*	*B*	*SE*	*β*	*t*	*p*
Step 1	.22	.05						
Age				.08	.07	.20	1.15	.257
Gender				-.35	1.01	-.06	-.34	.735
Step 2	.65	.42	.373					
Age				1.2	.08	.31	1.60	.134
Gender				.11	1.32	.02	.08	.935
Procrastination_F1				.19	.11	.35	1.69	.106
Freedom of expression_F2				.15	.14	.27	1.10	.284
Conformity_F3				-.01	.19	-.02	-.06	.951
Information Exchange_F4				-.18	.17	-.23	-1.05	.306
New Connections_F5				-.00	.21	-.00	-.00	.994
Ritual_F6				.09	.20	.10	.42	.675
Social Maintenance_F7				.24	.18	.27	1.31	.201
Escapism_F8				-.00	.33	-.00	-.00	.997
Recreation_F9				-.20	.35	-.13	-.58	.565
Experimentation_F10				.63	.52	.26	1.23	.232
Step 3	.66	.43	.015					

Age	.12	.08	.31	1.46	.158
Gender	.42	1.53	.07	.27	.787
Procrastination_F1	.21	.12	.39	1.70	.104
Freedom of expression_F2	.15	.14	.26	1.01	.323
Conformity_F3	-.05	.21	-.06	-.23	.822
Information Exchange_F4	-.25	.23	-.32	-1.10	.282
New Connections_F5	-.03	.24	-.04	-.12	.902
Ritual_F6	.11	.22	.14	.52	.607
Social Maintenance_F7	.26	.22	.30	1.22	.235
Escapism_F8	-.05	.37	-.03	-.12	.905
Recreation_F9	-.25	.38	-.16	-.66	.519
Experimentation_F10	.58	.54	.24	1.08	.290
Vulnerable Narcissism	.02	.08	.06	.20	.847
Grandiose Narcissism	.03	.03	.17	.75	.745

Note. Statistical significance: *$p < .05$; **$p < .01$; ***$p < .001$

Hierarchical Multiple Regression 2

A second Hierarchical Multiple Regression analysis was performed to assess the relationship between time spent on social media and overall narcissism scores after controlling for age and gender, and motivation factors. There was no relationship between the CV and the PVs ($p = .336$) in the model. However, there was a correlation between the following PVs: Information Exchange and Conformity ($p = .012$), Information Exchange and New Connections ($p = .036$) and last Narcissism Scores and Experimentation ($p = .005$)

The assumption of normality, linearity and homoscedasticity was assessed by conducting preliminary analyses. The CV was not normally distributed (see appendix A). Additionally, the correlations between the PVs (age, gender, procrastination, Freedom of expression, Conformity, Information exchange, New connections, Ritual, Social maintenance, Escapism, Recreation, and Experimentation, overall narcissism were examined and presented in table 3. All correlations were weak ranging from r = -.01 to .49. All Tolerance and VIF values were in acceptable range indicating no violation of multicollinearity, therefore the data was suitable for linear regression analysis.

In the first step of the model, two predictors were entered: age and gender. This model was statistically non-significant F (2, 34) = .84; p = .441 and explained 4.7% of the variance in time spent on social media (see Table 3 for full details). The entry of the ten motivation factors at Step 2 explains 42% of the variance F (12, 24) = 1.45; p = .213 and was statistically non-significant, finally the entry of overall narcissism in Step 3 explains 43.4% of the total variance by the model F (13,23) = 1.36; p = .252. The introduction of overall narcissism explains a and additional 1.5% variance in time spent in social media, after controlling for the ten motivations factors, a change that was statistically non-significant (R^2 Change = .015; F (1, 23) = .59; p = .450). In the final model none of the PVs predict time spent on social media with a statistically non-significant result with a p = .252.

Table 3

Hierarchical Multiple Regression Model two for Time Spent on Social Media

	R	R^2	R^2 *Change*	*B*	*SE*	*β*	*t*	*p*
Step 1	.22	.05						
Age				.08	.07	.20	1.15	.257

	Gender				-.35	1.02	-.06	-.34	.735
Step 2		.65	.42	.373					
	Age				.12	.08	.31	1.55	.134
	Gender				.11	1.32	.02	.08	.935
	Procrastination_F1				.19	.11	.35	1.68	.106
	Freedom of expression_F2				.15	.14	.27	1.10	.284
	Conformity_F3				-.01	.18	-.02	-.06	.951
	Information Exchange_F4				-.18	.17	-.23	-1.05	.306
	New Connections_F5				-.00	.21	-.00	-.01	.994
	Ritual_F6				.09	.20	.10	.43	.68
	Social Maintenance_F7				.24	.18	.27	1.31	.201
	Escapism_F8				-.00	.33	-.00	-.00	.997
	Recreation_F9				-.20	.35	-.13	-.59	.565
	Experimentation_F10				.63	.52	.26	1.23	.232
Step 3		.66	.43	.015					
	Age				.12	.08	.32	1.56	.134
	Gender				.48	1.41	.08	.34	.739
	Procrastination_F1				.20	.11	.38	1.80	.088
	Freedom of expression_F2				.15	.14	.26	1.04	.311
	Conformity_F3				-.06	.19	-.07	-.29	.773
	Information Exchange_F4				-.26	.20	-.33	-1.29	.21
	New Connections_F5				-.02	.21	-.03	-.09	.930
	Ritual_F6				.12	.20	.14	.58	.566

Social Maintenance_F7	.27	.19	.31	1.45	.159
Escapism_F8	-.06	.34	-.04	-.18	.861
Recreation_F9	-.26	.36	-.17	-.72	.480
Experimentation_F10	.58	.52	.24	1.12	.276
Narcissism	.02	.03	.20	.77	.450

Note. Statistical significance: *$p < .05$; **$p < .01$; ***$p < .001$

Discussion

It is the aim of the current study to investigate the relationship between age, gender, motivations to use social media, narcissism and scores on time spent on social media. Prior research suggest that social media is popular across all age groups , encouraging people to use social media to show themselves (McCain & Campbell, 2018) and also to enhance or foster new social connections (Gosling et al., 2011), driven by the human desire to connect with others, making social media so appealing and motivating (Bradley et al., 2019), thus, social media is used as a medium for quick reinforcement and admiration, explaining why the levels of narcissism among millennials is in the rise along with the increased use of social media (Bergman et al., 2011). Previous research suggests that people scoring high in narcissism will turn to social media to promote themselves, for making social connections and seeking attention, suggesting privacy can be of a concern for people scoring high in vulnerable narcissism (Koterba et al., 2021; Marshall et al., 2018; Ahn et al., 2015).

On the other hand, previous research find that psychopaths and narcissists benefit more through short interactions to take advantage from people but maybe it does not translate into the time spent on social media and if the interactions are passive or active (Garcia & Sikström, 2014).

McCain & Campbell (2018) suggest that the relationship between social media use, narcissism and age can be due to generational or developmental effects and some research suggests that narcissism declines in older participants (Foster et al., 2003).

Social media platforms are the perfect medium for vulnerable and grandiose narcissists to portray themselves exactly as they believe they are or want to be, for instance by sharing selfies to an audience that have the potential to provide instant gratification and positive feedback (Barry et al., 2019). Moreover, the research is consistent in finding that people scoring high in Narcissism will spend more time in social media because it provides them

with a favourable environment to gain instant admiration and self-esteem which reinforce the narcissistic self; narcissist post more pictures of themselves, have more friends and post more frequent statuses on social media and more frequently (McCain & Campbell, 2018). Thus, narcissism is positively correlated with the numbers of times a day Facebook is checked and the time spent in Facebook (Heser et al., 2015)

However, grandiose, and vulnerable narcissism appear to be risk factors for aggression such as online bullying and trolling, which can have a very negative effect on mental health (Kjærvik & Bushman, 2021). On a positive note, SNSs can have a positive impact on users' self-esteem and well-being when, for example adolescents, receive positive feedback, however negative feedback to their social media posts can decrease self-esteem, thus excessive use of SNSs can negatively affect an individual's work life and personal relationships, moreover, excessive use of SNSs can have a negative impact on an individual's mental health including loneliness and depression (Pelling & White, 2009).

According to previous research, it was hypothesised that in H1 there will be a relationship between age, gender, and time spent on social media, for H2 that there will be a relationship between motivations and time spent on social media after controlling for age and gender, and as for H3 we hypothesised that there will be a relationship between overall narcissistic scores, as well as vulnerable and grandiose narcissistic scores and time spent on social media To investigate this two Hierarchical Multiple Regression (HMR) analysis were performed; the first HMR aim to answer if there is a relationship between age gender, motivations and vulnerable and grandiose narcissism, there was no correlation found, this could be due to the small sample size. However, there was a correlation found between the motivation's factors: information exchange and conformity, information exchange and new connections, as well as recreation and escapism, these findings support previous research

suggesting that individuals use SNSs as a medium to increase or better their social connections (Gosling et al., 2011).

