

Impact of Personality Traits on Facebook Usage Intensity: Mediating Role of Shyness

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Abstract. Facebook is the most popular source of networking. The current study aimed to explore the impact of personality traits on Facebook usage intensity. The main objective of this study was to study the impact of big five personality traits on Facebook usage intensity. Moreover, the study investigated the mediating effect of shyness between big five personality traits and Facebook usage intensity (FUI). A quantitative approach was used. An already developed questionnaire was used to measure the dimensions. The Snowball sampling technique was applied and 250 users were selected to record the response. Process Macro was used to run the mediation analysis. The findings of this study are summarized that personality traits have an impact on Facebook usage intensity. Moreover, the conclusion proved that shyness significantly mediates the relationship between Facebook usage intensity and personality traits (e.g. extraversion, neuroticism, agreeableness, and openness to experience). The study is beneficial for individuals and managers to deal with the employees regarding their individual personality traits. The study will add value to the existing body of knowledge.

Keywords: personality traits, conscientiousness, neuroticism, extraversion, agreeableness, openness to experience, Facebook usage intensity, shyness

1. Introduction

Social media networks such as Facebook, twitter, instagram, whatsapp and snapchat are impressively famous among our youngsters (Anderson & Jiang, 2018; Vannucci & McCauley Ohannessian, 2019; Rizaty, 2021). Alexa Internet Inc. (2011) described that Facebook is the most popular and second most visited social networking mode available now-a-days. Gonzalez (2011) claimed that Facebook is a source of attraction for almost 606 million persons. As per Symeonidis et al. (2018), Facebook becomes a popular choice among people with an ever increasing user base and it leaves an impact on the social life of its users. Facebook is the most popular source of networking in Pakistan also. The study of Alshalawi (2022) examined those females prefer to spend their most time on social media networks than males. Most people use social media platforms e.g Instagram and Facebook to satisfy their need for recognition, social needs, and entertainment. It has an impact on their behaviors e.g. create addiction, unstable mood, individualism, hedonism, insecurity of other people's achievements, envy, FOMO etc. The study of Kircaburun and Griffiths (2018) proved that some big five personality traits such as agreeableness, conscientiousness and self liking are negatively related with Instagram addiction.

Facebook usage is the mean of gaining social capital among people (Burke, Marlow, & Lento, 2010; Ellison, Steinfield, & Lampe, 2007; Steinfield, Ellison, & Lampe, 2008). Firms preferably use social media to source knowledge for innovation in their organizations. Literature proved that Facebook may leave impact on user's way of communication and association with each other (Richardson & Hessey, 2009). In spite of abandon usage and addiction of Facebook usage among individuals, limited researches are available on associated theories. The reason may be its new social phenomenon and less exploratory research available on the variable. However, from past few years, many researchers have realized the need of research in this area and are investigating the personality type of people who are using Facebook (Hargittai, 2007; Raacke & Bonds-Raacke, 2008; Sheldon, 2009; Tufekci, 2008).

As per (Buffardi & Campbell, 2008; Mehdizadeh, 2010; Orr et al., 2009; Ross et al., 2009; Sheldon, 2008), researchers are reviewing the relationship between Facebook and personality traits. But this category of research study is critical as "human personality is a highly pertinent factor in determining behavior on the Internet" (Amichai-Hamburger, 2002). As per (Amichai-Hamburger, Wainapel, & Fox, 2002; Engelberg & Sjöberg, 2004; Thayer & Ray, 2006; Tosun & Lajunen, 2010), with the growth of World Wide Web as dominating mode of mass media, internet has been a visible area of scientific enquiry. Previous researchers have mostly studied broad models of personality and have ignored the relationship between specific personality type and internet usage. Online interaction or communication is necessary for connecting with distant friends or relatives via social networks. Moreover, over-dependence on different online communication networks could relatively impact on social, emotional and moral competence of youngsters.

As per (Ehrenberg, Juckes, White, & Walsh, 2008; Landers & Lounsbury, 2006), Big Five Factor model (Goldberg, 1990), has been mostly used by the researchers. According to the big five theory, an individual's personality may be ranked on five factors which are extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience (McCrae & John, 1992).

Shyness refers to being reserved when someone is around many people. Researchers claimed that shyness affects the usability of Facebook (Baker & Oswald, 2010; Sheldon, 2012). Shy people spare more time to use Facebook instead of non-shy individuals (Orr et al., 2009). As per the study of Sheldon (2008), shyness affects people and makes them more comfortable in spending time on Facebook. It helps the individuals to build long lasting online relationships instead of in-person interaction (Ebeling-Witte, Frank, & Lester, 2007). Shyness can be a good mediator in examining the relationship between Facebook usage and personality traits.

Enormous research has already been conducted on personality traits, its characteristics, and features. Researches are available on Facebook and its usage. But limited research found on the personality types with the perspective of Facebook addiction. The current study tested the theory of planned behavior

(TPB). TPB theory is a valuable framework to explain the behavior of individuals (Ajzen, 1985, 1991). This theory explains that individuals' intentions are immediate elements of their behaviors. This study fills the gap by conducting structured research on focusing on these variables. Little evidence was found about the relationship between the aforementioned constructs about the shyness and this topic constituted the rationale for the current study. The current study would be the first step to measure the quantitative association of personality traits, Facebook usage, and shyness as a mediator. The current study will add strong contribution to the existing limited literature on this relationship.

1.1 Research Objectives and Significance

The objective of the study is twofold. One is to explore the dimensional impact of personality traits on Facebook addiction and the other is to measure the mediating role of shyness among personality types and Facebook usage intensity. The current study takes the personality traits and shyness as predictors to the intensity of Facebook usage. The current study is aimed to include personality type and shyness to predict the adoption and use of Facebook intensity to test TPB. The main purpose of this study is to quantitatively summarizing the relationship between personality traits and FUI with the mediating role of shyness by using theoretical integration of this stream of literature. It will answer the question of whether there is any relationship between Facebook usage intensity keeping in view the dimensions of personality traits, and shyness. The study is beneficial for individuals and managers to deal the employees with respect to their respective personality trait. The study will add value to the existing body of knowledge.

2. Literature Review

Previous researchers have studied personality traits link with people's communication, habits, and pathologies; therefore these traits are directly linked to the patterns of social media usage (Moody, 2001; Caplan, 2006; Kim & Davis, 2009). The model of big five personality traits (Five-Factor Model) was initially introduced by Tupes and Christal in 1961. The five-factor model theory segregated the personality traits in five main dimensions such as conscientiousness, extraversion, neuroticism, agreeableness, and openness to experience (Caprara & Barbaranelli, 1994). Facebook intensity referred to the time spent daily on Facebook and the number of friends on social media. Pettijohn, LaPiene and Horting (2012) proved that Facebook intensity and facebook usage have a direct relationship with each other. Previous literature on Facebook usage showed that some personality traits have contributed to the Facebook usage intensity either positively or negatively such as Shyness (Crozier, 2005) and big five personality traits (Amichai & Vinitzky, 2010; Aydm & San, 2011; Castille & Sheets, 2012; Kuss & Griffiths, 2011; Ross et al., 2009; Sariyska, Reuter, Bey, Sha & Chen, 2014; Tan & Yang, 2014).

Conscientiousness means being responsible, hard-working and having sense of purpose (McCrae & Costa, 1999). Highly conscientious individuals tend to use Facebook less frequently as compared to individuals who score low in this category (Gosling, Augustine, Vazire, Holtzman & Gaddis, 2011). Past studies claimed that conscientiousness and unhealthy internet use have a negative relationship among each other (Ryan & Xenos, 2011; Randler, Horzum & Vollmer, 2014; Servidio, 2014).

