

Personality Traits and Facebook Usage as Predictor of Aggression among Undergraduate Students

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Abstract

Role of social media is increasingly seen with respect to all parts of life and affecting work outcomes. The current study aims to predict the effect of big five personality traits (openness to experience, conscientiousness, extroversion, agreeableness, and neuroticism) and Facebook usage on aggression among students. Data was collected from 356 undergraduate students studying in universities and colleges in Punjab, Pakistan by using a stratified sampling technique. Descriptive analysis were done on SPSS and Hypothetical relationships were tested on Smart-PLS software version 4.1.0.0 by multiple regression analysis. The obtained results show that openness and neuroticism have positive correlation with aggression while extraversion conscientiousness agreeableness and Facebook usage have a negative correlation with aggression. The present study is helpful in understanding the personality traits and face book usage with their relationship with aggression in youth. The current study is important to identify the role of personality traits and usage of social media to see its relation with aggression. Future recommendations and limitations are discussed.

Keywords: *Aggression, personality traits, Facebook usage, Students, Pakistan.*

1. Introduction

Digital transformation is of increasing relevance for both practitioners and students. Modern digital technologies, services, and systems are extremely important for social development, social relationship and effecting the performance of society as a whole (Khan et al., 2024). Numerous studies have been conducted to determine that how social media usage affects students' academic motivation as well as personalities and resulted as stress, anxiety and aggression (Ramzan et al., 2023). 21st century is the era of science and technology. People with different personalities see the world and the people around differently. People of young ages are aggressive. It may have different reason like individual differences, situational factors, the environment around or the activities people are used to indulge most of their time. It is estimated that 50% of undergraduates are suffering from mental illness during their university years (Qin et al., 2023). When individuals fail to accomplish goals, it leads them to aggressiveness. Generally when people yell on others, says emotionally charged words, attack others or even when frown we think it is aggression. Aggression

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is an unpleasant response by an individual to another person and behavior involving the intention of immediate harm” (McLean et al., 2023). Aggression has interconnected with personality traits. The way a person behaves and does things is personality of a person. It is a complex of different activities (Miao et al., 2020) Different people see it differently. “An individual’s personality is what external stimuli affect (Skinner, 1988).

Traits are the permanent features of personality, repeated over time. If a person is normally relaxed over tough matters but at one occasion he is blushing and aggressive it means cool mindedness is his trait and aggressive was her state for one reason or another. Personality has various traits such as: (1) Extraversion, which is related to excitability, talkativeness, assertiveness, sociability and high amount of expression of emotions: (2) Conscientiousness is link to thoughtfulness, impulsive control and goal-directed behaviors. People with high conscientiousness are organized and mindful: (3) Openness personality domain includes characteristics such as trustworthiness, affection, altruism, kindness and other pro-social behaviors: (4) Agreeableness personality domain such as insight, imagination and people with agreeableness also have more interests: (5) Neuroticism associated with neurotic characteristics are having high mental illness, anxiety and emotional instability (Ernst-Linke et al.,2023). These traits are interlinked aggression and usage of social media as aggression is the act of harming others in a way self-satisfaction is gained of the one who is loaded with stressful emotions. It can be in form of verbal attack or physical injuries. ”Personality involves all the behaviors and actions people show in order to present his/her self.” In addition, Facebook usage: “Activities done over social networking site, Facebook (Shahid et al., 2024).

Individual personalities and behaviors socially connected with social media that has influenced on each other (Armstrong-Carter et al., 2023). Social media .e.g. Facebook has important in this regard (Van der Schyff & Flowerday,2023). Facebook is most popular and widely used application among all networking sites. In 2004, Mark Zuckerberg founded this application to connect with his fellows. (Park et al., 2023. Facebook is being used for different purposes. Chat, video calls, profiles, groups and pages are basic features used in Facebook for connecting with people. People use it to connect with family, friends, acquaintances and anyone else (Sayeed et al., 2023). Most of the students using Facebook have modified their routines as well as their thought patterns, which become reason of aggression (Geusens et al., 2023).

1.1 Rationale for the study

The study is very good to find out the reasons behind aggression, as the university students are suffering from aggression and such activities are being affected badly on their mental health and academic performance, the study is useful in finding out aggression. And also finds that either the high rate of aggression is because of personality traits or Facebook usage or some other factors are responsible (Sarman, & Tuncay, 2023). Social networking sites, Facebook here one of variable of our concern, make people aggressive over different activities such as violent behaviors, jealousy, harsh talks with others and debates over topics in which people have opposing views. In past few years a number of researches had been done to analyze personality in order to understand the dealings and effects on situation. Researches also reveal the correlation of personality and Facebook use indicating that extroverts are more indulged in updating status and to interact with people.(Zhang et al., 2023). Face book play important role in shaping personality factors that enable individuals to spend life routine (Van der Schyff & Flowerday,2023).