The second HMR performed served to investigate if there was a relationship between overall narcissistic scores after controlling for age, gender, and motivations, once again there was no correlation found between the variables, these findings suggest that the time spent on social media do not inform people's motivations to use SNSs or their narcissistic scores. Interestingly, there was a correlation found between narcissistic scores and motivations, specifically the experimentation factor, it refers in the questionnaire (SMMS) at two specific questions only: one is "because I can lie" and the second one because "I can pretend to be someone else", so the fact that this is positively correlated with higher narcissistic scores, support previous research suggesting that people scoring high in narcissism use SNSs to be more likable, making more friends as well as a medium to display vanity and manipulate their self-image just for gaining approval and attention (Ahn et al., 2015; Buffardi & Campbell, 2008; Bergman et al., 2011), and the fact that Facebook allows users to be in control of their profile, gives leverage to decide how they want to portray themselves and what benefits to draw from these interactions (Garcia & Sikström, 2014),

However, this contradicts findings suggest that social media users seem to prolong their personalities in social networking sites more than to escape or compensate how they are in real life (Gosling et al., 2011; Anderson et al., 2012).

Limitations and future research

The main limitations of this study is the sample size, it being too small. The reason for this might be the limitation to reach a wider spectrum of participants due to COVID-19 restrictions in place at the time of participants recruitment, therefore online recruitment was the only option. Therefore, the generalization of the results could be questionable and replication with a larger sample size would be recommended.

Another limitation is the male sample size, it being smaller than females sample size, it is recommended to use a more balanced sample size between males and females in future research, as well as not giving the option of prefer not to say gender, as this has caused for the sample size to become even smaller as these two participants needed to be removed from the study.

Conclusion

Although the research contributes to previous findings and comes to sound conclusions it does not match completely with previous research. Despite the fast-growing use of social media across all ages, and the influence of personality traits, and motivations on social media use, the findings of this study do not support completely previous research.

However, some aspects such as the motivations to use social media to create new connections, exchange information, to conform with other social media users, and to entertain oneself or escape reality have been found to be significant, moreover the relationship between higher narcissistic scores and experimentation seem to support previous research suggesting that narcissist will use social media to portray their ideal self-image or make profit out of others.

The implications of these findings can serve as a framework to guide future research towards personality traits and motivations to use social media, as well as how the time is spent on social media, as it can have a negative effect on people's mental health and different areas of their lives. Considering that a better understanding of online behaviour and its consequences, can help improve targeting policies and procedures to protect individuals, and especially younger age groups, to prevent online bullying and trolling, as much as mental health problems and Internet addiction.

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Appendices

Appendix A

Participant Information Leaflet

Are Your Personality Traits Related to the Way You Use Social Media?

You are being invited to take part in a research study. In order for you to decide if you want to participate please read this document first, where is explained why this research study is being done and what your involvement in it would means. If you have any questions please do not hesitate to contact me, details provided at the end of this sheet.

What is this study for?

I am a final year student in the BA in Psychology programme at National College of Ireland. As part of our degree we must to carry out an independent research project. It is the aim of this project to understand if there is a relationship between personality traits, gender, and the use of social media. This project will be supervised at all times by Dr Caoimhe Halligan, Lecturer at National College of Ireland.

What will taking part in this study involve?

If you decide to take part in this study, you will be asked to answer some questions about demographics about your age, gender, occupation and education level, followed by two questionnaires, one will be about personality traits and the second one will be about how do you use social media. The whole process might take up to 30 minutes.

Who can take part?

You can take part in this study if you are over the age of 18 and use at least one of the following forms of social media, Facebook, Instagram, LinkedIn and/or Twitter.

You cannot take part in this study if you have been diagnosed by a doctor with any mental disorder that interferes with your memory, thinking and/or your daily life.

Do I have to take part?

Participation in this research is completely voluntary and anonymous, and no remuneration of any kind will be offered if you agree to take part in this study. You have the right to withdraw from this study at any time without consequence whatsoever. Once you start answering the questions you will need to provide an answer in every question in order to continue to the next one, the reason for this is because the researcher needs all of the answers in the questionnaire for it to be valid for use in this study. Anyway, if you feel uncomfortable to answer any of the questions you have the right to withdraw with no consequences. Once the answers are submitted, it will be no possible to withdraw your data from the study, because the questionnaires are anonymous therefore, individual responses cannot be identified.

What data will be collected?

Demographics such as age, gender, and level of education and nationality will be collected to run statistical analysis, and this information will not make you identifiable. Also, the responses to the questionnaire will be collected in order to be able to run the study and obtain statistical results.

What are the possible risks and benefits of taking part?

There is no direct benefit to you for taking part in this study, however your participation will help the researcher to understand the relationship between personality traits and social media use. There is a small risk that some of the questions might be cause for distress for some participants. If you experience this, you are free to discontinue participation in this study. Contact details of relevant support services are provided at the end of the questionnaire.

Will taking part be confidential and what will happen to my data?

It is not possible to identify your answers in the questionnaires, because the questionnaires are completely anonymous. All data collected for this study will be treated in the strictest of confidence. Responses to the questionnaires will be stored securely in a password protected/encrypted file on the researcher's computer. Only the researcher and the supervisor

will have access to the data. Data will be retained for 5 years in accordance with NCI data protection policy.

What will happen with the results of the study?

Results of this study will be submitted to National College of Ireland and used to present my dissertation. There is a possibility that the results will be presented in conferences and/or submitted to an academic journal for publication.

Contact details

Researcher: Gabriela Grasso, X16150171@student.ncirl.ie, 0876941005

Organization where to seek help: https://internetaddictsanonymous.org/contact/

Please tick yes or no to the below statement

"Yes, I agree to take part in this study, and I read and understood the Participant Information Leaflet"

YES NO

Appendix B

Consent Form

In agreeing to participate in this research I understand the following:

This research is being conducted by _____, an undergraduate student at the School of Business, National College of Ireland.

The method proposed for this research project has been approved in principle by the Departmental Ethics Committee, which means that the Committee does not have concerns about the procedure itself as detailed by the student. It is, however, the above-named student's responsibility to adhere to ethical guidelines in their dealings with participants and the collection and handling of data.

If I have any concerns about participation, I understand that I may refuse to participate or withdraw at any stage.

I have been informed as to the general nature of the study and agree voluntarily to participate.

There are no known expected discomforts or risks associated with participation.

All data from the study will be treated confidentially. The data from all participants will be compiled, analysed, and submitted in a report to the Psychology Department in the School of Business. No participant's data will be identified by name at any stage of the data analysis or in the final report.

At the conclusion of my participation, any questions or concerns I have will be fully addressed.

I may withdraw from this study at any time and may withdraw my data at the conclusion of my participation if I still have concerns.

Signed: _____

Participant _____

Researcher _____ Date _____

Appendix C

Participant Debriefing Sheet

Thank you for your participation in this research study. The goal of this study was to find out the possible relationship between narcissism and the time spent in social media such as Facebook, Tweeter, Instagram and LinkedIn, among other possible effects such as age, gender, levels of education and nationality.

You were asked to complete a questionnaire about personality traits with the purpose of measuring participants levels of narcissism, as your participation is completely anonymous there is no way for us to know your personal scores, instead we used the total scores for all participants to run statistical analysis to understand if there is a possible correlation between levels of narcissism and time spent on social media.

The main topic of this research study is to find out how much time individuals scoring high in narcissism spend in social media, requiring minor deception on our part to avoid bias when completing the questionnaire about narcissism.

With the findings in this research study, we hope to collaborate in the research of personality and social media use and understand the underlaying causes of human behaviour on social network sites.

Your participation is greatly appreciated, and we hope you have an enjoyable experience. If you have any questions, please do not hesitate to contact the researcher Gabriela Grasso email address X16150171@student.ncirl.ie and Supervisor Dr Matthew Hudson email address matthew.hudson@ncirl.ie

Lastly, I urge you not to discuss this study with anyone that is currently taking part or might take part in the future. As you can appreciate, I will not be able to examine individuals' personality traits if they know beforehand the purpose of the questionnaire.

Thank you!

If for any reason you have become distressed or are affected by the topics covered in this research study, please do not hesitate to speak to someone or to contact the organizations listed below.

Support Services

Mental health Ireland

Mental health and wellbeing information

Website: https://www.mentalhealthireland.ie

Phone: (01) 284 1166

Jigsaw

Support service for mental health

Website: https://jigsaw.ie/

Phone: +353 1 472 7010

Samaritans Ireland

Crisis support

Website: https://www.samaritans.org/ireland/samaritans-ireland/

Phone: 116 123

Anxiety Aware

Anxiety support

Website: https://www.aware.ie/information/anxiety/

Phone: 1800 80 48 48

Appendix D

Five Factor Narcissism Inventory (FFNI_SF)

This questionnaire contains 60 items. Each item is scored on a **1 to 5 scale**, where 1 = the statement is false or that you **strongly disagree;** 2 = the statement is mostly false or you **disagree**; 3 = the statement is about equally true or false, you cannot decide, or you are **neutral** on the statement; 4 = the statement is mostly true, or you **agree**; and 5 = the statement is definitely true or you **strongly agree**. Please read each item carefully and provide your answer that best corresponds to your agreement or disagreement. There are no right or wrong answers. Describe yourself honestly and state your opinions as accurately as possible.

Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
1	2	3	4	5

1. I am extremely ambitious.
2. Others say I brag too much, but everything I say is true.
3. Leadership comes easy for me.
4. When someone does something nice for me, I wonder what they want from me.
5. I deserve to receive special treatment.
6. I get lots of enjoyment from entertaining others.
7. It is fine to take advantage of persons to get ahead.
8. I often fantasize about someday being famous.
9. When people judge me, I just do not care.
10. I do not worry about others' needs.
11. I am fairly good at manipulating people.

12. I often feel as if I need compliments from others to be sure of myself.

13. I hate being criticized so much that I cannot control my temper when it happens.

14. When I realize I have failed at something, I feel humiliated.

15. I will try almost anything to get my “thrills”.

16. I have a tremendous drive to succeed.

17. I only associate with people of my calibre.

18. I am comfortable taking on positions of authority.

19. I trust that other people will be honest with me.

20. I do not think the rules apply to me as much as they apply to others.

21. I like being noticed by others.

22. I will use persons as tools to advance myself.

23. I often fantasize about having lots of success and power.

24. I do not really care what others think of me.

25. I do not generally pay much attention to the woes of others.

26. I can manoeuvre people into doing things.

27. I am stable in my sense of self.

28. I have at times gone into a rage when not treated rightly.

29. I feel awful when I get put down in front of others.

30. I am a bit of a daredevil.

31. I aspire for greatness.

32. I do not waste my time hanging out with people who are beneath me.

33. Persons generally follow my lead and authority.

34. I am slow to trust people.

35. It may seem unfair, but I deserve extra (i.e., attention, privileges, rewards).

36. I like being the most popular person at a party.

37. Sometimes to succeed you need to use other people.

38. I rarely fantasize about becoming famously successful.

39. I am pretty indifferent to the criticism of others.

40. I am not big on feelings of sympathy.

41. I can talk my way into and out of anything.

42. I feel very insecure about whether I will achieve much in life.

43. It really makes me angry when I do not get what I deserve.

44. I feel ashamed when people judge me.

45. I would risk injury to do something exciting.

46. I am driven to succeed.

47. I am a superior person.

48. I tend to take charge of most situations.

49. I often think that others are not telling me the whole truth.

50. I believe I am entitled to special accommodations.

51. I love to entertain people.

52. I am willing to exploit others to further my own goals.

53. Someday I believe that most people will know my name.

54. Others' opinions of me are of little concern to me.

55. I do not get upset by the suffering of others.

56. It is easy to get people to do what I want.

57. I wish I did not care so much about what others think of me.

58. I feel enraged when people disrespect me.

59. I feel foolish when I make a mistake in front of others.

60. I like doing things that are risky or dangerous.

Appendix E

Social Networking Time Use Scale (SONTUS) (Olufadi, Y., 2015)

Kindly use the scale below to indicate how often you always use the social networking sites like Facebook, Instagram, WhatsApp, Twitter, Myspace, Pinterest etc., during the past week in the following situations and places:

1 = Not applicable to me during the past week.

2 = I never used it during the past week.

3 = I used it once during the past week but spend less than 10min.

4 = I used it once during the past week but spend between 10 and 30 min.

5 = I used it once during the past week but spent more than 30min.

6 = I used it between 2 and 3 times during the past week but spend less than 10min each time.

7 = I used it between 2 and 3 times during the past week but spend between 10 and 30 min each time.

8 = I used it between 2 and 3 times during the past week but spent more than 30min each time.

9 = I used it more than 3 times during the past week but spend less than 10 min each time.

10= I used it more than 3 times during the past week but spend between 10 and 30 min each time.

11 = I used it more than 3 times during the past week but spent more than 30 min each time.

Table A2. Social networking time use scale (SONTUS).

Item	1 2 3 4 5 6 7 8 9 10 11

1.When you are at a seminar/workshop or training program

2. When you are at home sitting idly

3. When you need to reduce your mental stress

4. When you go to the stadium to watch football, basketball etc.

5. When you are doing school or job-related assignment at home

6. When you are waiting for someone (e.g., friends) either in their house or at a pre-arranged place

7. When you are listening to music, radio, religious lectures etc.

8. When you have gone through a lot of stress

9. When you are in a meeting

10. When you are in the class receiving lecture

11. When you need to maintain contact with existing friends

12. When you are in bed about to sleep

13. When you are reading in the library for academic purpose e.g., recommended text for class

14. When you are at a place to repair your car, house appliances, etc.

15. When you need to reduce your emotional stress

16. When you want to reduce the pressure of your daily routines

17. When you are at a social gathering like wedding ceremony, birthday party, reception etc.

18. When you need to communicate with your families and friends

19. When you are sitting in a religious place (e.g., church, mosque) and activities like sermon or prayer is yet to start

20. When you need to find out more about people you met offline

21. When you are in the company of friends/family/colleagues having fun

Item 1 2 3 4 5 6 7 8 9 10 11

22. When you are watching TV, news, football, films, sports, etc.

23. When you go to the cinema house to watch movie(s)

24. When you are a passenger in a car/bus/train for at least 2 min

25. When you need to find people you haven't seen for a while

26. When you are waiting for your boss in her office for at least 2 min when she is not attending to you

27. When you are trying to forget your financial challenges

28. When you are online doing school or job-related works e.g., project, homework

29. Watching academic-related video lectures or those related to your job

Appendix Scoring. of the SONTUS

In scoring the SONTUS, five component scores are derived. The components scores are summed to produce a global score that ranges from 5 to 23.

Coding Instruction: each and every items in SONTUS is coded as follows:

1 = if a respondent select the Likert scale 1–3.

2 = if a respondent select the Likert scale 4– 6.

3 = if a respondent select the Likert scale 7–9.

4 = if a respondent select the Likert scale 10 or 11.

Component 1: relaxation and free periods.

Sum of items 2, 6, 7, 12, 14, 21, 22, 24 and 26 scores	Component 1 score
9–12	1
13–16	2
17–20	3
21–24	4
25–28	5
29–32	6
>32	7

Component 2: academic-related periods

Sum of items 1, 5, 10, 13, 28, and 29 scores	Component 2 score
6–9	1
10–13	2
14–17	3
18–21	4

>32	5

Component 3: public-places-related use.

Sum of items 4, 9, 17, 19, and 23 scores	Component 3 score
5–8	1
9–12	2
13–16	3
17–20	4

Component 4: stress-related Periods.

Sum of items 3, 8, 15, 16, and 27 scores	Component 4 score
5–8	1
9–12	2
13–16	3
17–20	4

Component 5: motives for use.

Sum of items 11, 18, 20, and 25 scores	Component 5 score
4–7	1
8–11	2
>11	3

Global SONTUS score: sum of the five component scores: _____

Interpretation:

An individual with a global score that ranges from 5 to 9 is regarded as low user of SNSs.

An individual with a global score that ranges from 10 to 14 is regarded as average user of SNSs.

An individual with a global score that ranges from 15 to 19 is regarded as high user of SNSs.

An individual with a global score that is more than 19 is regarded as extremely high user of SNSs.

Note: A program is under preparation for easy scoring of the items in the SONTUS.

Appendix F

Social Media Motivations Scale (SMMS)

Read each of the following reasons for why you may choose to use your favourite social networking site and select your level of agreement by circling the appropriate number.

