
Research

INVOLVEMENT AND COMMUNICATION ON FACE BOOK: EXPLORING INTERACTION PATTERNS OF PERSONALITY AND ADULT ATTACHMENT STYLES

Sobia Bashir¹, Jamil A Malik² and Sadia Mansoor³

Abstract

The study is intended to explore individuals' involvement and interaction on Facebook as an outcome of personality dimensions, and attachment styles. Participants (N=383) Facebook users included 60.3% females with an age range of 18-27 years (means = 22.47±2.91). Results suggested that extraversion ($\beta=.12$, $p<.05$) and neuroticism ($\beta=.15$, $p<.05$) predicted Facebook usage (intensity), and effects of neuroticism is moderated by secure attachment style (β interaction = $-.23$, $p<.01$). Social interaction on Facebook was predicted by extraversion ($\beta=.14$, $p<.05$) and the effects was moderated by secure attachment style (β interaction = $-.16$, $p<.05$). It is concluded that computer mediated communication on social networking sites is a complex phenomenon and shall be studied as a consequence of interaction between personal and environmental factors.

Keywords: Social networking; Computer mediated communication; Personality; Adult attachment styles; Facebook involvement

JEL Classification: Z 000

1-2Institute of psychology, Quaid-e-Azam University, Islamabad, Pakistan

3-Institute of Business Management, Karachi, Pakistan

Introduction

Psychological needs instigate humans to strive and struggle for their fulfillment throughout their life span (Ellison & Lampe, 2007). Belongingness is a basic psychological need. To belong to a place or person, one has to develop and maintain social relations. In a social setup individuals constantly try to belong and attach to others through communication and social interaction. Technological advancement has changed the interaction patterns by globalizing communication. The modern society now offers vast modes of interaction from cellular services to electronic mediated.

Internet has opened many new avenues through which people can communicate and socialize. Among these social networking sites-SNSs (i.e., Facebook, twitter etc.) are playing an imperative part. Four major characteristics distinguish computer mediated communication (CMC) from face to face (FtF) communication. These includes (1) increased inscrutability; (2) reduction of importance of physical appearance (3) alleviation of finding others and (4) greater control over the time and place of the interaction (Amichai-Hamburger, 2007; McKenna, Green, & Gleason, 2002). These distinguished factors of CMC have played a major role in boosting SNSs' communications with the potential for a unique psychological environment but also may make online social interaction appealing to particularly people suffering from social anxieties (Buote, 2009).

Research literature on interpersonal relationships in daily livings¹as well as virtual world has examined peoples' interactions a byproduct of their personality traits.²Facebook offers instant access to social interaction with a myriad of people (Urista, Dong, & Day, 2009). Personality factors influences the use of Facebook (Orr et al., 2009; Ryan & Xenos, 2011; Swickert et al., 2002; Wolfradt & Doll,

¹(Berry, Willingham, & Thayer, 2000)

²(Ryan & Xenos, 2011; Swickert, Hittner, Harris, & Herring, 2002;

Wolfradt & Doll, 2001)

2001). Individuals may interact with others on the basis of their personality characteristics (Amichai-Hamburger & Vinitzky, 2010; Ross et al., 2009). Neuroticism has a tendency towards internet usage for social interaction (Correa, Hinsley, & De Zuniga, 2010; Wolfradt & Doll, 2001). Literature has also proposed that openness to experience is the personality factor most likely to contribute in the usage of Facebook to seek out new and novel experiences (Correa et al., 2010). Contrary to this, recent research presented a vague role of openness to experience in Facebook usage (Ellison, Steinfield, & Lampe, 2011; Ross et al., 2009). Others reported that conscientiousness is negatively associated to the use of internet (Swickert et al., 2002).

