

Exploring the Influence of Extraversion, Neuroticism, Extrinsic and Intrinsic Motives and FoMO on Social Media Use and Addiction

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ABSTRACT

Aim of the Study: The aim of this study was to explore how personality traits (extraversion and neuroticism), motivational factors (extrinsic and intrinsic motives), and psychological influences like Fear of Missing Out (FoMO) predict social media usage and addiction.

Methodology: A quantitative approach was employed using hierarchical regression analysis on data collected from a sample of 257 university students in Islamabad.

Findings: The results revealed that extraversion, neuroticism, extrinsic motivation, and FoMO significantly predicted social media use. However, for social media addiction, only neuroticism, extrinsic motivation, and FoMO were significant predictors. Intrinsic motivation did not significantly influence either usage or addiction.

Conclusion: The study concludes that personality traits such as neuroticism and extraversion, along with extrinsic motives and especially FoMO, are key predictors of social media use and addiction among university students. While gender initially influenced behaviour, psychological and motivational factors held stronger predictive value. These findings offer useful directions for psychological interventions and highlight the pressing need to address emotional motivations in young people's social media engagement.

Keywords: Extraversion, Neuroticism, Extrinsic and Intrinsic Motives, FoMO, Social Media Addiction.

1. INTRODUCTION

1.1 Social Media Use

Social media addiction is excessive and compulsive use of social networking sites with negative impacts on work productivity, mental health, and social relationships (Brailovskaia et al., 2022). Social media facilitates instant gratification in the form of shares, comments, and likes, which activates dopamine release in the brain habituation and addiction mechanism (Morris et al., 2023).

Article History

Received:
May 14, 2025

Revised:
July 12, 2025

Accepted:
July 23, 2025

Online:
August 5, 2025

There have been several studies around the globe that were associated with social media addiction and psychiatric problems, especially among young consumers, who will develop more levels of depression, stress, and anxiety from their online activities. For example, Andreassen et al. (2017) concluded that users with high narcissistic traits and low self-esteem were likely to develop poor social media behaviors through repetitive reinforcement offered through online activities.

Excessive use of social media leads to loss of control since individuals cannot manage their screen time, allowing it to interfere with their daily duties and responsibilities (Świątek et al., 2023).

Andreassen and Pallesen (2016) define social media addiction as a compulsive interest in social networking sites, driven by an uncontrollable urge to be connected at any time. Compulsive behavior will be evident in overinvestment of time, disrupting work, study, and social relationships. Individuals will also experience psychological distress when social media is not accessible, further solidifying dependency despite its damaging nature (Szasz, 2025).

1.2 Personality Traits

Extraversion is also one of the five broad dimensions of personality in the Big Five Personality Model characterized by outgoing, assertive, confident, energetic, and sociable behavior. Extraversion is also a good predictor of social media use and social media addiction (Ryan & Xenos, 2011).

Extraverts are inclined to social media as it provides them with an active platform where they can engage with others, share experiences, and gain social acceptance. This appeal to their intrinsic need for social interaction and external stimulation (Blackwell et al., 2017). Their frequent and extensive use of social media can, however, contribute to overdependency, as they can use virtual interactions to fulfill their social demands, thus opening them up to compulsive usage and addiction (Andreassen et al., 2016).

Several studies that have investigated behavioral addiction have established a positive relationship between extraversion and compulsive use of social media, and the assumption that very extroverted people were likely to have addictive internet use (Smirni et al., 2023).

On the other hand, neuroticism has been associated with emotional instability, insecurity, and anxiety (Peters et al., 2020). Neurotic users, based on studies, utilize social media more as a coping mechanism to confront stress and shun real-life problems. Social media provides a platform where neurotic users can express themselves openly without showing their identities. This places them at the highest risk of maladaptive use of social media and addiction (Cristadoro, 2025).

Recent research has also established that neuroticism was linked with overuse as well as maladaptive use of social media (Gugushvili et al., 2024). Those who score high on neuroticism tend to use social media like Facebook and Instagram to seek reassurance, approval, and compliments from other people. Screen-based communication is safer and more comfortable compared to face-to-face communication (Tang et al., 2015).

1.3 Motivation for Social Media Use

The reason people use social media varies and divided into two main categories: extrinsic and intrinsic motivation (Sharma & Joshi, 2021).

-Extrinsic motivation motivated by external rewards like social approbation, appreciation, status, and verification of others (Bruni et al., 2020).