I use my favourite social networking site…	Strongly Disagree					Strongly Agree
1. Because it's a good distraction from other things	1	2	3	4	5	6
2. To be like others	1	2	3	4	5	6
3. Because it gives me something to do	1	2	3	4	5	6
4. Because it allows me to express myself freely	1	2	3	4	5	6
5. Because it helps me to relax	1	2	3	4	5	6
6. To maintain social contact	1	2	3	4	5	6
7. Because I can lie and no one will know	1	2	3	4	5	6
8. If I have nothing better to do at the time	1	2	3	4	5	6
9. Because it's become a habit	1	2	3	4	5	6

10. To maintain a daily routine	1	2	3	4	5	6
11. To communicate with people I do not know	1	2	3	4	5	6
12. Because it is my favourite type of communication	1	2	3	4	5	6
13. Because it allows me to think about what I want to say	1	2	3	4	5	6
14. To communicate with my online friends (i.e. those who you know online but have not met in real life)	1	2	3	4	5	6
15. To keep myself occupied	1	2	3	4	5	6
16. To cure my boredom	1	2	3	4	5	6
17. Because I have to	1	2	3	4	5	6
18. Because it passes the time away	1	2	3	4	5	6
19. Because everyone else does	1	2	3	4	5	6
20. To entertain myself	1	2	3	4	5	6

21. Because I can pretend to be someone else	1	2	3	4	5	6
22. To keep in touch with people	1	2	3	4	5	6
23. To communicate with those I know offline (i.e. family and friends you know in real life)	1	2	3	4	5	6
24. To find a potential partner/to date	1	2	3	4	5	6
25. To communicate with distant relatives and friends	1	2	3	4	5	6
26. To forget about responsibilities in my life	1	2	3	4	5	6
27. Because it has become part of my Internet routine	1	2	3	4	5	6
28. Because it allows me to say what I want	1	2	3	4	5	6
29. Because other people expect me to use it	1	2	3	4	5	6
30. To ask for/gain advice	1	2	3	4	5	6
31. To get information from others	1	2	3	4	5	6

32. Because it's convenient for my needs	1	2	3	4	5	6
33. To escape reality	1	2	3	4	5	6
34. Because it seems to be the thing to do	1	2	3	4	5	6
35. Because it allows me to voice my opinions	1	2	3	4	5	6
36. Because it lets me communicate with less pressure	1	2	3	4	5	6
37. Because it's exciting	1	2	3	4	5	6
38. Because it's fun to use	1	2	3	4	5	6
39. To give advice	1	2	3	4	5	6
40. So that I can make new friends	1	2	3	4	5	6

Scoring instructions

Take the average scores from the following item numbers:

Factor 1: Procrastination

1, 3, 8, 15, 16, 18, 20

Factor 2: Freedom of Expression

4, 5, 13, 28, 35, 36

Factor 3: Conformity

2, 17, 19, 29, 34

Factor 4: Information Exchange

30, 31, 32, 39

Factor 5: New Connections

11, 14, 24, 40

Factor 6: Ritual

9, 10, 12, 27

Factor 7: Social Maintenance

6, 22, 23, 25

Factor 8: Escapism

26, 33

Factor 9: Recreation

37, 38

Factor 10: Experimentation

7, 21

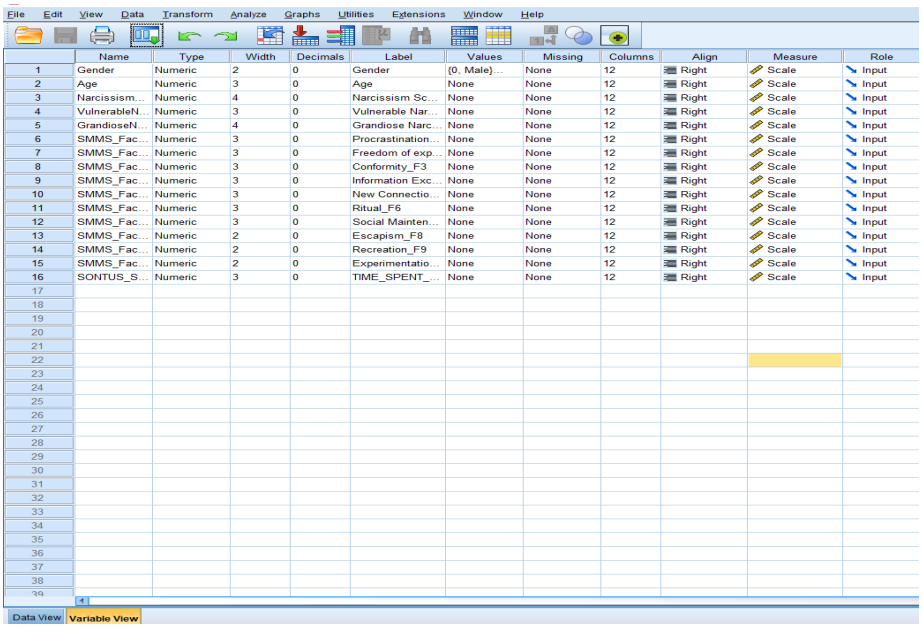
Citation

Orchard, L., Fullwood, C., Galbraith, N., & Morris. (2014). Individual differences as predictors of social networking. *Journal of Computer Mediated Communication,* 19(3), 388-402.

Internal consistency information (Cronbach's alpha)

Procrastination (.893), Freedom of expression (.875), Conformity (.805), Information exchange (.817), New connections (.791), Ritual (.802), Social maintenance (.757), Escapism (.820), Recreation (.831), and Experimentation (.594).

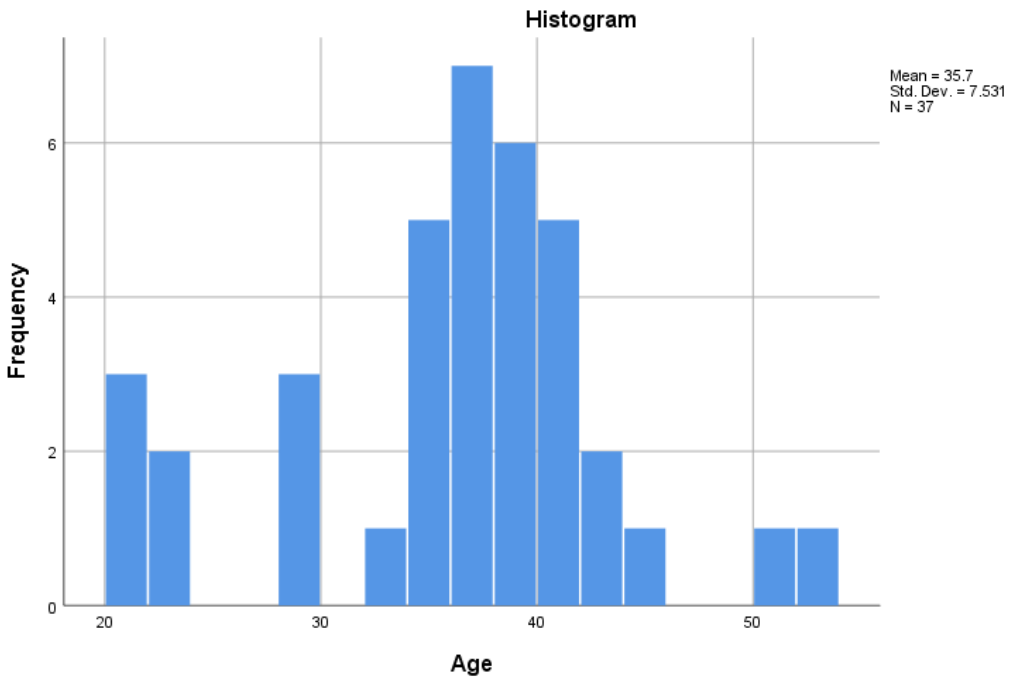
Evidence of data and SPSS output (data file available upon request)