Though recent literature has considerably focused the associations between personality traits and Facebook usage³, it seems unrealistic to elucidate SNSs communication solely based on personality traits (Klein, Lim, Saltz, & Mayer, 2004). Apart from the potential influence of personality traits, significant other the factors may contribute in SNSs communication. The purpose of the present study is to investigate factors effecting SNSs communication especially on Facebook in correspondence to FtF communication.

Literature shows that individual adopt different modes of communication on the basis of their attachment patterns (Ellison & Lampe, 2007). Individual with adult attachment styles might prefer diverse ways of social interaction (FtF and CMC) (Baldwin, Keelan, Fehr, & Koh-Rangarojoo, 2000). Individuals with secure attachment style have high self-esteem, and fulfilling relationships, and prefer FtF communication with others (Mikulincer & Shaver, 2007). Contrary to that, individuals with anxious attachment style have doubt, fear of rejection, and worry that caregivers cannot be counted when needed (Cassidy & Shaver, 2008). The individuals predominated by anxious attachment style may prefer CMC.

³(Moore & McElroy, 2012; Ross et al., 2009; Ryan & Xenos, 2011)

As the avoidant individuals espouse defensive distance, denial of intimacy needs and diverting concentration away from attachment related indications and feelings (Mikulincer & Shaver, 2007), they are expected to avoid both FtF interaction as well as CMC. We assumed that people with predominantly avoidant attachment style use Facebook for non-interactive communication, only visiting others profile with commenting on others posting and profiles. It is expected that insecure individuals' need for affection and need to belong to others may be met by CMC on SNSs like Facebook. On the contrary, individuals with secure attachment patterns may either don't have any interest or don't perceive any importance of independency and privacy provided on Facebook (Rao & Madan, 2013).

Literature showing personality traits and attachment patterns suggest that individuals with secure attachment patterns are also high on extraversion, agreeableness, openness and conscientiousness(Cassidy & Shaver, 2008). On the contrary, individuals with insecure attachment patterns (anxious and avoidant) are high on neuroticism(Cassidy & Shaver, 2008). As mentioned above, previous research has addressed SNSs usage independently with personality traits and attachment styles. Though associations between personality traits and attachment styles are also well established, the paucity to elucidate individuals' social interaction on SNSs remains inadequately answered partially due to not addressing the interaction patterns. Present study is aimed to investigate interacting patterns of associations between personality dimensions and adult attachment styles to elucidate individuals' behaviors on SNSs particularly on Facebook. We will address individuals' involvement in Facebook by focusing on the intensity of Facebook usage (i.e., time individuals spend on Facebook), and social interaction on Facebook. The study is aimed to determine unique combinations of personality traits and attachment styles leading to choose the alternative means of communication, and to develop an understanding of excessive use or normal use of SNSs i.e., Facebook. It will help to understand individuals' choice for adopting alternative

means of communication to meet the basic human need of belonging by forming and maintaining potentially close, meaningful relationships which they probably were not able to achieve otherwise. The hypothesis of current study in adult attachment styles (secure, anxious and avoidant) moderate the effect of personality traits and the autonomy on Facebook usage (intensity, social interaction).

Method

Sample and procedure

A total of 383 adult university students (approximately 60% females), age ranged 18-27 year with mean \pm SD age (22.47 \pm 2.91 years) were recruited from different universities for the present study. Before taking informed consent, participants were briefed about the purpose of the research and anonymity of the data. Those who agreed to participate were provided with questionnaire booklet containing instructions, informed consent form, demographic sheet and instruments of the study. Participants were approached individually through Purposive sampling and on the criteria of Facebook usage

NEO-FFI (Five Factor Inventory). Personality traits were accessed on NEO-FFI developed by Costa and McCare (1992). The measure is based on five factor model, has well established psychometrics and is widely used to access personality traits. It consists of 60-items with five point Likert scale, and access personality on five dimensions namely, Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness with 12 items each. The Chronbach's alpha reliability of the study sample for dimensions of NEO-FFI appeared to be .70, .61, .60, .50, and .70 for Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness respectively. Research is also indicating and supporting present study that Agreeableness subscale of the NEO-FFI is low in most situations compare to other subscales (Caruso, 2000).