- Intrinsic motivation, however, derived from internal rewards such as personal satisfaction, enjoyment, and self-expression (Morgan & Townsend, 2022).

Research shows that people use social media for extrinsic as well as intrinsic motives (Seidman, 2013). But research indicates that extrinsic motivation was more directly associated with compulsive social media use (Kim & Kim, 2019). For example, Hou et al. (2019) discovered that those who were desperate

for external validation will be more likely to develop addictive behavior on sites like Facebook and Instagram, where feedback loops (i.e., likes, comments) strengthen habitual use. Social reinforcement loop can establish compulsive use, as people continually search for validation in the form of social feedback.

The relationship between intrinsic motivation and social media addiction was less clear. Studies suggest that intrinsically motivated individuals maintain a healthier connection with social media, using it with self-regulation and mindfulness. However, in certain cases, intrinsic motivations—such as enjoyment—may contribute to problematic social media use, particularly when combined with other psychological factors (Ross et al., 2009)

1.4 Fear of Missing Out (FoMO) and Social Media Addiction

Fear of Missing Out (FoMO) was a significant psychological motivator of social media activity and addiction. It is an ongoing apprehension of missing enjoyable experiences as others do (Przybylski et al., 2013).

This apprehension makes individuals keep checking social media because they want to stay updated with their peers' lives and feel less isolated. Research has revealed that individuals with high FoMO tend to engage in excessive online interactions, and this can result in addictive tendencies once they feel they need to stay connected all the time (Elhai et al., 2016).

This study contributes to existing literature through the examination of the explanatory potential of extraversion, neuroticism, intrinsic and extrinsic motivation, and FoMO for social media use and addiction. It was important to identify such relationships to identify high-risk individuals and establish the relevant interventions to reduce the psychological consequences of excessive use of social media.

2. METHODOLOGY

2.1 Sample and Data Collection

The study selected students from NUML University, Islamabad, as the target population due to their alignment with the research criteria. University students represent a significant segment of the younger generation, who use different social media platforms commonly and were particularly sensitive to their psychological effects. This group was also in a developmental phase, where they were forming reasoning abilities and real-life experiences, making them relevant for studying social media use and addiction.

A convenience sampling technique was employed for data collection due to its ease of access, cost-effectiveness, and efficiency, making it particularly suitable for exploratory research. The study utilized a self-administered paper-and-pencil survey conducted in March 2024. After excluding incomplete responses, a sample of 257 students selected for analysis. The participants' ages ranged from 18 to 35 years.

In terms of gender distribution, 55.26% (N=142) were female, while 44.74% (N=115) were male. The survey was carried out within one month, and before its administration, the researcher provided clear instructions, addressed any concerns, and ensured participant anonymity to maintain ethical research standards.

Following ethical approval by the university's Institutional Review Board, participants completed an anonymous online survey using standard psychometric instruments. All respondents gave their consent, and the researcher also explained to them the purpose of the research (Eichenberg, Schneider, & Ruml, 2024).

2.2 Scales

2.2.1 Social Media Engagement Scale

The Social Media Engagement Scale was a 5-item measure designed to assess the frequency and intensity of an individual's social media use in daily life. Participants rated their usage on an 8-point Likert scale, ranging from 1 = "Not one day last week" to 8 = "Every day last week". The scale demonstrated acceptable reliability, with a Cronbach's alpha of 0.73.

2.2.2 Extrinsic and Intrinsic Motives Scale

To assess extrinsic and intrinsic motives for social media use, a custom 18-item scale was employed.

Social media engagement was measured through three Components

Social Interaction

Information Sharing

Self-Presentation

Intrinsic motivation was also assessed using three components:

Escapism

Relaxation

Entertainment

Each component consisted of three items, and responses were recorded on a 5-point Likert scale, ranging from 1 = "Never" to 5 = "Always". The scale demonstrated good reliability, with a Cronbach's alpha of 0.79.

2.2.3 Fear of Missing Out (FoMO) Scale

The Fear of Missing Out (FoMO) Scale was a psychological assessment instrument developed to measure the extent to which individuals experience anxiety related to the possibility of missing rewarding experiences. It evaluates the apprehension that others may be engaging in enjoyable or fulfilling activities while the individual was absent (Przybylski et al., 2013).

The scale consists of 10 items, rated on a 5-point Likert scale, ranging from 1 = "Not at all true for me" to 5 = "Extremely true for me". It demonstrated good internal consistency, with a Cronbach's alpha of 0.79.