Extraversion is a socially-oriented characteristics in a person that are related to needs for belongingness, the intensity of social interaction, and being adventuress (McCrae & Costa, 1999). Seidman (2013) proved that extrovert people have so many friends and they are consistent users of Facebook to communicate with friends. Amichai & Vinitzky (2010) proved that extrovert people spend their maximum time on Facebook and they use Facebook as a means to communicate and connect with their online friends (Marshall, Lefringhausen, & Ferenczi, 2015; Seidman, 2013). As per the study of Smith (2022), extroversion personality trait has a suppressing effect on the problematic Facebook use. So a strong association has been found between extraversion and Facebook usage intensity (Amichai & Vinitzky, 2010; Kuss & Griffiths, 2011).

Neuroticism is a set of characteristics that are related to anxiety, fear, frustration, and sensitivity to threat. Ross et al. (2009) proved specifically that people who score high in neuroticism tend to be emotionally unstable, and they prefer to use the Facebook timeline more frequently. Correa et al. (2010) proved that neuroticism and frequency of Facebook usage have a direct association with each other (Hughes et al., 2012), and neurotic individuals preferred to engage in personal contacts on Facebook (Seidman, 2013).

Agreeableness is also a personality trait. Highly agreeable individuals tend to be supportive, helpful, honest, and successful. Moore and McElroy (2012) claimed that agreeableness and social media usage have some association. Some past researches proved that agreeableness and Facebook addiction have a consistent negative relationship among each other (Anderson, 2008; Diana & Xavier, 2014; Randler et al., 2014; Servidio, 2014; Van, Overbeek, Engels, Scholte, Meerkerk & Eijnden, 2009). Few studies claimed that agreeableness and Facebook usage have a direct relationship with each other for communicating and connecting with others, but agreeableness has a negative relationship with Facebook usage for seeking attention or to defame others (Seidman, 2013; Stoughton et al., 2013).

Openness to experience means creative, independent, open-minded, and curious. Some studies claimed that openness and unhealthy internet usage have a positive relationship among each other (Kuss et al., 2013; Rahmani & Lavasani, 2011). McElroy, Hendrickson, Townsend, and DeMarie, (2007) found a negative association among openness to experience and problematic internet usage. Individuals with a higher level of openness to experience have found to be more active users of Facebook (Ross et al., 2009). Openness and Facebook usage intensity have a direct but positive association with each other (Correa et al., 2010; Hughes et al., 2012).

The current study implied the theory of planned behavior (TPB). TPB theory explains that individuals' intentions have immediate elements of their behaviors. The intention has three important independent variables which are subjective norm, perceived behavioral control, and attitude (Ajzen, 1991). Previous researchers through their empirical evidences recommended that attitude and subjective norms towards certain behavior significantly contribute towards individual's intentions of certain behavior (Doane, Pearson, & Kelley, 2014). The intention to Facebook usage can be one of the determinants. The element of perceived behavioral control among individuals represented the degree to which a certain behavior performance is under control of them (Ajzen, 1991). TPB theory is applied to a wide context to explain behavior intentions such as sharing of information and knowledge (Kuo & Young, 2008) as per their personality type and usage of technology (Crespo & del Bosque, 2008) like Facebook and social media.

2.1 Personality traits as a predictor of Facebook usage intensity (FUI)

Big five traits of personality have been observed as a critical predictors of FUI. A recent study by Michikyan, Subrahmanyam, and Dennis (2014) claimed that certain personality traits have a close relationship with online behaviors. As per the study of Amichai and Vinitzky (2010), personality traits determined the method and intensity of Facebook usage. The few studies examined the association of adolescent's social media usage intensity with their mental health. A negative association has been found among high social media usage intensity and mental health of its users (Boer, Van den Eijnden, et al., 2020; Shensa et al., 2017; Van et al., 2018). One more study highlighted the importance of considering social media usage intensity and social media usage problems as distinct behaviors, and these behaviors implied a risk to users' mental health (Boer et al., 2021).

As per Whait et al. (2018), conscientious people have preferred to use social media as a mean to maintain face to face interaction. Zhou, Li, Wang and Zhao (2017) looked specifically at the association between conscientiousness and internet addiction, and a negative correlation has been found. Highly conscientious individuals have preferred to use Facebook carefully (Tang, Chen, Yang, Chung & Lee, 2016) and they are inclined to favor real-life relations on online relationships (Tas & Ayas, 2015). The study of Tang et al. (2016) viewed that Facebook addiction has indirect relationship with some

personality traits such as conscientiousness, neuroticism, and agreeableness. Extraversion, conscientiousness, and agreeableness have direct relationship with Facebook usage while openness has indirect relationship with Facebook usage intensity (Gil, Diehl, Huber, & Liu, 2017). As per the study of Rajesh and Rangaiah (2022), personality traits such as agreeableness, openness to experience and conscientiousness have a negative relationship with Facebook addiction.

Some studies claimed that conscientiousness, openness, and agreeableness have indirect relationship with increased use of Facebook (Andreassen et al. 2013; Hussain et al. 2019). Van der et al. (2020) viewed that people who scored high in agreeableness and extraversion have found to be intense Facebook users. While a significant relationship has found among conscientious personality trait and Facebook usage intensity.

In another study, researchers viewed that high conscientiousness personality trait has some association with lower frequency of Facebook usage and shorter duration of time, and these individuals have a lesser number of friends on Facebook (Błachnio, Przepiorka, Senol & Sherstyuk, 2017). Ahmed and Iqbal (2021) viewed that conscientiousness has a negative correlation with Facebook addiction. Amichai and Vinitzky (2010) claimed that extraversion personality trait has some relationship with the higher social behavior of individuals. A significant positive relationship has found among extraversion personality trait and Facebook addiction (Ahmed & Iqbal, 2021). Agreeable individuals inclined to use Facebook to express their coordination with other people and extrovert people used Facebook as a mean to build relationships whereas neurotic individuals struggled to take out the best of themselves (Hatzithomas, Misirlis, Boutsouki & Vlachopoulou, 2019). In premises of TPB theory, in several studies personality types have been studied as an important relevant background factor of theory of planned behavior. For example conscientiousness was considered significant to intentions and human behavior (Picazo et al., 2010). So we build the hypothesis.

Hypothesis 1: Personality traits correlate with Facebook usage intensity.

Ebeling et al. (2007) claimed that personality traits have a significant correlation between shyness and internet use. They investigated that shyness has some relationship with other personality traits, and internet addiction. According to some past studies, shyness has some association with Facebook usage (Baker & Oswald, 2010; Sheldon, 2012). Facebook users have likely to be more extraverted, shy, less conscientious, and socially isolated (Ryan & Xenos, 2011).

2.3 Shyness as a mediator

Shyness is one of the personality characteristics of individuals who feel tension, discomfort, and fear when facing new social situations. Some previous studies claimed that shyness has a significant relationship with the Facebook usage (Baker & Oswald, 2010; Sheldon, 2012). Moreover, shyness is used as an important predictor of Internet addiction (Ayas, 2012; Eldeleklioglu & Vural, 2013; Tian et al., 2017). Shyness has described as a mediator among Facebook addiction and subjective well-being (Li, Shi & Dang, 2014; Satici, 2019). Previous study claimed that loneliness, shyness and narcissism have a significant relationship with Facebook addiction (Rajesh and Rangaiah, 2022).

In the perspective of theory of planned behavior, individuals' differences (Ajzen, 2011) like comparison, self-identity, self-esteem, shyness, narcissism (Zoonen, Verhoeven, & Elving, 2014) were also evaluated in context of online behavior and perceived social pressure among persons (Chang & Zhu, 2011; Picazo-Vela et al., 2010).

According to the study of Orr et al. (2009), shy individuals spent their maximum time on Facebook. Shy people preferred to maintain online relationships rather than face to face relationships (Ebeling et al., 2007). The association of loneliness with the problematic usage of Facebook was significantly positive (Smith, 2022). Amichai and Vinitzky (2010) proved that less conscious people tend to be shy and diligent when they use Facebook and they have more friends on Facebook. So we build the hypothesis.

Hypothesis 2: Shyness mediates the relationship of conscientiousness with Facebook usage intensity.