Adult Attachment Scale. To assess adult attachment styles (Collins & Read, 1990) was used which consist of 18-items with 5-point Likert scale measuring three dimensions of attachment namely secure attachment style, anxious attachment style, and avoidant attachment style. The Cronbach alphas for the subscales in present study are .53, .62, and .60 respectively. With medium to high internal consistency, the scale is widely used and has well established psychometrics though (Ravitz, Maunder, Hunter, Sthankiya, & Lancee, 2010).

Facebook Usage Questionnaire. Participants' behavior on SNSs was accessed on Facebook usage questionnaire (Ross et al., 2009). The questionnaire consisting 19 questions some of which further have up to a maximum of 4 sub-questions, measures Facebook usage both qualitatively and quantitatively. Questions on the quantitative part can be further divided into two dimensions i.e., intensity of usage, and social interaction on Facebook. Questions probing participants' interest and involvement in Facebook were grouped together as Intensity of Facebook usage scale. The scale consisted 7-items on a 5-point Likert scale accessing Facebook usage intensity. Example items include "I feel I am part of Facebook community". Another grouping of items was extracted based on social interaction on Facebook. The subscale named Social interaction consisted of 14-items with a 9-point Likert scale covering various social activities on Facebook from personal private communication (i.e., Facebook chat) to open sharing (i.e., messages, comments, pictures, and wall postings etc). In the present study, Chronbach's alpha reliability of the Facebook intensity is .90 and Facebook social interaction is .86.

Results

Preliminary inspection of the data indicated that all study variables scores normally distributed (i.e., Skewness & Kurtosis < 1). Distribution across gender suggested significant differences on three personality dimensions. As presented in table 1, females scored higher

on openness, agreeableness, and conscientiousness (i.e., mean differences 1.58, $p < .01$; 1.27, $p < .05$; and 2.5, $p < .01$ respectively). On the other hand, gender differences on adult attachment styles indicated high male scoring on two attachment styles i.e., secure attachment style (mean difference 0.95, $p < .01$), and anxious attachment style (mean difference 1.41, $p < .01$). A significant difference on Facebook usage for social interaction (mean difference 8.90, $p < .01$) also indicated more male Facebook usage for social interaction as compared to their female counter parts.

Table 1

Cronbach's alpha reliability coefficients and Correlations of NEO-FFI, Adult Attachment Styles (AAS), and Facebook Usage Questionnaire (FBUQ) (N=383)

No	Variables	o. item	N of	ewness	Sk				0	1	2	3					
	Age					.10	.06	.16**	.03	.07	.17**	.02	.08	.06	.19**	.07	.12*
	Gender						.08	.01	.04	.19**	.13*	.21**	.14**	.19**	.02	.07	.19**
	Income						.08	.05	.04	.01	.08	.01	.10*	.05	.03	.08	
	Neuroticism		70	.01				.19**	.11*	.27**	.27**	.16**	.43**	.28**	.10	.07	
	Extraversion	1	61	.02					.24**	.16**	.38**	.31**	.07	.13*	.10*	.06	
	Openness		60	.17					.09	.29**	.07	.12*	.09	.04	.05		
	Agreeableness	2	50	.31						.24**	.16**	.35**	.28**	.12*	.12*		
	Conscientiousness	2	70	.07						.18**	.17**	.03	.01	.07			
	Secure Attachment		80	.02						.08	.21**	.01	.05				
0	Anxious Attachment		53	.19						.24**	.04	.09					
1	Avoidant Attachment		62	.44							.07	.10*					
2	Facebook usage (Intensity)		60	.15								.44**					
3	Facebook usage (Social interaction)	4	90	.30													

* $p < .05$, ** $p < .001$

M1 & M2 Control variables (Age, Gender, and Monthly income); Predictors (personality dimensions); Moderators (Attachment styles)