2. Literature Review

2.1 Big Five Personality Traits and Aggression

Empirical grounding for this study are based on the following researches being included. Till now there is no research done on the exact topic of research under study but researches between any two of them are giving direction to the current study. Looking into the history of these variables it is obvious that personality and aggression are being used since last century. In history, there is a little evidence over this topic. Comparably relationship of aggression and personality is judged more than the relation of aggression to the newer social networking site (Perez et al., 2023). Similarly, Nocera et al. (2022) conducted research on personality traits predicting anger and its expression. Students filled out a personality test and anger expression inventory. The results of the study predict significantly the relation between five factor personality traits (extraversion, neuroticism, agreeableness, conscientiousness and openness) and trait anger along with expression styles (anger-in, anger-out and anger control). This study helped the researcher to understand the effects of big five personality traits.

Consequently, Li et al. (2022) worked on relationship of aggression and personality traits illustrating that how violent behaviors and emotions affects directly or indirectly. Different dimensions produced different results. Openness and extraversion affected aggression directly and indirectly but violent behaviors had only indirect relation. Neuroticism also affected aggression both directly and indirectly but had no effect in case of violent behavior. This study supports current study in direct relation of openness and aggression. Personality was accurately judged and depressive symptomology was also found in status updates. It was revealed that people tries to manage impression upon others. Research was helpful for counselors and friends to judge people by their status updates. This study helped the researcher to know the effect of activities over Facebook in impression management and mood (Gwarzo & Danja, 2024).

Moreover, Hossain et al. (2022) did a research on personality trait, extraversion, to know how it effect on use of Facebook. In that comparative study, extroverts and introverts were analyzed to check out the difference between their experiences of Facebook usage. Results of the research indicated a significant positive relationship among extraversion, self-efficacy, loneliness, self-esteem and number of friends. Multiple regression analysis showed that extraversion is more typical in number of friends of a person and his/her personality. Researcher noticed the use of big five personality traits and regression analysis and used in current study.

2.2 Facebook Usage and Aggression

Aggression, personality traits and Facebook usage; researchers' topic of concern was not studied under single heading in past. However, researches between two of them helps in bridging relationship of these variables (Hussain et al., 2023). In case of Facebook and aggression, experimental and comparative studies were conducted for aggression and content analysis was used for estimating Facebook usage and to judge activities over Facebook in a better way. Literature demonstrates that social networking sites make people more aggressive. Studies revealed that non-violent content over social media also induces aggression, not physical but other forms of aggression Effects of Facebook narcissistic personality traits on aggression. Results

showed that both were positively correlated (Coban et al., 2023). By the same token Koole et al. (2022) conducted a research to find out what a status update can tell us about someone's personality. In the first phase, participants filled out Big Five Personality Inventory and Beck Depression Inventory and also saved their Facebook profile activities of three months. In the second phase, Facebook profiles were judged by rater for personality. In the third phase, coding was done over profiles for information like number of status updates, number of friends, sadness and sickness to analyze rate of depression (Thorell et al. 2024).

Furthermore, Ashiru et al. (2022) described indirect aggression produced by media. Study was conducted on popular television programs famous among Britain adolescents. Content analysis was done over 224 hours of those programs selected randomly. Physical and verbal aggression types were seen. Results showed that girls were more intended to have indirect effect while males were more representative of physical aggression. It was obvious that only the use of social media, no matter if it is non-violent stuff, fosters the intention of harm. Researchers found this study contrary as well. The study determined relational and physical aggression along with behavior. It was seen that girls were more exposed to relational aggression and boys were with high physical aggression. Media did affect their thought patterns and, meanwhile rate of aggression significantly.

3- Methodology

3.1 Participants and Procedure

The sample of the current study consisted of 356 undergraduate students from colleges and universities in Pakistan. Among them, 146 were females, and 210 were males. The age range was 19-26. For details of demographic information of participants, see the result section. Students were given a packet containing a consent form, demographic form, and questionnaires for measuring aggression (BPAQ) and personality traits (USMaP-i). Consent forms were signed by them after reading it. Those who did not agree to participate were not compelled. Students were asked to fill them out sincerely and completely.