2.2.4 Personality Traits Scale

To assess personality traits, the study utilized the Big Five Inventory (BFI), developed by John & Srivastava (1999). The scale measured two key traits:

Extraversion (8 items)

Neuroticism (8 items)

Responses were collected using a 5-point Likert scale, with ratings ranging from 1 = 'Strongly Disagree' to 5 = 'Strongly Agree.' The scale exhibited good reliability, with Cronbach's alpha values of 0.78 for Extraversion and 0.73 for Neuroticism, respectively.

2.2.5 Social Media Addiction Scale

The assessment of social media addiction was measured by using the Bergen Social Media Addiction Scale (BSMAS), developed by Andreassen et al. (2016). This 6-item scale was based on Griffiths' (2005) behavioral model of addiction, which defines addiction through six key components:

Salience

Modification

Tolerance

Withdrawal

Conflict

Relapse

Each item corresponds to one of these components, and participants rated their responses on a 5-point Likert scale, ranging from 1 = “Very Rarely” to 5 = “Very Often”. The scale demonstrated high reliability, with a Cronbach’s alpha of 0.80.

3. RESULTS

Table 1: *Gender Distribution of Participants (N = 257)*

Sr.	Demographics	Options	f	%
1	Gender	Male	115	44.74
		Female	142	55.26
		Total	257	100.00
2	Age Group	18–23	138	53.70
		24–29	100	38.91
		30–35	19	7.39
		Total	257	100.00
3	Education Level	Bachelor's (BS)	144	56.04
		Master's (MS)	96	37.35
		PhD	17	6.61
		Total	257	100.00

This table shows the demographics of respondents. In results, gender-wise distribution of university students who participated in the study shows that most of the respondents were females. Among the age group, most participants were between 18–23 years of age. Education point of view, more than half of the participants were enrolled in undergraduate programmes.

Table 2: *Hierarchical Regression Analysis Predicting Social Media Use*

Predictor	B	P
Step 1		
Gender	0.21	.01
	R ² = .045**	
Step 2		
Gender	0.19	.06
Extraversion	0.18	.05
Neuroticism	0.28	.01
	R ² = .084**	
Step 3		
Gender	0.16	.10
Extraversion	0.17	.02
Neuroticism	0.23	.01
Extrinsic Motives	0.12	.05
Intrinsic Motives	-0.11	.30
	R ² = .018**	
Step 4		
Gender	0.14	.22

Extraversion	0.23	.05
Neuroticism	0.19	.04
Extrinsic Motives	0.21	.02
Intrinsic Motives	-0.04	.75
FoMO	0.29	.01
	$R^2 = .046^{**}$	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3: Hierarchical Regression Analysis Predicting Social Media Addiction

Predictor	B	p
Step 1		
Gender	0.17	.02
	$R^2 = .026^{**}$	
Step 2		
Gender	0.14	.06
Extraversion	0.28	.03
Neuroticism	0.13	.05
	$R^2 = .082^{**}$	
Step 3		
Gender	0.12	.23
Extraversion	0.21	.02
Neuroticism	0.16	.04
Extrinsic Motives	0.23	.00
Intrinsic Motives	-0.14	.06
	$R^2 = .054^{**}$	
Step 4		
Gender	0.17	.18
Extraversion	0.13	.08
Neuroticism	0.17	.04
Extrinsic Motives	0.13	.05
Intrinsic Motives	-0.08	.46
FoMO	0.56	.01
	$R^2 = .176^{**}$	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

3.1 Social Media Use (Hierarchical Regression Analysis)

Table 2 presents the hierarchical regression predicting social media use. Step 1 shows gender as a weak predictor ($\beta = 0.21$, $p = .01$), explaining 4.5% of variance ($R^2 = .045$). In Step 2, extraversion ($\beta = 0.18$, $p = .05$) and neuroticism ($\beta = 0.28$, $p = .01$) were significant predictors, increasing the model fit to $R^2 = .084$. In Step 3, extrinsic motives ($\beta = 0.12$, $p = .05$) showed significance, whereas intrinsic motives did not. In the final model (Step 4), FoMO emerged as a strong predictor ($\beta = 0.29$, $p = .01$), raising the explained variance to $R^2 = .046$. These findings underscore the psychological drivers of social media use among students.

Step 1: Age was found to be a significant predictor, explaining 4.5% of the variance ($R^2 = .045$, $p < .01$).

Step 2: After introducing personality traits (extraversion and neuroticism), age became insignificant. Both extraversion ($\beta = 0.18$, $p = .05$) and neuroticism ($\beta = 0.28$, $p = .01$) emerged as significant predictors, increasing the explained variance to 8.4% ($R^2 = .084$, $p < .01$).