M3. Control variables (Age, and Monthly income); Predictors (personality dimensions); Moderator (Gender)

Table 2
Descriptive statistics of demographic and all study variables across gender (N = 383)

Study variables	Male		Female		CI (383)	95%		Cohen's d
	M(n)	D	M(n)	D		L	L	
Age	22.8 2 (152)	.01	22.2 23 (229)	.82	.92	.01	.19	
Family income	5.58 (151)	1.02	7.6 6 (231)	3.68	.56	4.69	.53	15
Neuroticism	23.9 0 (152)	.10	23.8 88 (231)	.71	.02	1.08	.13	01
Extraversion	37.6 1 (151)	.61	38.0 05 (231)	.05	.80	1.53	.64	08
Openness	22.5 4 (150)	.14	24.0 12 (231)	.08	.66**	2.43	.72	37
Agreeableness	31.0 3 (148)	.81	32.0 30 (229)	.62	.54*	2.25	.28	25
Conscientiousness	37.4 4 (152)	.82	39.0 95 (230)	.83	.11**	3.70	1.31	42
Secure attachment style	16.8 5 (151)	.25	15.0 90 (231)	.22	.77**	.27	.61	28
Anxious attachment style	14.9 5 (149)	.45	13.0 54 (230)	.51	.85**	.68	.12	39
Avoidant attachment style	15.5 8 (151)	.44	15.0 46 (231)	.89	.31	.64	.88	03
Facebook usage (Intensity)	20.4 4 (148)	.95	19.0 39 (230)	.56	.36	.46	.57	13
Facebook usage (Social Interaction)	64.5 8 (150)	2.70	55.0 68 (226)	2.28	.75**	.23	3.57	38

As was expected, bivariate correlation presented in table 1 suggest significantly negative correlation between age and Facebook usage for social interaction ($r = -.12$, $p < .05$). Age also appears to correlate positively with agreeableness ($r = .17$, $p < .01$), and negatively with neuroticism and avoidant attachment style ($r = -.16$, and $r = -.20$, $p < .01$ respectively). In confirmation with differences in study variables across gender, bivariate correlation also presented positive correlation of gender with three personality dimension (i.e., openness, agreeableness, and conscientiousness) and negative correlation with two attachment styles (i.e, secure, and anxious) as well with Facebook usage for social interaction. Monthly family income only negatively correlated with anxious attachment style ($r = -.10$, $p < .05$). Correlations between personality dimensions and attachment styles were low to medium and in expected directions. Secure attachment style negatively correlated with neuroticism ($r = -.16$, $p < .05$) whereas positively

Table 3

Hierarchical multiple linear regression analysis to predict Facebook usage (intensity and social interaction) from interaction between personality traits and attachment styles (N = 383)

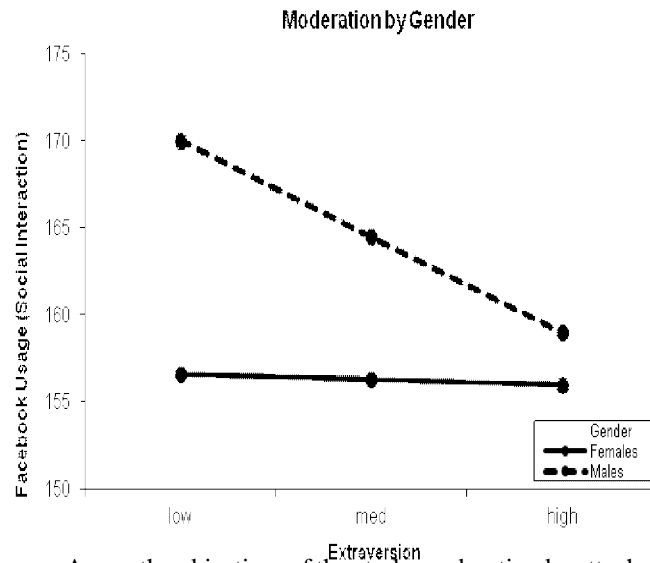
Predictors	Dependent variables					
	Usage M1	Facebook (Intensity)		Facebook Interaction		Usage (Social M3)
		M2		M3		
		R ²		R ²		
Step 1	013		056		018	
Control variables						
Step 2	043		028		055	
Neuroticism		.12*		.04		0.11
Extraversion		.15*		.14*		0.06*
Openness		.04		.01		.04
Agreeableness		.10		.06		.11
Conscientiousness		.03		.03		0.01
Secure Attachment Style		.01		.08		
Anxious Attachment Style		.05		.03		
Avoidant Attachment Style		.05		.06		
Gender						0.08**
Step 3	063		036		016	
Neuroticism x Secure attachment style			.23**			
Extraversion x Secure attachment style				.16*		
Extraversion x Gender						.37
Total R ²	.119		.121		.088	