3.2 Sampling technique

The present study has adopted cross cross-sectional research design. Stratified sampling techniques were used for selecting the desired sample in select departments.. From the main departments working in medical institutes in Lahore were Anatomy, Physiology, Biochemistry, Forensic Medicine, Pharmacology, Pathology, Community Medicine, Surgery, Orthopedics, Anesthesia, Medicine, Dermatology, Psychiatry, Behavioral Sciences, and Medical Ethics.

3.3 Tools for measurement

3.3.1 Buss-Perry Aggression Questionnaire (BPAQ)

Buss and Perry designed this 29-item scale in 1992. This is a gold standard to measure aggression. There are four subscales of aggression in BPAQ. 1 to 9 items are of physical aggression, 10 to 14 measures verbal aggression, 15 to 21 measures anger, and the last eight items

measured hostility. The internal consistency of this scale is 0.89. BPAQ is highly reliable, with a reliability of 0.80.

3.3.2 USM Personality Inventory (USMaP-i)

Yusoff et al. (2010) designed the USM personality inventory in 2010 to measure the big five dimensions of personality. It is a 66-item inventory. The dimensions of personality are extroversion, conscientiousness, openness, agreeableness, and neuroticism. 12-items for measuring each personality dimension are included in the scale along with six 6-items of faking index. . The reliability analysis of USMaP-i shows high internal consistency as Cronbach's alpha coefficient value is 0.723.

3.3.3 Facebook usage questionnaire

A Facebook usage questionnaire was used. This questionnaire consisted of 18 questions relating to Facebook usage, such as “On average, how much time per day do you spend on Facebook?”, and was adapted from the Facebook Questionnaire, which has been successfully used by Ross et al. (2009).

3.3.4 Ethical consideration

To fulfill the demand of originality of work, an anti-plagiarism test was applied. Buss Perry's aggression questionnaire and USM personality inventory were in public domain. Consent was taken from participants as well to take part in the research.

4. Results

4.1 Descriptive Statistics

In results section, data analysis was done into two parts. First descriptive statistics and correlational analysis were done by using SPSS version 29. Secondly, multiple regression and hypotheses testing was done on Smart-PLS version 4.1.0.0. Descriptive of participants, correlation analysis and regression analysis is described. Under descriptive statistics section, all the demographic variables are discussed. It is found how other factors also affect the prediction of aggression.

Table 1
Descriptive Statistics

Constructs	Mean	Median	Min	Max	S.D
Facebook Usage	2.166	2.166	1.000	5.000	0.635
Aggression	1.993	1.993	1.000	5.000	0.740
Openness	3.928	3.928	1.000	5.000	1.138
Agreeableness	3.889	3.889	1.000	5.000	1.295
Extraversion	4.249	4.357	1.000	5.000	0.808
Neuroticism	2.055	2.055	1.000	5.000	0.652

Conscientiousness	3.787	3.714	1.000	5.000	1.075
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Table 1, shows the mean median minimum, maximum and standard deviation values of big five personality traits, Facebook usage and aggression.

4.2 Co-relation Analysis

Table 2: Correlation analysis

	Aggression	Extraversion	Openness	Conscientiousness	Agreeableness	Neuroticism	Facebook usage
Aggression	1	-.046	.112	-.159*	-.161*	.357**	-.058
		.562	.156	.049	.041	.000	.456
Extraversion	-.046	1	.22**	.292**	.154*	-.29**	.093
	.562		.003	.000	.037	.000	.202
Openness	.112	.218**	1	.282**	.500**	-.068	.057
	.156	.003		.000	.000	.358	.443
Conscientiousness	-.159*	.292**	.28**	1	.223**	-.31**	-.050
	.049	.000	.000		.003	.000	.508
Agreeableness	-.161*	.154*	.50**	.223**	1	-.149*	.070
	.041	.037	.000	.003		.043	.338
Neuroticism	.357**	-.297**	-.07	-.311**	-.149*	1	-.074
	.000	.000	.358	.000	.043		.310
Facebook usage	-.058	.093	.057	-.050	.070	-.074	1
	.456	.202	.443	.508	.338	.310	

Pearson moment correlation was done to see a correlation among aggression, personality dimensions, and Facebook usage. Variables were overall aggression, extraversion, openness, conscientiousness, agreeableness, neuroticism, Facebook usage experience, and daily usage. Table 2 shows the Pearson correlation and significance of variables.