Step 3: Extraversion and neuroticism remained significant predictors, while extrinsic motivation ($\beta = 0.12, p = .05$) was also found to significantly predict social media use. However, intrinsic motivation did not show significance ($\beta = -0.11, p = .30$). The model explained an additional 1.8% of variance ($R^2 = .018, p < .01$).

Step 4: The final step introduced Fear of Missing Out (FoMO), which significantly predicted social media use ($\beta = 0.29, p = .01$). Extraversion, neuroticism, and extrinsic motivation continued to be significant predictors, while age and intrinsic motivation remained non-significant. An additional 4.6% variance was described by the final model explained, with an overall model significance of $F(1,210) = 11.12, p < .01$.

3.2 Social Media Addiction (Hierarchical Regression Analysis)

Table 3 shows the hierarchical regression predicting social media addiction. Step 1 identified gender as a weak predictor ($\beta = 0.17, p = .02$), explaining 2.6% of variance ($R^2 = .026$). With personality traits added in Step 2, extraversion ($\beta = 0.28, p = .03$) and neuroticism ($\beta = 0.13, p = .05$) significantly contributed to the model ($R^2 = .082$). In Step 3, extrinsic motives ($\beta = 0.23, p = .00$) improved the model further ($R^2 = .054$). In the final model, FoMO was the strongest predictor ($\beta = 0.56, p = .01$), highlighting its major role in explaining addiction tendencies among students ($R^2 = .176$).

Step 1: Age was a significant predictor, explaining 2.6% of the variance ($R^2 = .026, p < .01$).

Step 2: After introducing personality traits (extraversion and neuroticism), age became insignificant. Both extraversion ($\beta = 0.28, p = .03$) and neuroticism ($\beta = 0.13, p = .05$) emerged as significant predictors, increasing the explained variance to 8.2% ($R^2 = .082, p < .01$).

Step 3: Extraversion and neuroticism remained significant predictors, while extrinsic motivation ($\beta = 0.23, p < .01$) significantly predicted social media addiction. However, intrinsic motivation was not a significant predictor ($\beta = -0.14, p = .06$). The model explained an additional 5.4% of variance ($R^2 = .054, p < .01$).

Step 4: The final step introduced Fear of Missing Out (FoMO), which emerged as the strongest predictor of social media addiction ($\beta = 0.56, p = .01$). Extraversion lost significance, while neuroticism ($\beta = 0.17, p = .04$) and extrinsic motivation ($\beta = 0.13, p = .05$) remained significant predictors. Intrinsic motivation continued to be non-significant. The final model explained an additional 17.6% of variance ($R^2 = .176, p < .01$), with an overall model significance of $F(1,210) = 53.02, p < .01$.

4. DISCUSSION

The study revealed significant psychological and motivational correlates of social media use and addiction. The descriptive demographic data (Tables 1) demonstrated a representative student sample with a slight female majority and a predominance of undergraduates aged 18–23.

In terms of behaviour, social media use (Table 2) was influenced mainly by extraversion, neuroticism, and FoMO. Similarly, social media addiction (Table 3) was most strongly predicted by FoMO, followed by extrinsic motivation and neuroticism. Intrinsic motivation was not a significant predictor in either case. These findings suggest that emotional needs and external validation are key contributors to problematic social media engagement.

This aligns with prior research indicating that young users high in neuroticism or external validation tendencies may turn to social platforms to cope with anxiety or seek approval. FoMO's consistent predictive power supports the growing literature on its role in addictive online behaviours.

Previous research has identified extraversion as a significant predictor of both social media use and addiction (Wilson et al., 2010). However, findings from this study suggest that while extraversion significantly predicts social media use, it did not predict social media addiction. Extroverted individuals were more likely to use social media for information sharing, social interaction, and expanding their social circles, but they also engage in real-world social interactions, reducing their dependence on digital

platforms. This offline engagement may serve as a protective factor against developing addictive behaviors.

Conversely, previous studies have consistently linked neuroticism to both social media use and addiction (Tang et al., 2015; Andreassen et al., 2017). The present study supports these findings, as neuroticism emerged as a significant predictor of both behaviors. Neurotic individuals, often characterized by anxiety and emotional instability, may use social media as a coping mechanism to seek validation and social connection, leading to excessive engagement. Additionally, neurotic individuals often prefer solitude, which may contribute to their social media usage, as social media provides them with a safe space within which they can socialize without revealing their true personality, thus exposing them to compulsive use and subsequent addiction.