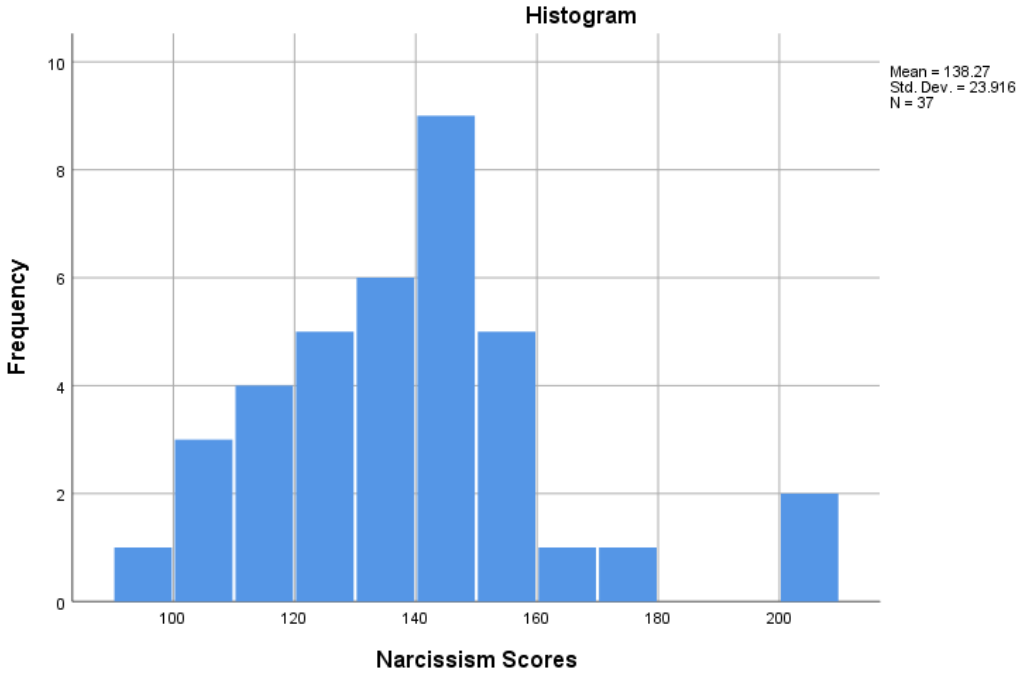


	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	Gender	Numeric	2	0	Gender	{0, Male}...	None	12	Right	Scale	Input
2	Age	Numeric	3	0	Age	None	None	12	Right	Scale	Input
3	Narcissism...	Numeric	4	0	Narcissism Sc...	None	None	12	Right	Scale	Input
4	VulnerableN...	Numeric	3	0	Vulnerable Nar...	None	None	12	Right	Scale	Input
5	GrandioseN...	Numeric	4	0	Grandiose Narc...	None	None	12	Right	Scale	Input
6	SMMS_Fac...	Numeric	3	0	Procrastination...	None	None	12	Right	Scale	Input
7	SMMS_Fac...	Numeric	3	0	Freedom of exp...	None	None	12	Right	Scale	Input
8	SMMS_Fac...	Numeric	3	0	Conformity_F3	None	None	12	Right	Scale	Input
9	SMMS_Fac...	Numeric	3	0	Information Exc...	None	None	12	Right	Scale	Input
10	SMMS_Fac...	Numeric	3	0	New Connectio...	None	None	12	Right	Scale	Input
11	SMMS_Fac...	Numeric	3	0	Ritual_F6	None	None	12	Right	Scale	Input
12	SMMS_Fac...	Numeric	3	0	Social Mainten...	None	None	12	Right	Scale	Input
13	SMMS_Fac...	Numeric	2	0	Escapism_F8	None	None	12	Right	Scale	Input
14	SMMS_Fac...	Numeric	2	0	Recreation_F9	None	None	12	Right	Scale	Input
15	SMMS_Fac...	Numeric	2	0	Experimentatio...	None	None	12	Right	Scale	Input
16	SONTUS_S...	Numeric	3	0	TIME_SPENT_...	None	None	12	Right	Scale	Input

Appendix A

- **Histograms**




Histogram
Mean = 138.27
Std. Dev. = 23.916
N = 37
Frequency
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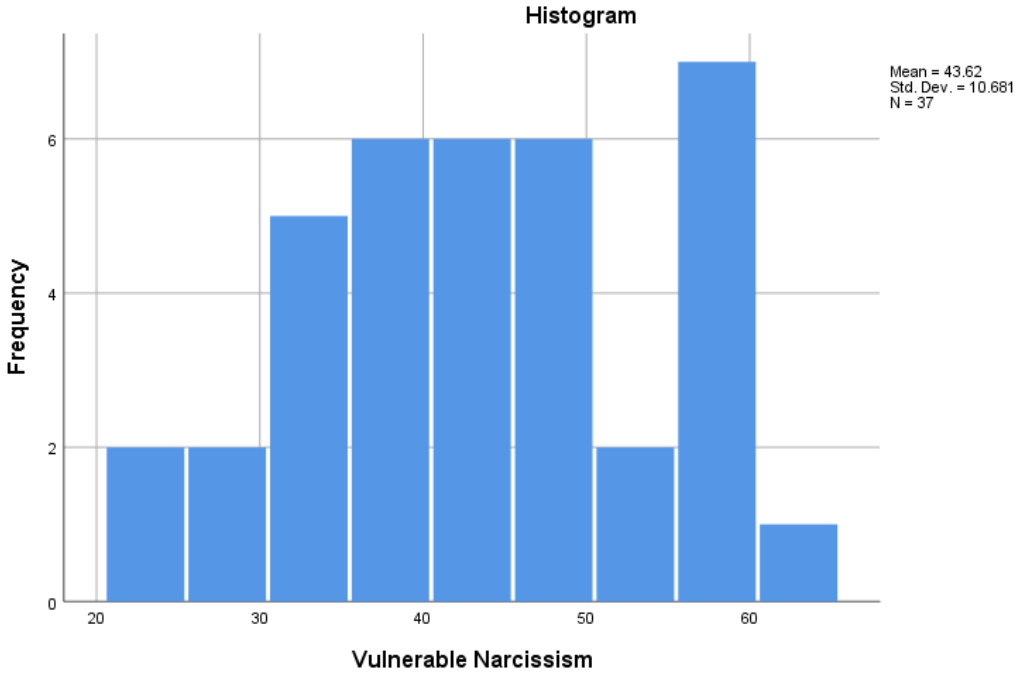
2
4
6
8
10
100
120
140
160
180
200
Narcissism Scores


Histogram
Mean = 43.62
Std. Dev. = 10.681
N = 37
Frequency
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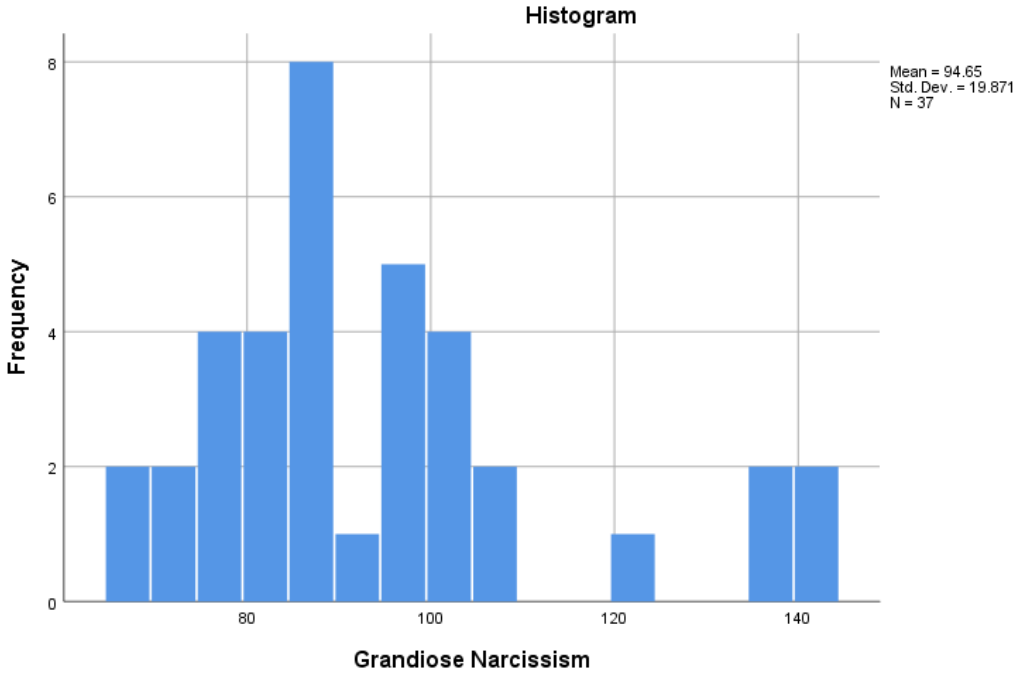
2
4
6
20
30
40
50
60
Vulnerable Narcissism