The study of Ryan and Xenos (2011) proved that individuals who frequently use Facebook tend to avoid live communication, and this routine can lead to loneliness and shyness. Orr et al. (2009) observed that shy people spend their maximum time on Facebook in comparison to less shy people, and they preferred to use Facebook as a tempting method for communicating with others. Ebeling et al. (2007) claimed that shyness is inversely related to extraversion and it has some association with problematic internet use and neuroticism. So we build the hypothesis.

Hypothesis 3: Shyness mediates the relationship between extraversion and Facebook usage intensity.

Ross et al. (2009) claimed that neurotic persons prefer to use the Facebook more frequently. Ebeling et al. (2007) proved that shyness is associated with problematic internet use and neuroticism personality trait. Neuroticism is directly related to the frequency of Facebook usage intensity (Correa et al., 2010). Moreover, shyness is predicted by neuroticism, and internet addiction (Ebeling et al., 2007). So we build the hypothesis.

Hypothesis 4: Shyness mediates the relationship between neuroticism personality trait and Facebook usage intensity.

The study of Han, Xu, Bian, Gao and Ren (2016) revealed that shy people tend to exhibit higher levels of helpful behavior when online in comparison to less shy individuals. Agreeableness is associated with the individual needs for belonging and acceptance seeking behavior of individuals on social media (Seidman, 2013). The study of Odaci and Celik (2013) verified that shyness is associated with problematic internet use. So we build the hypothesis.

Hypothesis 5: Shyness mediates the relationship between agreeableness and Facebook usage intensity.

Past studies claimed that openness to experience has a direct relationship with unhealthy internet use (Kuss et al., 2013; Rahmani & Lavasani, 2011). Openness is positively related to the frequency of Facebook usage (Correa et al., 2010; Hughes et al., 2012). People who are low in openness to experience like shyness, down to earth, and they preferred to spend their maximum time on Facebook (Costa & McCrae, 1992; Johnson & Ostendorf, 1993). So we build the hypothesis. So we build the hypothesis.

Hypothesis 6: Shyness mediates the relationship of openness to experience with Facebook usage intensity.

The current research study conceptualized a three-dimensional construct (see figure-1) to test the association whether shyness plays a mediating role in the association of personality traits and Facebook usage intensity.

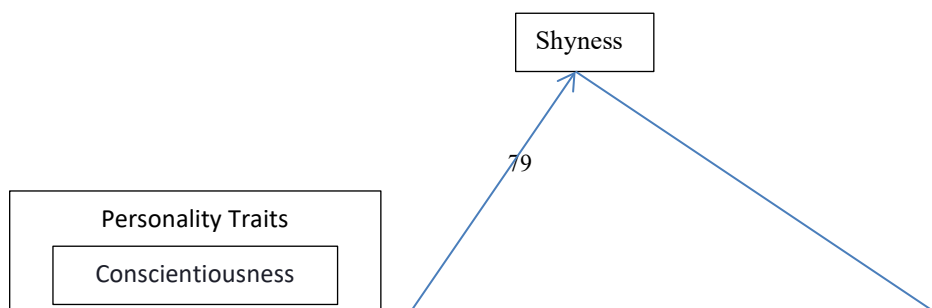


Fig.1: Conceptual framework of the study

3. Methodology

The nature of this study was deductive and research approach was explanatory. It was non-contrived and cross-sectional study. The unit of analysis was individual. The primary source was Facebook users. The present study tried to examine the relationship between personality traits, Facebook usage, and shyness. The already developed questionnaires were used on 5 point likert scale. Snowball sampling technique was applied. The target population was all the users of Facebook. The individuals were selected who possessed Facebook accounts. Snowball sampling helped the researchers for initial selection of respondents as are available in contacts and then obtained more respondents through contacts provided by the initial respondents (Zikmund, Babin, Carr, & Griffin, 2012). The electronic version of questionnaire was prepared and the link was shared with Facebook friends of authors. Further friends were requested to share the same link on their Facebook walls to get more responses. The sample size was determined as 250 as per the formula given by Krejcie and Morgan (1970). However, the researcher received 230 responses. SPSS version 24 was used as a software package. Process Macro was used to run the mediation analysis.

3.1 Measures

5-point likert scale was used to measure the responses of respondents from 1 to 5 (1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). Personality traits were measured by the scale given by John and Srivastava (1999). The instrument of this study has 25 items. The scale has reliability index of 0.811. FUI was measured by the questionnaire adopted from Ross et al., 2009. FUI questionnaire has 5 questions and reliability index of 0.910. Shyness was measured by the scale adopted from Cheek and Briggs, (1990). Cheek scale has 7 items and reliability index is 0.854.

4. Data Analysis

Table-1 shows that female respondents are more than male respondents. Age group of respondents shows that most of the respondents are below 25 years of age. Therefore, we can say that young individuals are more using the Facebook. Table depicts that number of married respondents are more than unmarried respondents. Moreover, majority of respondents has MS/MPhil degree that denotes forty two percent (42.6%, n = 230 of total share). Data shows that most of the respondents are employed somewhere.

Table 1: Demographics

Demographic characteristics	Frequency	Percent	Cumulative percent
Gender			
Male	89	38.7	39.1
Female	140	60.9	100.0
Age			
<25	73	31.7	31.7
26–30	59	25.7	57.4
31-35	50	21.7	79.1
36-40	38	16.5	95.7
>40	10	4.3	100.0
Marital status			
Single	111	48.3	48.3
Married	119	51.7	100
Education Level			
Graduate	57	24.8	24.8
Masters	61	26.5	51.3
MS/M.Phill	98	42.6	93.9
Ph.D	9	3.9	97.8
Other	5	2.2	100.0
Employment Status			
Employed	148	64.3	64.3
Unemployed	82	35.7	100

4.1 Descriptive Statistics

The descriptive statistics are shown in Table-2.

Table 2: Mean & Standard Deviation of Variables (N = 230)

Constructs	Mean	Std. Deviation
Conscientiousness	3.98	.46
Extraversion	3.62	.68
Neuroticism	3.37	.56
Agreeableness	3.88	.55
Openness to experience	3.80	.57

Facebook usage intensity	2.64	.99
Shyness	2.77	.78

The dependent variables, Facebook usage intensity possesses mean 2.64 and standard deviation 0.99 respectively. An independent variable, Conscientiousness possesses mean 3.98 and standard deviation 0.46 respectively. Second independent variable, extraversion possesses mean 3.62 and standard deviation 0.68 respectively. Third independent variable, neuroticism possesses mean 3.37 and standard deviation 0.56 respectively. Fourth independent variable, agreeableness possesses mean 3.88 and standard deviation 0.56 respectively. Fifth independent variable, openness to experience possesses mean 3.80 and standard deviation 0.57 respectively. A mediating variable, shyness possesses mean 2.77 and standard deviation 0.78 respectively. It shows that most of the responses lie between neutral to agree on likert scale.

Table 3 shows the correlation analysis.

Table3: Magnitude and Direction of Correlation among Study Variables (N=230)

	1	2	3	4	5	6	7
Conscientiousness	1						
Extraversion	.09**	1					
Neuroticism	.31**	.22**	1				
Agreeableness	.33**	.32**	.38**	1			
Openness to experience	.41**	.26**	.37*	.43	1		
Facebook usage intensity	.11**	.19**	-.02**	.02**	.15**	1	
Shyness	-.11**	-.39**	-.23**	-.17**	-.23**	.11**4	1

** . Correlation is significant at the 0.01 level (2-tailed).

*.Correlation is significant at the 0.05 level (2-tailed). Note. 1 = Conscientiousness, & 2 = Extraversion, 3 = Neuroticism 4 = Agreeableness, 5 = Openness to experience, 6 = Facebook usage intensity and & 7 = Shyness

Conscientiousness, Extraversion, Neuroticism, Agreeableness, Openness to experience have weak relationship with the dependent variables which is Facebook usage intensity. Conscientiousness, Extraversion, Agreeableness and Openness to experience have positive relationship with dependent variable and Neuroticism has negative relationship with Facebook usage intensity. The values of correlation coefficient are $r = .11, .19, -.02, .02, \& .15, p < 0.01$. It proved our hypothesis one that personality traits correlate with Facebook usage intensity.