correlated with other personality dimensions (r range = .16 to .31, $p < .01$) except agreeableness. Anxious and avoidant attachment styles positively correlated with neuroticism ($r = .43$, and $r = .28$; $p < .01$, respectively). Anxious attachment style negatively correlated with all other personality dimension (r range = $-.12$ to $-.35$, $p < .05$) except extraversion whereas avoidant attachment style negatively correlated with two personality dimensions i.e., extraversion ($r = -.13$, $p < .05$), and agreeableness ($r = -.28$, $p < .01$). In contradiction to our expectation Facebook usage didn't relate to adult attachment style though

Facebook usage (intensity) was positively related to extraversion ($r=.10, p<.5$), and negatively related to agreeableness ($r=.12, p<.05$). Social interaction on Facebook was only negatively related to agreeableness.

Figure 1:

Figure presenting moderating effect of gender for the relationship between extraversion and Social interaction on Facebook



As per the objectives of the study moderation by attachment styles on the relationship between personality dimensions and Facebook usage were conducted through multiple linear regression analysis. In the first step demographics (i.e., age, gender, and monthly family income) were entered in regression equation. In the second step all five personality dimensions along with all three attachment styles were entered and in the third step all fifteen interaction (5-IVs * 3-M) were entered in the regression equation. All interactions were tested simultaneously to control covariance between predictors and moderators and to precisely estimate effect of interactions. Separate analyses were conducted for Facebook usage (i.e., intensity, and social interaction).

The results presented in table 3 suggested moderation by secure attachment style for the effect of neuroticism on Facebook intensity (β interaction = $-.23$, $p < .01$) explaining 6.3% additional variance in Facebook usage (involvement). Secure attachment also moderated effect of extraversion (β interaction = $-.16$, $p < .05$) on Facebook usage (social interaction), and explained additional variance (3.6%) of social interaction behavior of Facebook users. Mod graphs were formulated to elaborate the moderation patterns which indicated interesting patterns. As presented in Figure 1, there appeared a positive relationship between neuroticism and Facebook usage (intensity) for individuals with low secure attachment suggesting that neurotic individuals with low secure attachment styles tend to get more involved in Facebook. Contrary to that, the relationship between neuroticism and Facebook usage appeared to be negative for individuals with high secure attachment style. Similar patterns also appeared for the relationship between extraversion and Facebook usage (social interaction). Figure 2 suggested a steep positive relationship between neuroticism and Facebook usage (social interaction) for individuals with low secure attachment and the strength of the relationship decreases as secure attachment style increases reaching almost to a straight line for individuals with high secure attachment style. This suggested that extroverts with low secure attachment styles tend to have plenty of social interaction on Facebook, and this interacting behavior decreases to a level of almost no relationship for individuals having a high level of secure attachment style. In other words, for individuals with high secure attachment style, extraversion doesn't predict social interaction behavior on Facebook.