Histogram
Mean = 94.65
Std. Dev. = 19.871
N = 37
Frequency
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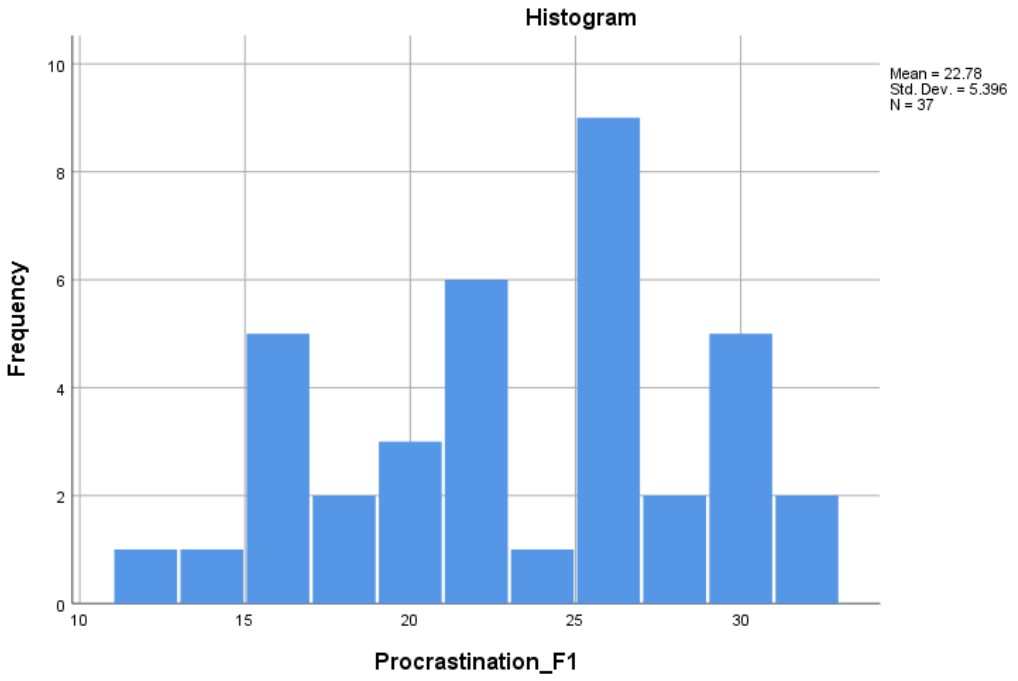
2
4
6
8
80
100
120
140
Grandiose Narcissism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N = 37
Frequency
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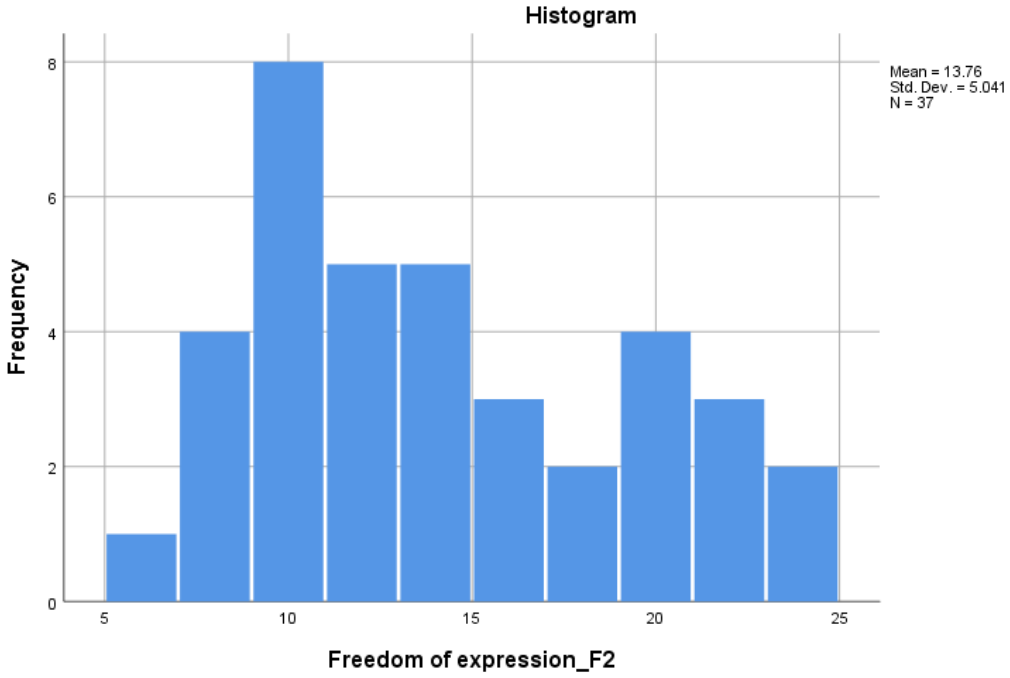
2
4
6
8
10
10
15
20
25
30
Procrastination_F1


Histogram
Mean = 13.76
Std. Dev. = 5.041
N = 37
Frequency
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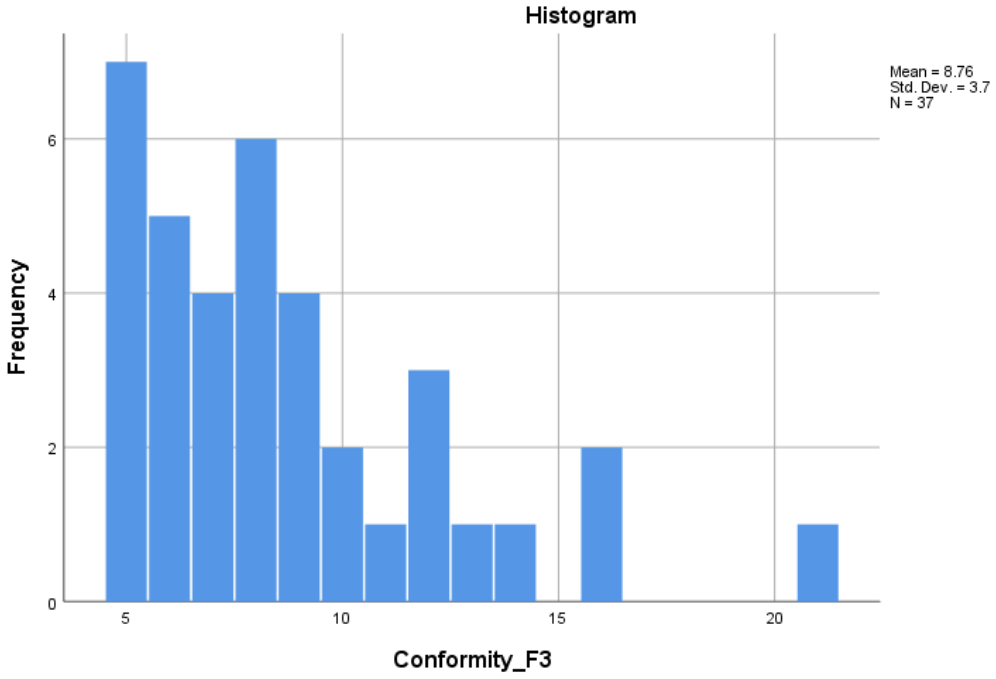
2
4
6
8
5
10
15
20
25
Freedom of expression_F2


Histogram
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Std. Dev. = 3.7
N = 37
Frequency
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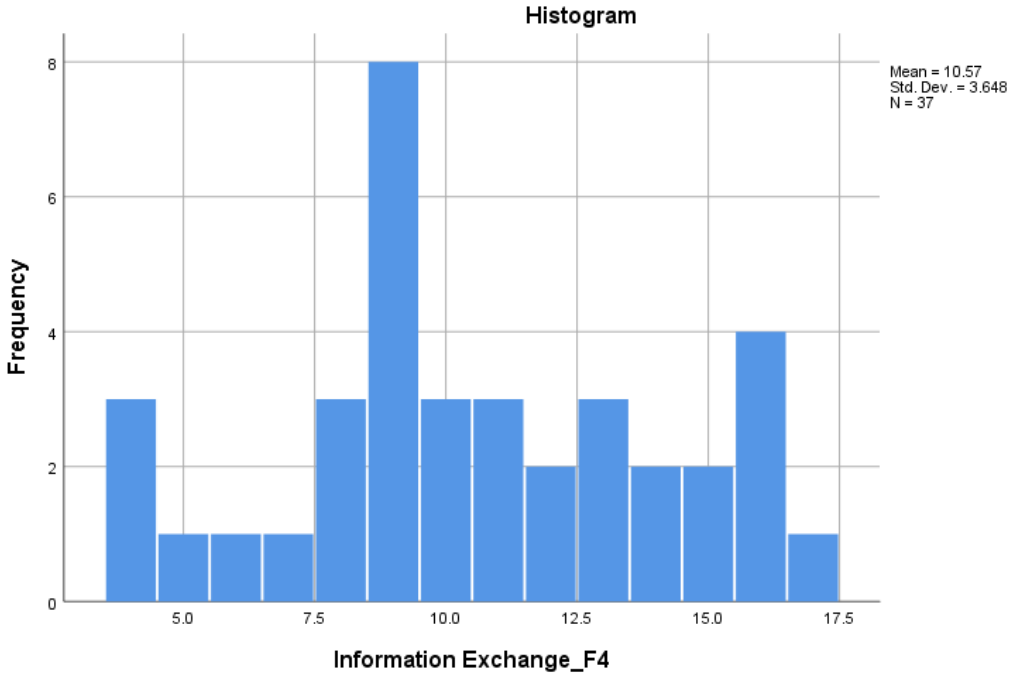
2
4
6
5
10
15
20
Conformity_F3


Histogram
Mean = 10.57
Std. Dev. = 3.648
N = 37
Frequency
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4
6
8
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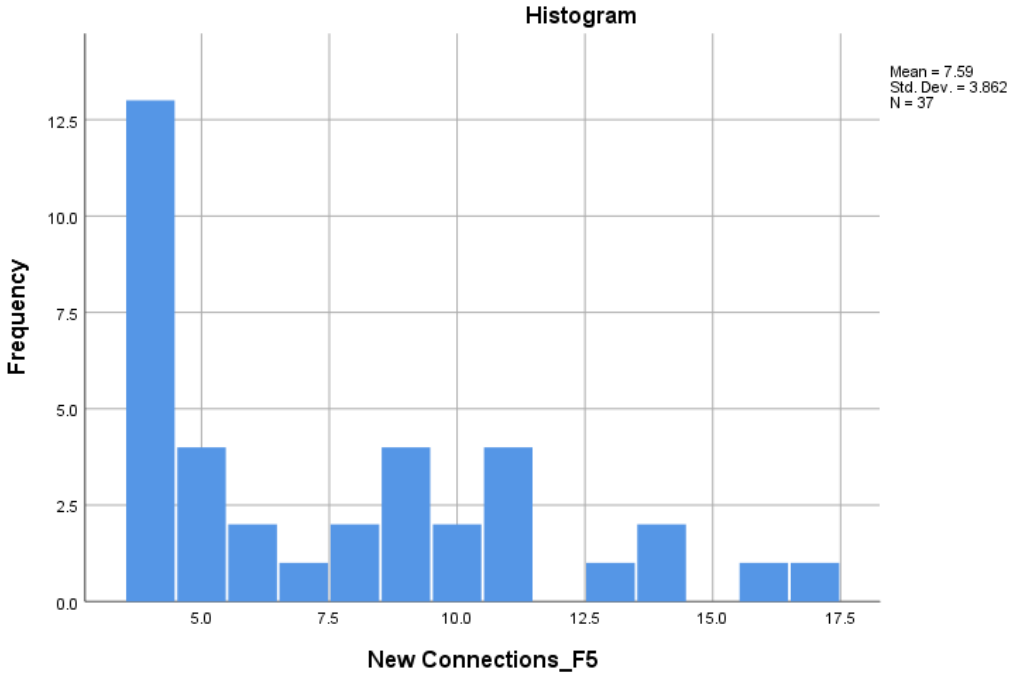
7.5
10.0
12.5
15.0
17.5
Information Exchange_F4