4.2 Mediation

Process macro was applied for mediation recommended by Hayes (2012).

Mediation 1: Shyness mediates between Conscientiousness and Facebook usage.

It was hypothesized that shyness will act as a mediator between Conscientiousness and Facebook usage. Mediation analysis was carried out between Conscientiousness and Facebook usage, using PROCESS macro MACRO, (Hayes, A. F, 2012). See Table-4.

Table4: Mediation Analysis between Conscientiousness and Facebook usage through Shyness (N=230)

Antecedent	Consequent						
	Shyness			Facebook usage			
	Coeff.	SE	p	Coeff.	SE	p	
Constant	3.54	.45	0.000	1.13	.77	0.760637076	
Conscientiousness	-0.19	.16	0.87	0.26	0.14	.0630	
Shyness	-	-	-	0.16	.083	.0534	
		$R^2 = .013$			$R^2 = .279$		
	$F(1,228) = 2.94, p > .001$			$F(2,227) = 3.26, p < .001$			

Note: Coeff= standardized regression coefficient

Mediation results indicated that Conscientiousness was found to be insignificant predictor of Shyness and Facebook usage. Whereas Shyness was found to be insignificant predictor of Facebook usage. So, mediation was found to be insignificant. Indirect effect (effect=-.03 boot strap Interval =.02) However the direct effect of Shyness was found to be insignificant between Conscientiousness and Facebook usage. So, it rejected the hypothesis two. See figure- 2

The Statistical Model of Mediation Analysis

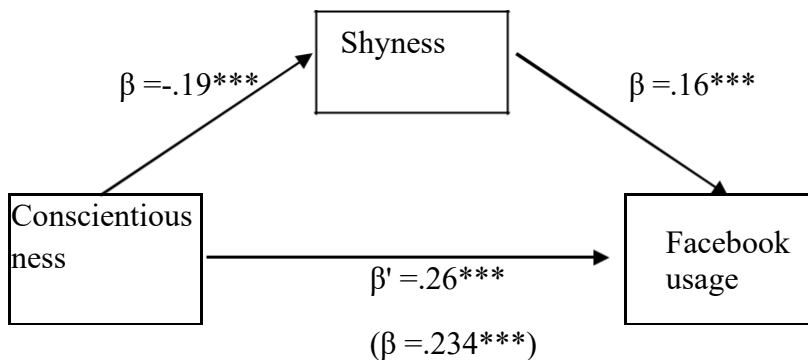


Fig.2

Mediation 2: Shyness mediates between Extraversion and Facebook usage.

It was hypothesized that shyness will act as a mediator between Extraversion and Facebook usage. Mediation analysis was carried out between Extraversion and Facebook usage, using PROCESS macro MACRO, (Hayes, A. F, 2012). See Table 5

Table 5: Mediation Analysis between Extraversion and Facebook usage through Shyness (N=230)

Antecedent	Consequent					
	Shyness			Facebook usage		
	Coeff.	SE	p	Coeff.	SE	p
Constant	4.40	.26	0.000	0.41	0.51	0.000
Extraversion	-0.45	.07	0.000	0.40	0.10	.0001
Shyness	-	-	-	0.28	.09	.0016
	$R^2 = .015$			$R^2 = .08$		
	$F(1,228) = 41.22, p < .001$			$F(2,227) = 9.50, p < .001$		

Note: Coeff= standardized regression coefficient

Mediation results indicated that Extraversion was found to be positive significant predictor of Shyness and FUI. Whereas Shyness was found to be significant predictor of FUI. So, mediation was found to be significant. Indirect effect (effect= -.13 boot strap Interval =.04). However the direct effect of Shyness was found to be positively significant between Extraversion and Facebook usage. So, it accepted the hypothesis three. See figure- 3

The Statistical Model of Mediation Analysis

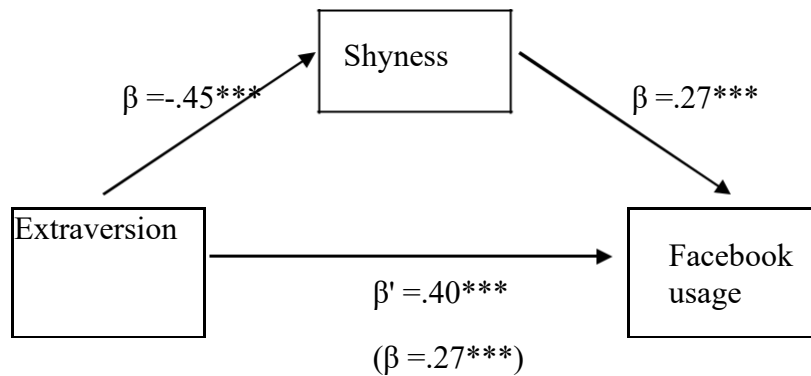


Fig.3

Mediation 3: Shyness mediates between Neuroticism and Facebook usage

It was hypothesized that shyness will act as a mediator between Neuroticism and Facebook usage. Mediation analysis was carried out between Neuroticism and Facebook usage, using PROCESS macro MACRO, (Hayes, A. F, 2012). See Table 6.

Table 6: Mediation Analysis between Neuroticism and Facebook usage through Shyness (N=230)

Antecedent	Consequent						
	Shyness			Facebook usage			
	Coeff.	SE	p	Coeff.	SE	p	
Constant	3.85	.31	0.000	2.20	77 0.52	0.000	
Neuroticism	-0.32	.09	0.005	0.01	0.12	.929	
Shyness	-	-	-	0.14	.09	.089	
	$R^2 = .051$			$R^2 = .013$			
	$F(1,228) = 12.478, p < .001$			$F(2,227) = 1.497, p < .001$			

Note: Coeff= standardized regression coefficient

Mediation results indicated that Neuroticism was found to be positive significant predictor of Shyness and FUI. Whereas Shyness was found to be significant predictor of FUI. So, mediation was found to be significant. Indirect effect (effect= -.05 boot strap Interval =.03). However the direct effect of Shyness was found to be positively significant between Neuroticism and Facebook usage. So, it accepted the hypothesis four. See figure 4.

The Statistical Model of Mediation Analysis

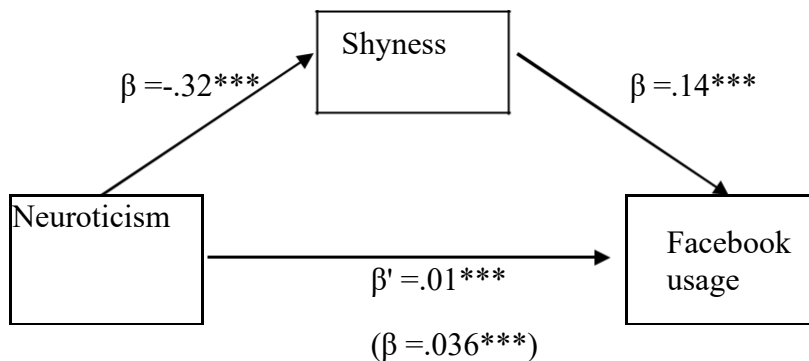


Fig.4

Mediation 4: Shyness mediates between Agreeableness and Facebook usage

It was hypothesized that shyness will act as a mediator between Agreeableness and Facebook usage. Mediation analysis was carried out between Agreeableness and Facebook usage, using PROCESS macro MACRO, (Hayes, A. F, 2012). See Table 7.