Figure 2:
Figure presenting moderating effect of secure attachment style for the relationship between extraversion and non-interactive involvement on Facebook

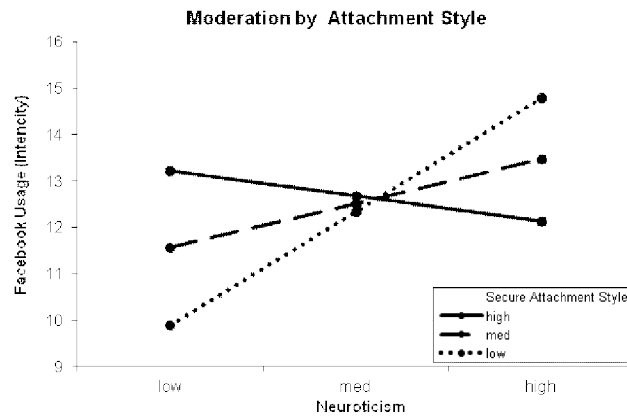
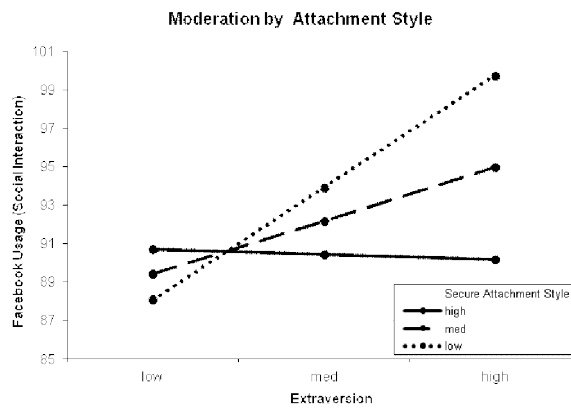


Figure 3:
Figure presenting moderating effect of secure attachment style for the relationship between extraversion and Social interaction on Facebook



Discussion

The Purpose of the present study was to elaborate CMC on social networking sites SNSs, particularly on Facebook. The study is aimed to determine individuals' involvement and social interaction behavior on SNSs (i.e., Facebook usage – intensity, and social interaction) based on distinguished characteristics of CMC (Amichai-Hamburger, 2007; McKenna et al., 2002). Facebook is the most popular and fastest growing social network. Though studies have tried to explain individuals' behavior on Facebook; most of the empirical literature included one-dimensional models i.e., explaining individuals' involvement and communication on Facebook using independent predictors. We assumed communication on social networking sites are as complex as is face to face communication and to explain individuals' behavior on SNSs, it is necessary to develop models parallel to FtF communication.

The study is intended to add into the existing literature on explaining individuals' involvement and interaction on Facebook using an interactive approach between predictors. In addition to exploring Facebook usage as an outcome of personality dimensions, and adult attachment styles, we assumed that attachment styles interact with personality dimensions to serve distinguished characteristics of CMC. In confirmation with existing literature, a preliminary analysis of our data suggested that Facebook involvement is positively related to extraversion (Wehrli, 2008) and negatively related to agreeableness. It can be explained that extraverts have a higher need for social encouragement and large networks, so they are more involved in Facebook whereas agreeable individuals might not essentially be driven to ascertain an on-line connection (Swickert et al., 2002). Individuals scoring low on agreeableness are being self-centered, spirited, irritable, and skeptical of other's purpose and being more involved on SNSs may better serve their purpose. Our results are in contradiction with studies reporting agreeableness as central characteristic of individuals aiming for proactive friendship on

Facebook (Klein et al., 2004). Individuals scoring high on agreeableness may prefer more direct ways of communication which is also supported by a negative relationship between agreeableness and social interaction on Facebook in our study. Our results that indicated a positive relationship between avoidant attachment style and social interaction on Facebook, confirmed our assumptions based on second and third characteristic of SNSs' communication i.e., reduction of importance of physical appearance, and alleviation of finding others (Amichai-Hamburger, 2007; McKenna et al., 2002). These two characteristics, social interaction on Facebook might be a means of choice for individuals with predominately avoidant attachment styles.