Table 3
Collinearity statistics

Constructs	VIF
Facebook Usage	1.143
Openness	2.208
Agreeableness	2.028
Extraversion	1.100
Neuroticism	1.116
Conscientiousness	2.058

The next think that is important to examine is the collinearity statistics. Values of variance inflated factors show the level of collinearity in the data set. Range of values 1 to 3 describes that there is no issue of multi-collinearity in the data. Table 3 indicates that all values of the constructs truly between below 3 which indicates the best use of data without the issue of multicollinearity.

Table 4

R-square

Test	Aggression
R-square	0.556
R-square adjusted	0.650
Durbin-Watson test	1.886

Table 4 presented the values of r-square and adjusted r square which are within range of consistency and significance level.

4.3 Regression analysis

Linear regression technique was used for finding out the predictor relation among the variables. Extraversion, openness, conscientiousness, agreeableness, neuroticism, Facebook usage experience and daily usage were the predictors in study. Overall aggression was predicate.

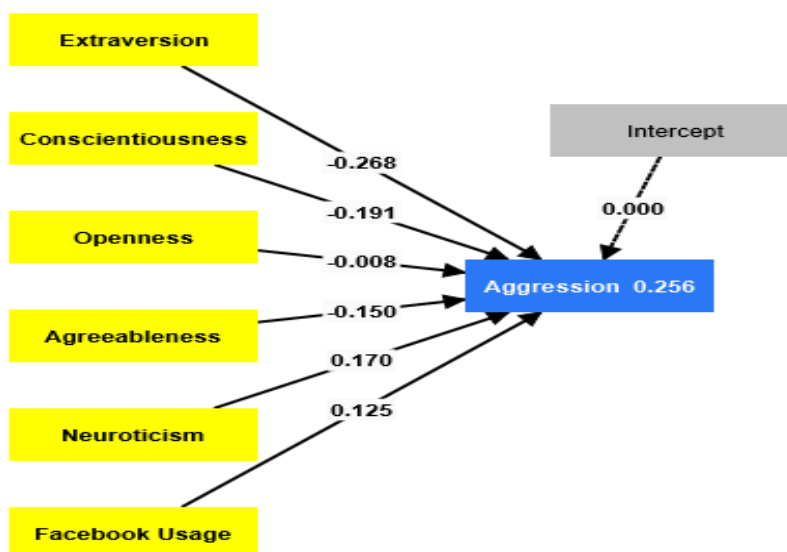


Fig 2: path diagram shows that direct impact of extraversion, conscientiousness, openness and agreeableness are inverse relation to the aggression, while neuroticism and Facebook usage

Table 5
Hypotheses Testing

Hypotheses	B	SE	T value	P value	2.5 %	97.5 %	Decision
H1: Facebook Usage->Aggression	0.125	0.039	3.731	0.000	0.069	0.223	Accepted
H2: Openness->Aggression	-0.008	0.004	-8.473	0.000	-0.016	-0.055	Accepted
H3: Agreeableness->Aggression	-0.150	0.026	-3.342	0.001	-0.136	-0.035	Accepted
H4: Extraversion->Aggression	-0.268	0.033	-8.116	0.000	-0.305	-0.186	Accepted
H5: Neuroticism->Aggression	0.170	0.028	5.101	0.000	0.118	0.267	Accepted
H6: Conscientiousness->Aggression	-0.191	0.031	-4.236	0.000	-0.193	-0.071	Accepted

have direct positive impact on aggression.

The impact of Facebook usage on aggression is positive Facebook Usage->Aggression , ($\beta = 0.125$; $t = 3.731$, $p < 0.042$), H2 describes that Openness->Aggression has reduce the aggression ($\beta = -0.008$; $t = 8.473$, $p < 0.045$), H3 Agreeableness->Aggression ($\beta = -0.150$; $t = 3.342$, $p < 0.045$). Similarly in H4 Extraversion->Aggression also indicates the inverse relationship ($\beta = -0.268$; $t = 8.116$, $p < 0.045$), H5 shows the positive relation in which Neuroticism personality

characteristics role increases the level of aggression among the students ($\beta = 0.170$; $t = 5.101$, $p < 0.045$), and H6 decline the aggression by ($\beta = -0.191$; $t = 4.236$, $p < 0.045$ and support the study hypotheses.