Histogram
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Std. Dev. = 3.862
N = 37
Frequency
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2.5
5.0
7.5
10.0
12.5
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12.5
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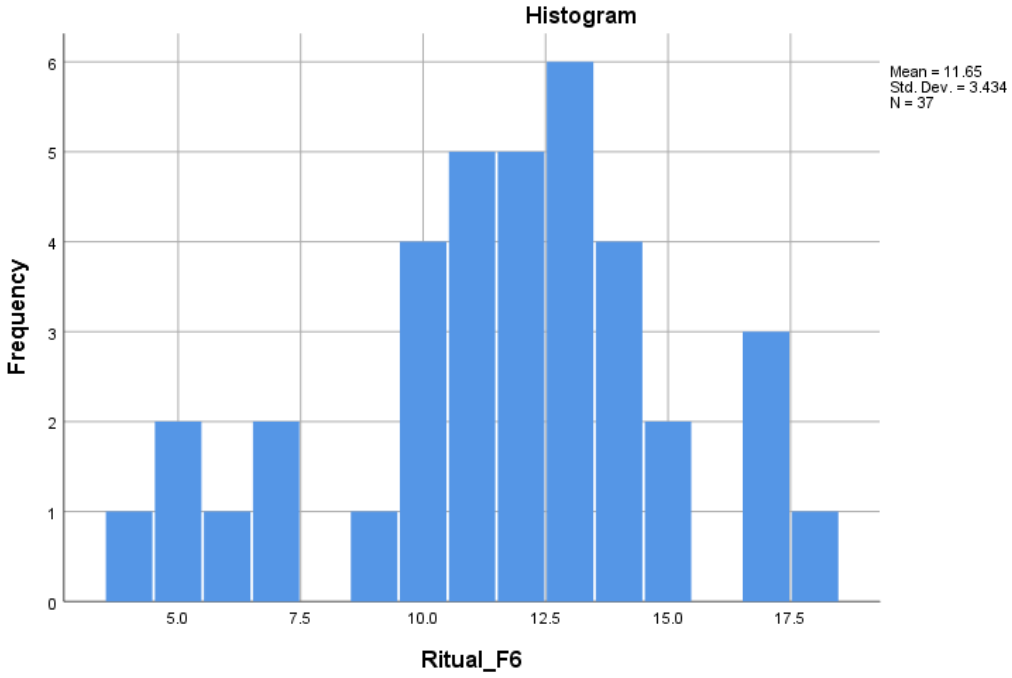
17.5
New Connections_F5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Std. Dev. = 3.434
N = 37
Frequency
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3
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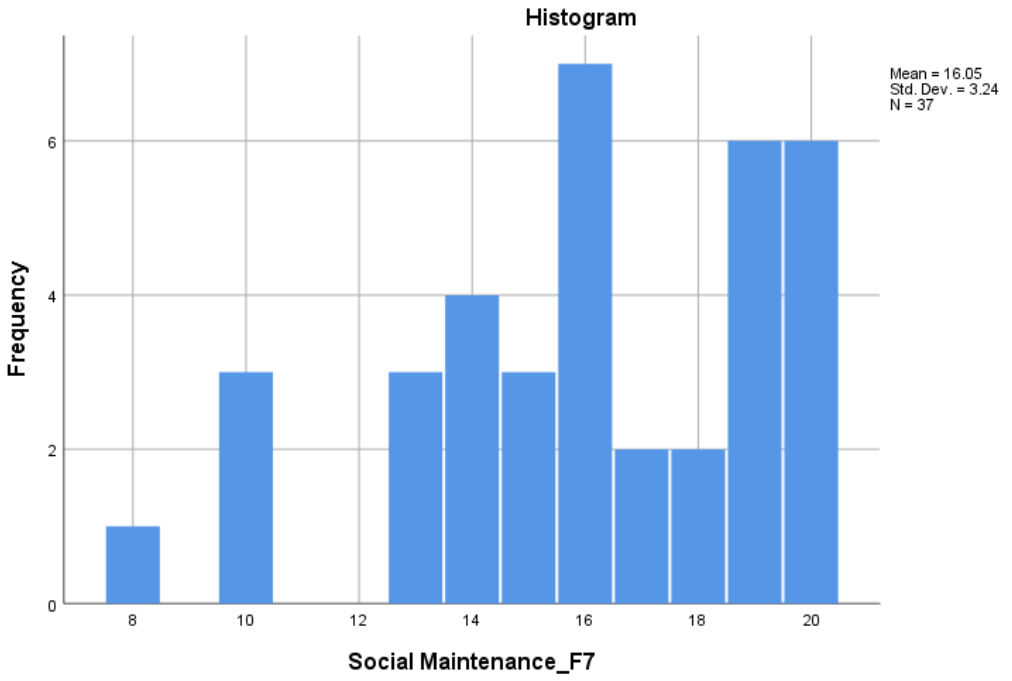
12.5
15.0
17.5
Ritual_F6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N = 37
Frequency
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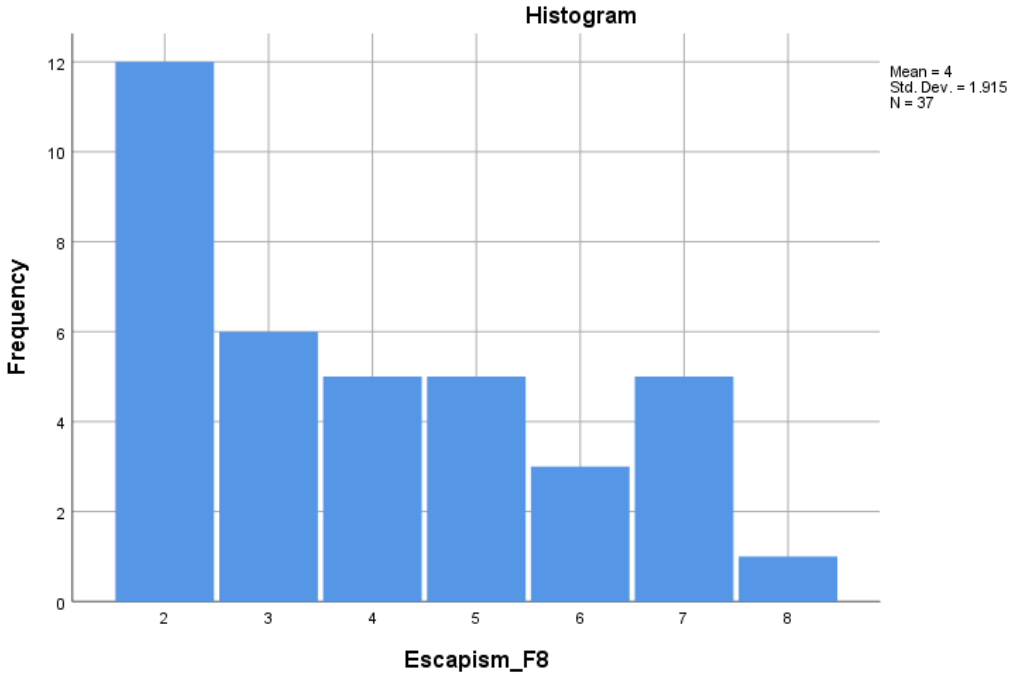
6
8
10
12
14
16
18
20
Social Maintenance_F7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Std. Dev. = 1.915
N = 37
Frequency
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8
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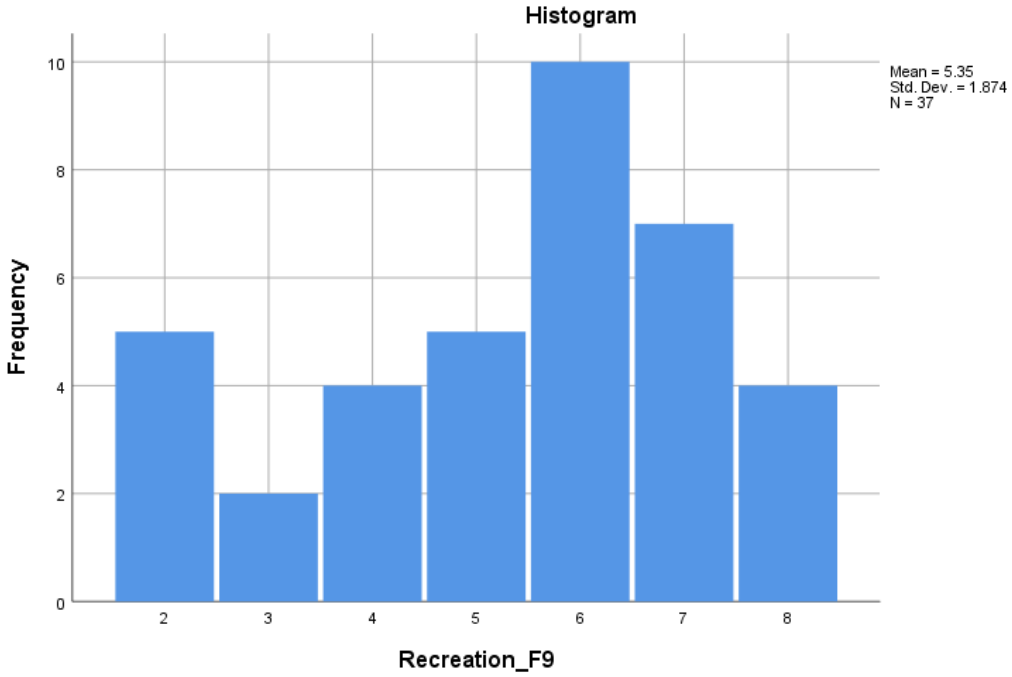
12
2
3
4
5
6
7
8
Escapism_F8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Std. Dev. = 1.874
N = 37
Frequency
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6
8
10
2
3
4
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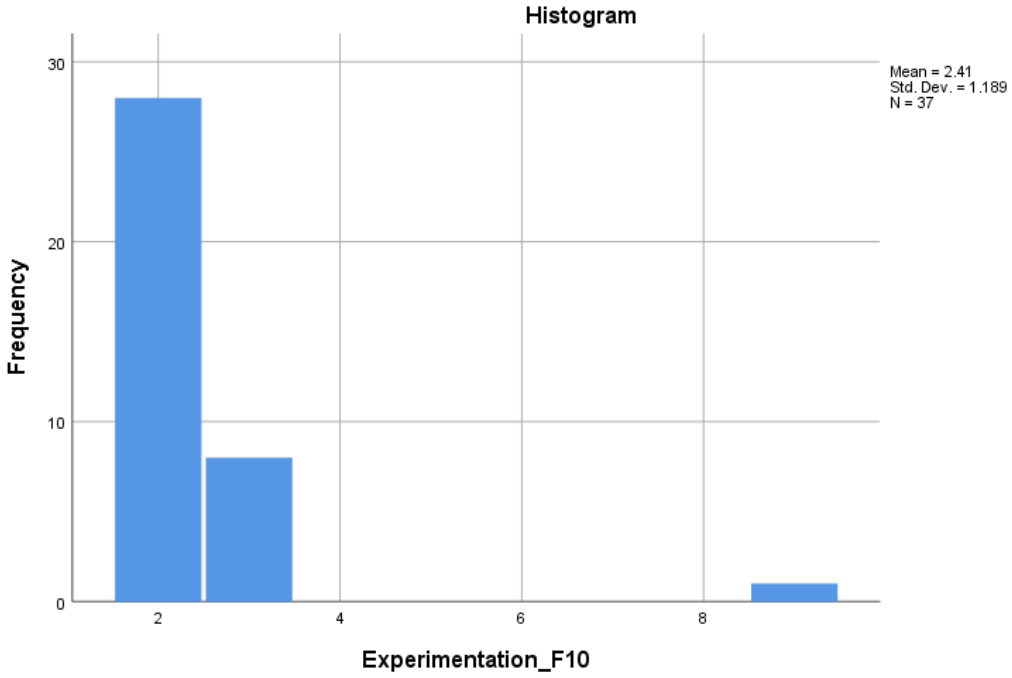
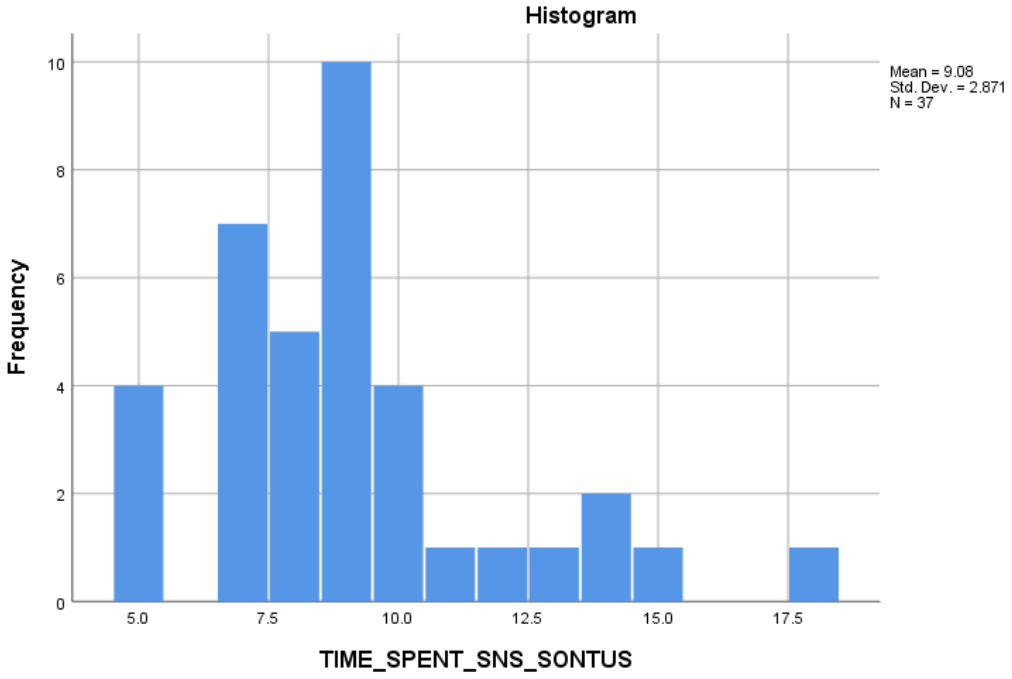
7
8
Recreation_F9