On the basis of second the characteristic distinguishing CMC from FtF communication i.e., reduction of importance of physical appearance (Amichai-Hamburger, 2007; McKenna et al., 2002); we assumed that females may score high on Facebook social interaction. Contrary to our assumption, preliminary analysis suggested that social interaction on Facebook is high among males compare to females. An explanation might be the absence of significant difference on extraversion personality trait in the study sample. Studies suggest that usually males are high on extraversion (Lynn & Martin, 1997) whereas in our sample there was no significant difference on extraversion across gender. It can be concluded that exaggeration in males score for social interaction on Facebook might be due to low scores of males on extraversion personality trait. Figure 1 depicting moderating role of gender for the relationship between extraversion and Facebook usage for social interaction confirms our interpretation. The figure suggests a steep decrease in Facebook usage for social interaction as extraversion increases in male participants yet for females' extraversion personality trait appears to show no influence on Facebook usage for social interaction.

In confirmation with earlier research, though our results showed a direct effect of extraversion and neuroticism (Wolfradt &

Doll, 2001) on Facebook usage, we assumed that the relationship is not that simple. As we expected secure attachment style moderated the effect of neuroticism on Facebook (intensity). The moderating patterns confirmed our assumptions. As is presented in Figure 2, the results suggested that with low levels of secure attachment, neuroticism positively predicted Facebook usage and the strength of prediction decreased as the secure attachment increased. Even, there appeared a negative relationship between neuroticism and Facebook usage under high levels of secure attachment. In other words, neuroticism is not a definite predictor of increase in Facebook involvement as is presented in previous research, rather it interacts with other personal and environmental factors to effect individuals involvement and behavior on social networking sites.

Finally, though in confirmation with earlier research (Wolfradt & Doll, 2001), results suggested that extraversion predicts social interaction on Facebook yet the secure attachment style played a major role. The positive relationship between extraversion and Facebook usage is no surprise when explained in relation to secure attachment style. As is evident from Figure 3, extravert individuals prefer to use computer mediated communication on social networking sites only if they have low secure attachment style. This also explains the confusion aroused in preliminary analysis and confirms our assumption regarding individuals' communication behaviors on social networking sites. As is evident from Figure 3, the relationship between extraversion and Facebook social interaction decreases with an increase in secure attachment style and even at the high level of secure attachment style, the relationship become negative, suggesting that extrovert individuals with a secure attachment style may prefer face-to-face communication as compare to computer mediated communication. Personality traits and attachment patterns were assessed only with self-report measure but further studies should explore hidden factors that may be reflected by qualitative methods.

References:

Amichai-Hamburger, Y. (2007). Personality, individual differences and Internet use. In A. Joinson, K. Y. A. McKenna, T. Postmes & U. D. Reips (Eds.), *Oxford handbook of Internet psychology* (pp. 187-204). Oxford, UK: Oxford University Press.

Amichai-Hamburger, Y., & Vinitzky, G. (2010). Social network use and personality. *Computers in Human Behavior, 26*(6), 1289–1295. doi: org/10.1016/j.chb.2010.03.018

Baldwin, M. W, Keelan, J. P. R, Fehr, B., Enns, V, & Koh-Rangarojoo, E. (2000). Social cognitive conceptualization of attachment working models: availability and accessibility effects. *Journal of Personality and Social Psychology, 71*(1), 94-104. doi: org/10.2224/sbp.2005.33.1.57

Berry, D. S., Willingham, J. , & Thayer, C. A. (2000). Affect and personality as predictors of conflict and closeness in young adults' friendships. *Journal of Research in Personality, 34*(1), 84–107.

Buote, V. M. (2009). Exploring similarities and differences between online and offline friendships: The role of attachment style. *Computers in Human Behavior, 25*(2), 560-567. doi: org/10.1016/j.appdev.2012.08.001

Caruso, John C. (2000). Reliability generalization of the NEO personality scales. *Educational and Psychological Measurement, 60*(2), 236-254.