Table 7: Mediation Analysis between Agreeableness and Facebook usage through Shyness (N=230)

Antecedent	Consequent						
	Shyness			Facebook usage			
	Coeff.	SE	p	Coeff.	SE	p	
Constant	3.71	.36	0.000	1.94	.77	0.56	.0000
Agreeableness	-0.24	.09	0.090	0.71	0.12	.550	
Shyness	-	-	-	0.15	.08	.0721	
	$R^2 = .029$			$R^2 = .014$			
	$F(1,228) = 6.93, p < .001$			$F(2,227) = 1.67, p < .001$			

Note: Coeff= standardized regression coefficient

Mediation results indicated that Agreeableness was found to be positive significant predictor of Shyness and FUI. Whereas Shyness was found to be significant predictor of FUI. So, mediation was found to be significant. Indirect effect (effect= -.04 boot strap Interval =.03). However the direct effect of Shyness was found to be positively significant between Agreeableness and Facebook usage. So, it accepted the hypothesis five. See figure 5.

The Statistical Model of Mediation Analysis

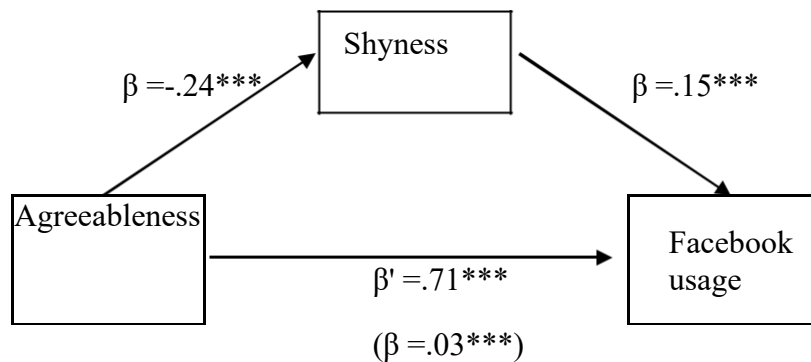


Figure- 5

Mediation 5: Shyness mediates between the relationships of Openness to experience with Facebook usage

It was hypothesized that shyness will act as a mediator between Openness to experience and FUI. Mediation analysis was carried out between Openness to experience and FUI, using PROCESS macro MACRO, (Hayes, A. F, 2012). See Table 8.

Table 8: Mediation Analysis among Openness to experience & FUI through Shyness (N=230)

Antecedent	Consequent					
	Shyness			Facebook usage		
	Coeff.	SE	p	Coeff.	SE	p
Constant	3.94	.34	0.000	0.89	0.54	0.000
Openness to experience	-0.30	.09	0.006	0.32	0.11	.006
Shyness	-	-	-	0.19	.084	.0020
	$R^2 = .510$			$R^2 = .045$		
	$F(1,228) = 12.24, p < .001$			$F(2,227) = 5.393, p < .001$		

Note: Coeff= standardized regression coefficient

Mediation results indicated that Openness to experience was found to be positive significant predictor of Shyness and FUI. Whereas, Shyness was found to be significant predictor of FUI. So, mediation was found to be significant. Indirect effect (effect= -.06 boot strap Interval =.04 However the direct effect of Shyness was found to be positively significant among Openness to experience and FUI. So, it accepted the hypothesis six. See figure 6.

The Statistical Model of Mediation Analysis

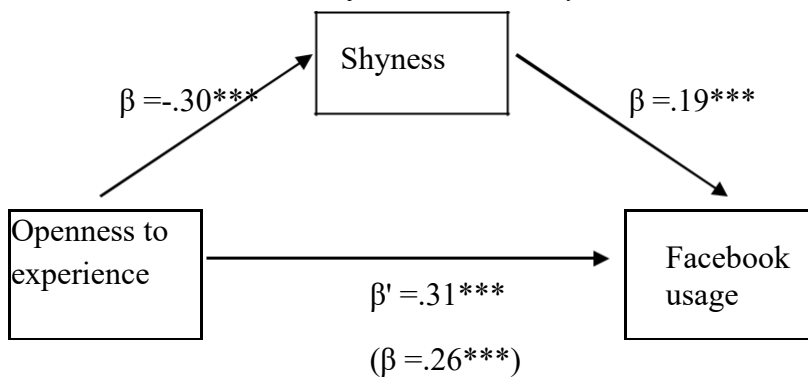


Fig.6

Table 9. shows the overall decision regarding all the hypotheses.

Table 9: Hypothesis Test Results

Sr. #	Hypothesis	Decision
1	Personality traits correlate with Facebook usage intensity.	Be accepted
2	Shyness Mediates between Conscientiousness and Facebook usage intensity.	Not accepted
3	Shyness Mediates between Extraversion and Facebook usage intensity.	Be accepted
4	Shyness Mediates between Neuroticism and Facebook usage intensity.	Be accepted
5	Shyness Mediates between Agreeableness and Facebook usage intensity.	Be accepted
6	Shyness Mediates among Openness to experience & Facebook usage intensity.	Be accepted

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5. Discussion

The current study has achieved its objectives of testing the hypotheses. In our first hypothesis, it is proved that five factor personality traits correlate with Facebook usage intensity. Ebeling et al. (2007) proved that personality traits have significant correlation with frequency of internet use. Hatzithomas et al. (2019) also proved that personality traits (agreeableness, extroversion, neuroticism) have association with Facebook usage. Previous literature on Facebook usage showed that there are some personality traits which contribute to Facebook usage either positively or negatively such as big five personality traits (Amichai & Vinitzky, 2010; Aydm & San, 2011; Castille & Sheets, 2012; Kuss & Griffiths, 2011; Tan & Yang, 2014).

In our second hypothesis, it is verified that the association among consciousness personality trait and Facebook usage intensity is not mediated by shyness. Mediation results indicate that conscientiousness is found to be insignificant predictor of shyness and Facebook usage. Highly conscious people tend to spend less time on Facebook with shyness as mediator. It means people who are high in consciousness tend to have less shyness and they preferred to meet people live rather on Facebook. As per the study of Whait et al. (2018), conscientious people use social media to help maintain good face to face social interactions. Orr et al. (2009) proved that individuals with Facebook addiction are more likely to have high shyness levels. People who are low in consciousness tend to be more shy and diligent when they use Facebook and they have more Facebook friends (Amichai & Vinitzky, 2010). The study of Yuen et al. (2019) also proved that people who are using Facebook significantly experience worsened mood as compared to when they are browsing the internet, commenting or passively browsing on internet.

Third, consistent with the current study hypothesis, mediation results prove that extraversion is a positive significant predictor of shyness and Facebook usage intensity. People who are high in extraversion tend to spend their more time on Facebook with the shyness as a mediator. According to the study of Ebeling et al. (2007), shy individuals are preferred to express themselves in an online community rather than in face to face communications. They claimed that shyness has a strong association with extraversion and problematic internet use. Some past studies proved that shyness is the strong predictor of Facebook usage (Baker & Oswald, 2010; Sheldon, 2012).

Fourth, consistent with the hypothesis, mediation results prove that neuroticism is a positive significant predictor of shyness and Facebook usage intensity. Similarly, the study of Ebeling et al. (2007) claimed that shyness is strongly predicted by neuroticism and Facebook addiction. Ross et al. (2009) looked specifically that people who scored high in neuroticism tend to be emotionally unstable, and they preferred to use Facebook timeline more frequently. Correa et al. (2010) proved that neuroticism is positively related to the frequency of Facebook usage intensity. Neurotic individuals may often use Facebook for social commitments (Hughes et al., 2012) and for engaging in personal disclosure on Facebook (Seidman, 2013). These results suggest that shyness may work as a mediator in the association of neuroticism and frequency of Facebook use.

Fifth, consistent with the current study hypothesis, mediation results prove that agreeableness is a positive significant predictor of shyness and Facebook usage intensity. The previous study by Han et al. (2016) claimed that shy people tend to exhibit high level of helping behavior when they are online in comparison to less shy individuals. Seidman (2013) proved that agreeableness is associated with the individual needs for belonging and acceptance seeking behavior of individuals on social media. Results suggest that shyness acts as a mediator in the association of agreeableness with Facebook usage intensity.