- **Tests of Normality**

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
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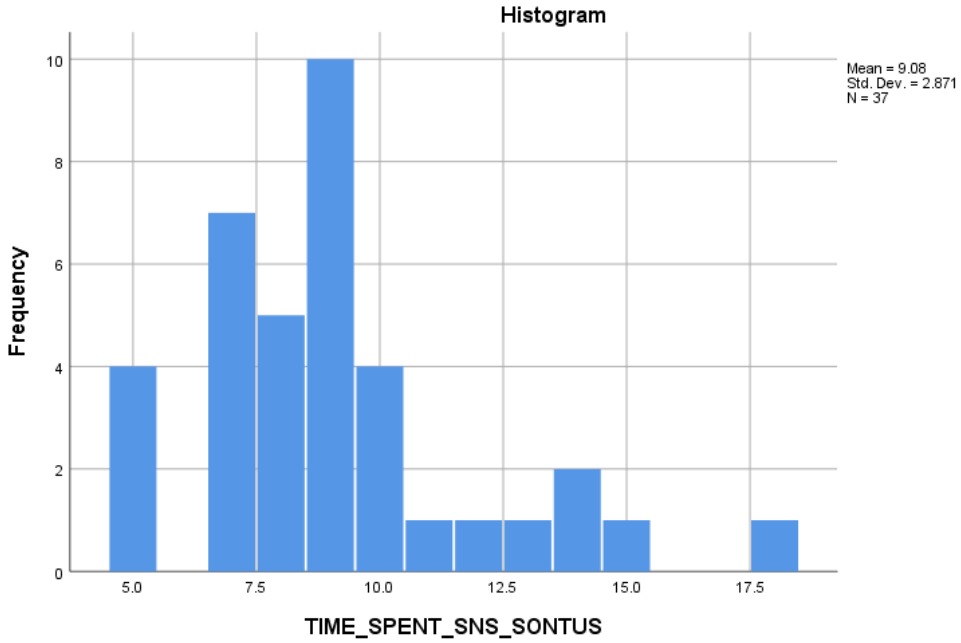
TIME_SPENT_SNS_SONTUS	.214	37	.000	.898	37	.003

a. Lilliefors Significance Correction