Cassidy, J., & Shaver, P. R. (2008). *Handbook of attachment: theory, research, and clinical applications* (Vol. 117). New York: The Guilford Press.

Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology, 58*(6), 644-663.

Correa, Teresa, Hinsley, Amber Willard, & De Zuniga, Homero Gil. (2010). Who interacts on the Web?: The intersection of users' personality and social media use. *Computers in Human Behavior, 26*(2), 247-253.

- Costa, P. T., & McCrae, R. R. (1992). *Four ways positive factors are basic. Personality and Individual Differences* (Vol. 13).
- Ellison, N. B., & 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. doi: 10.1177/1461444810385389
- Ellison, N. B., Steinfield, C., & Lampe, C. (2011). Connection strategies: Social capital implications of Facebook-enabled communication practices. *New Media & Society*, 13(6), 873-892.
- Klein, K. J., Lim, B.-C., Saltz, J. L., & Mayer, D. M. (2004). How do they get there? An examination of the antecedents of centrality in team networks. *Academy of Management Journal*, 47(6), 952-963. doi: 10.2307/20159634
- Lynn, Richard, & Martin, Terence. (1997). Gender differences in extraversion, neuroticism, and psychoticism in 37 nations. *The Journal of social psychology*, 137(3), 369-373.
- McKenna, K.Y. A., Green, A., & Gleason, M. (2002). Relationship formation on the Internet: What’s the big attraction? *Journal of Social Issues*, 58(1), 9-31. doi: 10.1111/1540-4560.00246
- Mikulincer, M., & Shaver, P. R. (2007). Attachment theory and affect regulation: The dynamics, development, and cognitive consequences of attachment-related strategies. *Motivation and Emotion*, 77(1), 77–102. doi: 10.1177/0265407509360908
- 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. doi: org/10.1016/j.paid.2012.10.009
- Orr, E. S., Sisic, M., Ross, C., Simmering, M.G., Arseneault, I. M., & Orr, R. R. (2009). The influence of shyness on the use of Facebook in an undergraduate sample. *Cyber Psychology & Behavior* 12(3), 337-340. doi: 10.1089/cpb.2008.0214
- Rao, G., & Madan, A. (2013). A Study Exploring the Link between Attachment Styles and Social Networking Habits of Adolescents in Urban Bangalore. *International Journal of Scientific and Research Publications*, 3(1), 2250-3153.

Ravitz, Paula, Maunder, Robert, Hunter, Jon, Sthankiya, Bhadra, & Lancee, William. (2010). Adult attachment measures: A 25-year review. *Journal of Psychosomatic Research*, 69(4), 419-432.

Ross, C., Orr, E. S., Sisc, 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. doi: org/10.1016/j.chb.2008.12.024

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. doi: 10.1089/109493102753770507

Swickert, R. J., Hittner, J. B., Harris, J. L., & Herring, J. A. (2002). Relationships among Internet use, personality, and social support. *Computers in Human Behavior*, 18(4), 437-451. doi: org/10.1016/j.chb.2008.12.024

Urista, M. A., Dong, Q., & Day, K. D. (2009). Explaining why young adults use MySpace and Facebook through uses and gratifications theory. *Human Communication*, 12(2), 215-229. doi: org/10.1016/j.chb.2010.11.020

Wehrli, S. . (2008). Personality on social network sites: An application of the five factor model. *Eth zurich sociology working papers, ETH Zurich. Predictors*, 37(1), 33-54. doi: org/10.1016/j.chb.2011.09.009

Wolfradt, U., & Doll, J. (2001). Motives of adolescents to use the Internet as a function of personality traits, personal and social factors. *Journal of Educational Computing Research*, 24(1), 13-27. doi: org/10.1016/j.chb.2008.12.024