In our last hypothesis, mediation results prove that openness to experience is a positive significant predictor of Shyness and Facebook usage intensity. Shy people tend to avoid participating in social interactions (Ashe & McCutcheon, 2001) and they feel uncomfortable in meeting people and in the presence of unknowns (Ebeling et al. 2007). The studies of Costa & McCrae (1992) and Johnson &

Ostendorf (1993) claimed that people who are low in openness to experience like shyness and they preferred to spent maximum time on Facebook. Findings suggest that shyness acts as a mediator in the association of openness personality trait with Facebook usage intensity.

Previous studies on social network sites, SNS acceptance and practice (Pelling & White , 2009) reflect that young adults' intensity to use social media is mainly dependent upon their attitude and subjective norms. The previous study of Kircaburun and Griffiths (2018) claimed that personality traits such as agreeableness and conscientiousness are negatively linked with Instagram addiction. It depicted the generalization of the current study with other social media platforms as well. Moreover the individuals' self-identity and personality characteristics also implies on their social behavior control. Chang and Zhu (2011) in their study on pre-adopters and post-adopters also proved that all constructs of TPB which are attitude, perceived behavioral control and, subjective norms have significant effect on individuals' intention to use social media. The current study also confirms the same results.

6. Conclusion

The present study empirically proved that shyness is significantly mediating the relationship of Facebook usage intensity and personality traits (e.g. extraversion, neuroticism, agreeableness and openness to experience). While the association among Facebook usage intensity and conscientiousness is not mediated by shyness. The current study is the first attempt to present a quantitative model that describes about the relationships between personality traits, shyness, and Facebook usage intensity. In agreement with past studies, this study proved that extraversion, neuroticism, agreeableness and openness are the predictor of Facebook usage and shyness acts as a mediator in their relationship. Scholars should examine the underlying personality traits for the increasing frequency of Facebook usage as this can leads toward Facebook addiction. Moreover, education scholars should focus on developing such measures that can preclude Facebook addiction in our youngsters.

The current study is based on cross sectional approach which does not record the behavior changes of responses with time. In future experimental or longitudinal design can be used that may help to clarify causal directions of the variables. The study has a small sample size and no equal proportion of male and female respondents which has less generalizability. In future, the sample size can be increased by adding other social media platforms and different user populations, as well as potential cultural differences that might influence the relationships between personality traits, shyness, and social media usage. Moreover, the current study has limited variables. Other factors like social media network consumption can also be included as independent factors to evaluate Facebook usage. In future, comparative study may be conducted and researchers can study other social media networks such as Instagram, twitter etc. to study their excessive usage effects on different personality traits. This will definitely help educational institutes, social media developers and researchers for studying the online behavior of youngsters in order to develop or introduce some learning platforms.

The study is beneficial to extend the knowledge about the mediating role of shyness in the relationship between personality traits and Facebook usage intensity that adds a novel perspective to the existing literature of social media use. The study is beneficial for individuals to learn themselves to avoid from Facebook addiction. Shy individuals can evaluate themselves effectively as per their personality trait and can increase or decrease their Facebook addiction accordingly. This study is helpful for social media users and network developers in addition to enhancing the emotional development, community affiliation, creativity, and innovation of the different young people involved in online interactions. The study is eye opening for individuals to understand that Facebook is not only a trend rather it leaves tangible impression on their personalities. The study will be beneficial for educationist to understand the reasons or personality traits of students who are Facebook addicted. The educationist can judge the shy students also as per their personality traits. Moreover, the managerial implication of the current study suggests that firm managers should use an appropriate social media-based innovation strategy for their employees. Managers can identify their employees who frequently use Facebook during office hours and they can assign them office tasks as per their social skills.

References

- Ahmad, G., & Iqbal, H. (2021). Personality Traits: Facebook Addiction among Teenagers and Young Adults. *Academic Journal of Social Sciences (AJSS)*, 5(1).
- Ajzen, I. (2011). The theory of planned behaviour: reactions and reflections. *Psychology & Health*, 26(9), 1113-1127.
- Alexa, A. (2011). Alexa top 500 global sites. <<http://www.alexa.com/topsites>> Accessed 03.02.11.
- Amichai-Hamburger, Y., Wainapel, G., & Fox, S. (2002). "On the Internet no one knows I'm an introvert": Extroversion, neuroticism, and Internet interaction. *Cyberpsychology & behavior*, 5(2), 125-128.
- Amichai-Hamburger, Y., & Vinitzky, G. (2010). Social network use and personality. *Computers in human behavior*, 26(6), 1289-1295.
- Anderson, L. M. (2008). MySpace use as a potentially dysfunctional Internet behavior. *The University of Texas at El Paso*.
- Anderson, M., & Jiang, J. (2018). *Teens, social media & technology 2018*. Retrieved from www.pewresearch.org.
- Andreassen, C. S., Griffiths, M. D., Gjertsen, S. R., Krossbakken, E., Kvam, S., & Pallesen, S. (2013). The relationships between behavioral addictions and the five-factor model of personality. *Journal of behavioral addictions*, 2(2), 90-99.
- Ashe, D. D., & McCutcheon, L. E. (2001). *Shyness, loneliness, and attitude toward celebrities*. *Current Research in Social Psychology*, 6, 124-133.
- Alshalawi, A. S. (2022). Social Media Usage Intensity and Academic Performance among Undergraduate Students in Saudi Arabia. *Contemporary Educational Technology*, 14(2), ep361.
- Ayas, T. (2012). The relationship between Internet and computer game addiction level and shyness among high school students. *Educational Sciences: Theory And Practice*, 12(2), 632-636.
- Aydm, B., & San, S. V. (2011). Internet addiction among adolescents: the role of self-esteem. *Procedia-Social and Behavioral Sciences*, 15, 3500-3505.
- Baker, L. R., & Oswald, D. L. (2010). Shyness and online social networking services. *Journal of Social and Personal Relationships*, 27(7), 873-889.
- Błachnio, A., Przepiorka, A., Senol-Durak, E., Durak, M., & Sherstyuk, L. (2017). The role of personality traits in Facebook and Internet addictions: A study on Polish, Turkish, and Ukrainian samples. *Computers in Human Behavior*, 68, 269-275.
- Boer, M., Stevens, G. W., Finkenauer, C., de Looze, M. E., & van den Eijnden, R. J. (2021). Social media use intensity, social media use problems, and mental health among adolescents: Investigating directionality and mediating processes. *Computers in Human Behavior*, 116, 106645.
- Boer, M., Van den Eijnden, R. J. J. M., Boniel-Nissim, M., Wong, S.-L., Inchley, J. C., Badura, P., et al. (2020). Adolescents' intense and problematic social media use and their wellbeing in 29 countries. *Journal of Adolescent Health*, 66(6), S89-S99. <https://doi.org/10.1016/j.jadohealth.2020.02.014>
- Buffardi, L. E., & Campbell, W. K. (2008). Narcissism and social networking web sites. *Personality and social psychology bulletin*, 34(10), 1303-1314.