The study also investigated extrinsic and intrinsic motivation in predicting social media use and addiction. Findings indicated that extrinsic motivation predicted both significantly, but intrinsic motivation was not a significant predictor. Extrinsic motivation was linked to external rewards and approval, including self-presentation, social approval, and peer recognition (Deci & Ryan, 2010). Social media sites automatically reinforce extrinsic goals through processes like likes, comments, and shares, which can trigger habitual or compulsive use in the long run. Nevertheless, intrinsic motivation, because of internal satisfaction, creativity, and personal development, lacks the immediate reinforcement processes inherent in social media sites (Turel et al., 2014). Thus, individuals motivated by intrinsic factors were less likely to develop compulsive or addictive social media use.

One of the consequential findings of this research was the strong correlation between Fear of Missing Out (FoMO) and social media usage and addiction. FoMO was a strong psychological driver that encourages users to frequently use social media. FoMO users fear missing out on fun experiences and fear being left out of social activity. To avoid these apprehensions, they continuously check notifications, feeds, posts, events, and videos, potentially contributing to their social media addiction. Compulsive behavior can also become an addiction as users consistently seek reassurance and belonging through their online behavior.

Existing work has shown FoMO to correlate highly with compulsive use of social media (Wegmann et al., 2017). However, since FoMO was a more recently developed entity in digital participatory studies, additional work would be needed to test its longer-term correlations for social media addiction. Future investigations would need to use more multi-level and all-encompassing methodologies to investigate FoMO as a root cause of compulsive use of social media and addiction.

4.1 Limitations and Recommendations

Recent research demonstrates that FoMO significantly exacerbates anxiety and bedtime procrastination, leading to reduced sleep quality and poorer academic performance among college students (Meng, Wu, & Zhang, 2020). Gender differences in personality traits further shape these patterns: females often exhibit higher emotional reactivity to social media feedback, heightening their susceptibility to addictive engagement (Meynadier, Malouff, Schutte, & Di Placido, 2024). Algorithm-driven platforms amplify this effect by delivering personalized digital nudges—such as tailored notifications and recommendations—that enhance extrinsic motivation and prolong usage (Avram, Micallef, Patil, & Menczer, 2020). Moreover, since this study draws from a single urban university sample, its findings may not generalize across diverse or rural educational settings. Future work should adopt longitudinal or experimental designs and incorporate objective digital metrics like screen-time analytics for clearer behavioral insight (Iftikhar, Liaquat, & Shahid, 2022).

This study's primary limitation is its use of self-reported measures, which may introduce bias. The cross-sectional design also limits causal inferences. Future research should consider longitudinal approaches and include diverse age groups and geographical areas for broader applicability.

It is recommended that future studies examine intervention-based models that target FoMO reduction or emotional regulation strategies. Developing qualitative insights into motivational patterns could also deepen understanding beyond quantitative outcomes.

Moreover, the present research focused on extraversion and neuroticism as predictors of personality. Subsequent research can extend the focus to other personality traits, such as agreeableness or narcissism, to provide a better representation of individual differences in social media use.

5. CONCLUSION

This study contributes to the growing literature on digital behavior by identifying key psychological and personality predictors of social media addiction. It confirmed that neuroticism, extrinsic motivation, and Fear of Missing Out (FoMO) are consistently linked with excessive use and addictive patterns, while extraversion primarily influences usage, not addiction. Intrinsic motivation did not emerge as a significant factor in either case. These insights are vital for educators, psychologists, and policymakers aiming to mitigate the psychological burden caused by social media overuse. Interventions should focus on emotional regulation strategies, media literacy, and self-worth reinforcement to reduce reliance on social validation and fear of exclusion. Further research is recommended to explore other personality dimensions and longitudinal effects to design more targeted digital wellbeing programs.

5.1 Implications for Educational and Clinical Practice

The findings have practical implications in both educational and clinical contexts. Educational institutions can design awareness campaigns and incorporate digital wellness modules focusing on emotional regulation and FoMO management. Counsellors and psychologists working with students can develop therapeutic strategies that address underlying motivations for excessive social media use. Such approaches can foster healthier online habits and support students' mental well-being, reducing the risk of addiction while promoting balanced media engagement.

Acknowledgements

None.

Conflict of Interest


Authors declared NO conflict of interest.

Funding Source

The authors received NO funding to conduct this study.

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