5. Discussion

The objective of the study was to predict aggression among university students under the effect of personality traits and Facebook usage. The relationship between the Big Five personality traits, Facebook usage, and aggression is important to observe the behaviors of individuals. Predictive role of social support, social adjustment, and academic achievement among university students are positively correlated with each. Perceived social support significantly predicted social adjustment and academic achievement, which are directly related to social media Maqbool et al., 2024. Students play an energetic role in making or breaking any society. Positive and negative feelings are felt by students in daily life, and when they go through an unjust, personal humiliation which results in psychological stress and aggression (Javaid & Mahmood, 2023). Personality traits, particularly neuroticism and agreeableness, play a key role in determining how individuals react to the platform of social media and online interactions, with some traits (e.g., high neuroticism, low agreeableness) increasing the likelihood of aggression (Rogier et al., 2024). Facebook usage, especially when it involves heavy interaction, anonymity, or social comparison, can further exacerbate these tendencies. Understanding these dynamics can help inform strategies for reducing online aggression, particularly through promoting emotional regulation and encouraging more constructive online interactions (Lin et al., 2024).

There was very weak negative correlation of aggression with Facebook usage. Overall aggression and extraversion had very weak negative correlation, $r(159) = -0.05$, $p = 0.56$. Overall aggression and openness had some correlation, $r(160) = 0.11$, $p = 0.16$. Overall aggression and conscientiousness had negative correlation, $r(152) = -0.16^*$, $p = 0.05$ and statistically significant. Overall aggression and agreeableness had negative correlation, $r(159) = -0.16^*$, $p < 0.05$ and statistically significant. Overall aggression and neuroticism had positive correlation, $r(161) = 0.36^{**}$, $p < 0.01$ and statistically significant. Overall aggression and Facebook usage experience had negative correlation, $r(167) = -0.06$, $p = 0.50$. Overall aggression and daily usage had negative correlation, $r(165) = -0.01$, $p = 0.97$. Extraversion and openness had positive correlation, $r(178) = 0.22^{**}$, $p < 0.01$ and statistically significant. Extraversion and conscientiousness had positive correlation, $r(171) = 0.29^{**}$, $p < 0.01$ and statistically significant. Extraversion and agreeableness had positive correlation, $r(181) = 0.15^*$, $p < 0.05$ and statistically significant. Extraversion and neuroticism had negative correlation, $r(182) = -0.30^{**}$, $p < 0.01$ and statistically significant. Extraversion and Facebook usage experience had positive correlation, $r(187) = 0.93$, $p = 0.20$. Extraversion and daily usage had positive correlation, $r(183) = 0.01$, $p = 0.87$. Openness and conscientiousness had positive correlation, $r(168) = 0.28^{**}$, $p < 0.01$ and statistically significant. Openness and agreeableness had positive correlation, $r(178) = 0.50^{**}$, $p < 0.01$ and statistically significant. Openness and neuroticism had negative correlation, $r(180) = -0.07$, $p = 0.34$. Openness and Facebook usage experience had positive correlation, $r(184) = 0.06$, $p = 0.44$. Openness and daily usage had negative correlation, $r(181) = -0.07$, $p = 0.36$. Conscientiousness and agreeableness had positive correlation, $r(169) = 0.22^{**}$, $p < 0.01$ and statistically significant. Conscientiousness and neuroticism had negative correlation, $r(174) = -0.31^{**}$, $p < 0.01$ and statistically significant. Conscientiousness and Facebook usage experience had negative

correlation, $r(177) = -0.05, p = 0.51$. Conscientiousness and daily usage had negative correlation, $r(173) = -0.02, p = 0.77$. Agreeableness and neuroticism had negative correlation, $r(181) = -0.15^*, p < 0.05$ and statistically significant. Agreeableness and Facebook usage experience had positive correlation, $r(185) = 0.07, p = 0.34$. Agreeableness and daily usage had positive correlation, $r(181) = 0.03, p = 0.65$. Neuroticism and Facebook usage experience had negative correlation, $r(189) = -0.07, p = 0.31$. Neuroticism and daily usage had negative correlation, $r(185) = -0.06, p = 0.40$. Facebook usage experience and daily usage had positive correlation, $r(193) = 0.04, p = 0.60$. Extraversion predicts weak negative correlation; Openness predicts positive correlation with aggression among university students, Conscientiousness predicts negative correlation. Neuroticism predicts positive correlation. The test of hypostases explained that significant direct effect of five big personality traits and face book usage on aggression among university students are significant.

6. Limitations and recommendations

The present study has several limitations. First study has included sample of university students which can be generalized in future studies in other organizations in order to see the role of personality and Facebook on aggression with other sample from different institutions. Secondly present study has used cross sectional research design. Future studies can see the effects of personality traits and Facebook on aggression by different time intervals. Thirdly quantitative method was used to figure out results. A combination of qualitative and quantitative could bring more reliable and effective results in future studies. Finally present study is specifically held on face book. Future researcher can see the other social media applications as sources of aggression for better results.

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