- Burke, M., Marlow, C., & Lento, T. (2010, April). Social network activity and social well-being. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 1909-1912).
- Caplan, S. E. (2006). Relations among loneliness, social anxiety, and problematic Internet use. *CyberPsychology & Behavior*, 10(2), 234-242.
- Caprara, G. V., Barbaranelli, C., & Livi, S. (1994). Mapping personality dimensions in the Big Five model. *European Review of Applied Psychology*, 44(1), 9-15.
- Castille, C. M., & Sheets, T. L. (2012). The Five Factor Model of personality and employees' excessive use of technology. *Computers in Human Behavior*, 28(5), 1947-1953.
- Chang, Y. P., & Zhu, D. H. (2011). Understanding social networking sites adoption in China: A comparison of pre-adoption and post-adoption. *Computers in Human Behavior*, 27(5), 1840-1848.
- Cheek, J. M., & Briggs, S. R. (1990). Shyness as a personality trait. *Shyness and embarrassment: Perspectives from social psychology*, 315-337.
- Correa, T., Hinsley, A. W., & De Zuniga, H. G. (2010). Who interacts on the Web?: The intersection of users' personality and social media use. *Computers in Human Behavior*, 26(2), 247-253.
- Costa Jr, P. T., & McCrae, R. R. (1992). Neo personality inventory-revised (neo-pi-r) and neo five-factor inventory (neo-ffi) professional manual. *Odessa, FL: Psychological Assessment Resources*.
- Crespo, Á. H., & del Bosque, I. R. (2008). The effect of innovativeness on the adoption of B2C e-commerce: A model based on the Theory of Planned Behaviour. *Computers in Human Behavior*, 24(6), 2830-2847.
- Crozier, W. R. (2005). Measuring shyness: analysis of the Revised Cheek and Buss Shyness scale. *Personality and Individual Differences*, 38(8), 1947-1956.
- Diana, X. P. C., & Xavier, C. (2014). The model of the big five personality factors and problematic Internet use in Colombian youth. *Adicciones*, 26(1).
- Doane, A. N., Pearson, M. R., & Kelley, M. L. (2014). Predictors of cyberbullying perpetration among college students: An application of the theory of reasoned action. *Computers in Human Behavior*, 36, 154-162.
- Ebeling-Witte, S., Frank, M. L., & Lester, D. (2007). Shyness, Internet use, and personality. *CyberPsychology & Behavior*, 10(5), 713-716.
- Ehrenberg, A., Juckes, S., White, K. M., & Walsh, S. P. (2008). Personality and self-esteem as predictors of young people's technology use. *Cyberpsychology & behavior*, 11(6), 739-741.
- ELDELEKLİOĞLU, J., & VURAL, M. (2013). Predictive effects of academic achievement, internet use duration, loneliness and shyness on internet addiction. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 28(28-1).
- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of computer-mediated communication*, 12(4), 1143-1168.
- Engelberg, E., & Sjöberg, L. (2004). Internet use, social skills, and adjustment. *Cyberpsychology & behavior*, 7(1), 41-47.
- Gil de Zúñiga, H., Diehl, T., Huber, B., & Liu, J. (2017). Personality traits and social media use in 20 countries: How personality relates to frequency of social media use, social media news use, and social media use for social interaction. *Cyberpsychology, Behavior, and Social Networking*, 20(9), 540-552.

- Goldberg, L. R. (1990). An alternative" description of personality": the big-five factor structure. *Journal of personality and social psychology*, 59(6), 1216.
- Gonzalez, N. (2011). Facebook marketing statistics, demographics, reports and news. *Retrieved on*, 29(11), 2011.
- Gosling, S. D., Augustine, A. A., Vazire, S., Holtzman, N., & Gaddis, S. (2011). Manifestations of personality in online social networks: Self-reported Facebook-related behaviors and observable profile information. *Cyberpsychology, Behavior, and Social Networking*, 14(9), 483-488.
- Hatzithomas, L., Misirlis, N., Boutsouki, C., & Vlachopoulou, M. (2019). Understanding the role of personality traits on Facebook intensity. *International Journal of Internet Marketing and Advertising*, 13(2), 99-119.
- Han, L., Xu, J., Bian, Y., Gao, F., & Ren, Y. (2016). Effects of problem characteristics on the online helping behavior of shy individuals. *Computers in Human Behavior*, 64, 531-536.
- Hargittai, E. (2007). Whose space? Differences among users and non-users of social network sites. *Journal of computer-mediated communication*, 13(1), 276-297.
- Hayes, A. F. (2012). PROCESS [Macro]. *The Ohio State University*.
- Hughes, D. J., Rowe, M., Batey, M., & Lee, A. (2012). A tale of two sites: Twitter vs. Facebook and the personality predictors of social media usage. *Computers in Human Behavior*, 28(2), 561-569.
- Hussain, Z., Simonovic, B., Stupple, E. J., & Austin, M. (2019). Using eye tracking to explore facebook use and associations with facebook addiction, mental well-being, and personality. *Behavioral Sciences*, 9(2), 19.
- John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. *Handbook of personality: Theory and research*, 2(1999), 102-138.
- Johnson, J. A., & Ostendorf, F. (1993). Clarification of the five-factor model with the Abridged Big Five Dimensional Circumplex. *Journal of personality and social psychology*, 65(3), 563.
- Kim, H. K., & Davis, K. E. (2009). Toward a comprehensive theory of problematic Internet use: Evaluating the role of self-esteem, anxiety, flow, and the self-rated importance of Internet activities. *Computers in Human Behavior*, 25(2), 490-500.
- Kircaburun, K., & Griffiths, M. D. (2018). Instagram addiction and the Big Five of personality: The mediating role of self-liking. *Journal of behavioral addictions*, 7(1), 158-170.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
- Kuo, F. Y., & Young, M. L. (2008). Predicting knowledge sharing practices through intention: A test of competing models. *Computers in Human Behavior*, 24(6), 2697-2722.
- Kuss, D. J., & Griffiths, M. D. (2011). Online social networking and addiction—a review of the psychological literature. *International journal of environmental research and public health*, 8(9), 3528-3552.
- Kuss, D. J., Van Rooij, A. J., Shorter, G. W., Griffiths, M. D., & van de Mheen, D. (2013). Internet addiction in adolescents: Prevalence and risk factors. *Computers in Human Behavior*, 29(5), 1987-1996.
- Landers, R. N., & Lounsbury, J. W. (2006). An investigation of Big Five and narrow personality traits in relation to Internet usage. *Computers in human behavior*, 22(2), 283-293.

- Li, C., Shi, X., & Dang, J. (2014). Online communication and subjective well-being in Chinese college students: the mediating role of shyness and social self-efficacy. *Computers in Human Behavior*, 34, 89–95.
- Marshall, T. C., Lefringhausen, K., & Ferenczi, N. (2015). The Big Five, self-esteem, and narcissism as predictors of the topics people write about in Facebook status updates. *Personality and Individual Differences*, 85, 35-40.
- Mehdizadeh, S. (2010). Self-presentation 2.0: Narcissism and self-esteem on Facebook. *Cyberpsychology, behavior, and social networking*, 13(4), 357-364.
- McCrae, R. R., & Costa Jr, P. T. (1999/2015). A five-factor theory of personality. *Handbook of personality: Theory and research*, 2(1999), 139-153.
- McCrae, R. R., & John, O. P. (1992). An introduction to the Five-Factor model and its applications (special edition). *Journal of Personality*, 60, 175–215. doi:10.1111/j.1467-6494.1992.tb00970.x.
- McElroy, J. C., Hendrickson, A. R., Townsend, A. M., & DeMarie, S. M. (2007). Dispositional factors in internet use: personality versus cognitive style. *MIS quarterly*, 809-820.
- Michikyan, M., Subrahmanyam, K., & Dennis, J. (2014). Can you tell who I am? Neuroticism, extraversion, and online self-presentation among young adults. *Computers in Human Behavior*, 33, 179-183.
- Moody, E. J. (2001). Internet use and its relationship to loneliness. *CyberPsychology & Behavior*, 4(3), 393-401.
- Moore, K., & McElroy, J. C. (2012). The influence of personality on Facebook usage, wall postings, and regret. *Computers in Human Behavior*, 28(1), 267-274.
- Odacı, H., & Çelik, Ç. B. (2013). Who are problematic internet users? An investigation of the correlations between problematic internet use and shyness, loneliness, narcissism, aggression and self-perception. *Computers in Human Behavior*, 29(6), 2382-2387.
- Orr, E. S., Sisic, M., Ross, C., Simmering, M. G., Arseneault, J. M., & Orr, R. R. (2009). The influence of shyness on the use of Facebook in an undergraduate sample. *CyberPsychology & Behavior*, 12(3), 337-340.
- Pelling, E. L., & White, K. M. (2009). The theory of planned behavior applied to young people's use of social networking web sites. *CyberPsychology & Behavior*, 12(6), 755-759.
- Pettijohn II, T.F., LaPiene, K.E., Pettijohn, T.F. and Horting, A.L. (2012). Relationships between facebook intensity, friendship contingent self-esteem, and personality in US college students. *Cyberpsychology*, 6(1), 1–7.
- Picazo-Vela, S., Chou, S. Y., Melcher, A. J., & Pearson, J. M. (2010). Why provide an online review? An extended theory of planned behavior and the role of Big-Five personality traits. *Computers in Human Behavior*, 26(4), 685-696.
- Raacke, J., & Bonds-Raacke, J. (2008). MySpace and Facebook: Applying the uses and gratifications theory to exploring friend-networking sites. *Cyberpsychology & behavior*, 11(2), 169-174.
- Rahmani, S., & Lavasani, M. G. (2011). The relationship between internet dependency with sensation seeking and personality. *Procedia-Social and Behavioral Sciences*, 30, 272-277.
- Rajesh, T., & Rangaiah, B. (2022). Relationship between personality traits and facebook addiction: A meta-analysis. *Heliyon*, 8(8), e10315.

- Randler, C., Horzum, M. B., & Vollmer, C. (2014). Internet addiction and its relationship to chronotype and personality in a Turkish university student sample. *Social science computer review*, 32(4), 484-495.
- Richardson, K., & Hessey, S. (2009). Archiving the self? Facebook as biography of social and relational memory. *Journal of Information, Communication and Ethics in Society*, 7(1), 25-38.
- Rizaty, M. A. (2021). Inilah negara pengguna instagram terbanyak, Indonesia urutan berapa. *Diakses dari <https://databoks.katadata.co.id/datapublish/2021/08/03/inilah-negara-pengguna-instagram-terbanyak-indonesia-urutan-berapa>*.
- Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. R. (2009). Personality and motivations associated with Facebook use. *Computers in human behavior*, 25(2), 578-586.
- Ryan, T., & Xenos, S. (2011). Who uses Facebook? An investigation into the relationship between the Big Five, shyness, narcissism, loneliness, and Facebook usage. *Computers in human behavior*, 27(5), 1658-1664.
- Satici, S. A. (2019). Facebook addiction and subjective well-being: A study of the mediating role of shyness and loneliness. *International Journal of Mental Health and Addiction*, 17(1), 41-55.
- Sariyska, R., Reuter, M., Bey, K., Sha, P., Li, M., Chen, Y. F., ... & Feldmann, M. (2014). Self-esteem, personality and internet addiction: a cross-cultural comparison study. *Personality and Individual Differences*, 61, 28-33.
- Seidman, G. (2013). Self-presentation and belonging on Facebook: How personality influences social media use and motivations. *Personality and Individual Differences*, 54(3), 402-407.
- Servidio, R. (2014). Exploring the effects of demographic factors, Internet usage and personality traits on Internet addiction in a sample of Italian university students. *Computers in Human Behavior*, 35, 85-92.
- Sheldon, P. (2012). Profiling the non-users: Examination of life-position indicators, sensation seeking, shyness, and loneliness among users and non-users of social network sites. *Computers in Human Behavior*, 28(5), 1960-1965.
- Sheldon, P. (2008). The relationship between unwillingness-to-communicate and students' Facebook use. *Journal of Media Psychology*, 20(2), 67-75.
- Sheldon, P. (2009). Maintain or develop new relationships? Gender differences in Facebook use. *Rocky Mountain Communication Review*, 6, 51-56.
- Shensa, A., Escobar-Viera, C. G., Sidani, J. E., Bowman, N. D., Marshal, M. P., & Primack, B. A. (2017). Problematic social media use and depressive symptoms among U.S. Young adults: A nationally-representative study. *Social Science & Medicine*, 182, 150-157. <https://doi.org/10.1016/j.socscimed.2017.03.061>
- Smith, T. (2022). An exploratory analysis of the relationship of problematic Facebook use with loneliness and self-esteem: the mediating roles of extraversion and self-presentation. *Current Psychology*, 1-15.
- Steinfeld, C., Ellison, N. B., & Lampe, C. (2008). Social capital, self-esteem, and use of online social network sites: A longitudinal analysis. *Journal of Applied Developmental Psychology*, 29(6), 434-445.
- Symeonidis, I., Biczók, G., Shirazi, F., Pérez-Solà, C., Schroers, J., & Preneel, B. (2018). Collateral damage of Facebook third-party applications: a comprehensive study. *Computers & Security*, 77, 179-208.

- Tan, W. K., & Yang, C. Y. (2014). Internet applications use and personality. *Telematics and Informatics*, 31(1), 27-38.
- Tang, J. H., Chen, M. C., Yang, C. Y., Chung, T. Y., & Lee, Y. A. (2016). Personality traits, interpersonal relationships, online social support, and Facebook addiction. *Telematics and Informatics*, 33(1), 102-108.
- Thayer, S. E., & Ray, S. (2006). Online communication preferences across age, gender, and duration of Internet use. *CyberPsychology & Behavior*, 9(4), 432-440.
- Tian, Y., Bian, Y., Han, P., Gao, F., & Wang, P. (2017). Associations between psychosocial factors and generalized pathological Internet use in Chinese university students: A longitudinal cross-lagged analysis. *Computers in Human Behavior*, 72, 178-188.
- Tosun, L. P., & Lajunen, T. (2010). Does Internet use reflect your personality? Relationship between Eysenck's personality dimensions and Internet use. *Computers in Human Behavior*, 26(2), 162-167.
- Tufekci, Z. (2008). Grooming, gossip, Facebook and MySpace: What can we learn about these sites from those who won't assimilate?. *Information, Communication & Society*, 11(4), 544-564.
- Tupes, E. C., & Christal, R. E. (1961). Recurrent personality factors based on trait ratings. *Journal of personality*, 60(2), 225-251.
- Van den Eijnden, R. J. J. M., Koning, I. M., Doornwaard, S., Van Gorp, F., & Ter Bogt, T. (2018). The impact of heavy and disordered use of games and social media on adolescents' psychological, social, and school functioning. *Journal of Behavioral Addictions*, 7(3), 697-706. <https://doi.org/10.1556/2006.7.2018.65>
- Van der Aa, N., Overbeek, G., Engels, R. C., Scholte, R. H., Meerkerk, G. J., & Van den Eijnden, R. J. (2009). Daily and compulsive internet use and well-being in adolescence: a diathesis-stress model based on big five personality traits. *Journal of youth and adolescence*, 38(6), 765.
- Van der Schyff, K., Flowerday, S., Kruger, H., & Patel, N. (2022). Intensity of Facebook use: a personality-based perspective on dependency formation. *Behaviour & Information Technology*, 41(1), 198-214.
- Vannucci, A., & McCauley Ohannessian, C. (2019). Social media use subgroups differentially predict psychosocial well-being during early adolescence. *Journal of Youth and Adolescence*, 1469-1493. <https://doi.org/10.1007/s10964-019-01060-9>
- Whaite, Erin O.; Shensa, Ariel; Sidani, Jaime E.; Colditz, Jason B.; Primack, Brian A. (2018). Social media use, personality characteristics, and social isolation among young adults in the United States. *Personality and Individual Differences*, 124(), 45-50. doi:10.1016/j.paid.2017.10.030
- Yuen, E. K., Koterba, E. A., Stasio, M. J., Patrick, R. B., Gangi, C., Ash, P., ... & Mansour, B. (2019). The effects of Facebook on mood in emerging adults. *Psychology of Popular Media Culture*, 8(3), 198.
- Zhou, Y., Li, D., Li, X., Wang, Y., & Zhao, L. (2017). Big five personality and adolescent Internet addiction: The mediating role of coping style. *Addictive Behaviors*, 64, 42-48.
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2012). *Business Research Methods* (9th International ed.). *South-Western College Publishing*.
- Zoonen, W., Verhoeven, J. W., & Elving, W. J. (2014). Understanding work-related social media use: An extension of theory of planned behavior. *International Journal of Management, Economics and Social Sciences (IJMESS)*, 3(4), 164-183.