The International Journal of Indian Psychology
ISSN 2348-5396 (Online) | ISSN: 2349-3429 (Print)
Volume 13, Issue 4, October- December, 2025
DIP: 18.01.097.20251304, DOI: 10.25215/1304.097
https://www.ijip.in

Research Paper

To Study Personality Traits and Coping Strategies as Predictors of Digital Stress in University Students

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ABSTRACT

This study investigated the relationship between personality traits, coping strategies, and digital stress among university students (N = 200). Participants completed the Big Five Inventory-44, Brief COPE Inventory, and Digital Stress Scale. Neuroticism positively correlated with digital stress ($r = .268$, $p < .001$), while conscientiousness showed a negative correlation ($r = –.230$, $p = .001$). Avoidance coping was the strongest predictor ($r = .463$, $p < .001$), followed by emotion- focused coping ($r = .339$, $p < .001$) and problem-focused coping ($r = .258$, $p < .001$). The study found no significant correlations between personality traits and coping strategies. Multiple regression revealed these variables accounted for 34% of the variance in digital stress ($R^2 = .340$, $p < .001$), emphasizing the importance of coping behaviors and personality in stress outcomes.

Keywords: *Personality Traits, Coping Strategies, Digital Stress, Neuroticism, Conscientiousness, Avoidance coping, University students*

In the last few years, university students have experienced an unprecedented increase in the use of digital tools for learning, social interaction, and academic collaboration. Although these technologies have enhanced accessibility and flexibility, they have simultaneously created new psychological problems collectively referred to as digital stress. This stress is caused by continuous notifications, information overload, pressure to maintain an online presence, and digital multitasking (Steele et al., 2020). As students balance academic work with digital interactions, the persistent nature of digital engagement can cause fatigue, anxiety, and a decline in academic performance (Hall et al., 2021).

Digital stress is compounded with the blurred boundaries of academic and personal life, particularly since students are frequently expected to be digitally always connected on numerous platforms. With the COVID-19 pandemic, the use of virtual classrooms, video conferencing, and learning management systems reinforced the condition of perpetual connectedness (Mihailidis, 2014; Babicka-Wirkus et al., 2021). Some students adapt to these expectations with ease, while others feel mental overload and affective distress that justifies exploring the individual differences that make some students more susceptible than others.

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Received: May 03, 2025; Revision Received: November 10, 2025; Accepted: November 15, 2025

Technostress Theory (Brod, 1984) provides a model to explain this phenomenon. Five dimensions are proposed; techno-overload (information overload), techno-invasion (difficulty disconnecting), techno-complexity (difficulty using digital systems), techno-insecurity (fear of being replaced by technology), and techno-uncertainty (anxiety from frequent updates). These stressors tend to co- occur in educational environments, where students manage coursework, social relationships, and institutional requirements through digital interfaces (Rosen et al., 2013).

Given the variability of individual responsiveness to stress, personality might play a decisive role in reactions to digital pressure. The Five-Factor Model (FFM) (Costa & McCrae, 1999) recognizes five broad dimensions of personality: neuroticism, conscientiousness, extraversion, agreeableness, and openness to experience. Neuroticism includes worry, irritability, and emotional instability, all of which increase vulnerability to stress (Reinecke et al., 2017). In contrast, conscientiousness is made up of self-discipline, planning, and organization, which are most likely to serve as protection against disordered digital space (Kimura et al., 2021).

These pattern-like tendencies can also shape how students manage digital stress. The Transactional Model of Stress and Coping (Lazarus & Folkman, 1984) suggests that coping processes act as a mediator between people and perceived stressors. Coping is generally divided into problem- focused (e.g., planning, active problem-solving), emotion-focused (e.g., venting, seeking support), and avoidance coping (e.g., denial, disengagement). The literature indicates that avoidance strategies are linked to undesirable outcomes in digital environments since they do not decrease chronic technological demands (Labrague & Falguera, 2021).

Despite growing concern about digital stress, empirical study of how coping and personality intersect in digital stress has been restricted. Most existing literature is on general stress or burnout, and this fails to take account of the particularities of digital stress or of personality-coping interactions. This gap needs to be bridged to the successful development of trait-based interventions in student well-being.

The present study investigates the relationships between personality traits, coping strategies, and digital stress in university students. It tests the following hypotheses:

1. There will be a significant relationship between personality traits and coping strategies.
2. There will be a significant relationship between personality traits and digital stress.
3. There will be a significant relationship between digital stress and coping strategies.

METHODOLOGY

Aim

The aim of this study is to examine personality traits and coping strategies as predictors of digital stress among university students.

Objectives

1. To study the correlation between personality traits and coping strategies among university students.
2. To study the correlation between personality traits and digital stress among university students.

3. To study the correlation between digital stress and coping strategies among university students.
4. To examine personality traits and coping strategies as predictors of digital stress

Variables

- Independent Variables: Personality Traits (Openness, Conscientiousness, extraversion, agreeableness, neuroticism) and Coping Strategies (Problem-focused, Emotion-focused, Avoidance)
- Dependent Variable: Digital Stress

Research Design

The study investigates through a cross-sectional correlational research design, the relationship among personality types, coping strategies, and digital stress among university students. The quantitative approach allows for measuring these variables with standardized instruments, thus qualifying for statistical analysis to establish significant correlations.

Participants

The study recruited a total of 200 university students. Convenience sampling and snow-ball sampling was used to obtain the study sample while still ensuring a diverse selection according to demographic factors such as gender, academic background, and varied patterns of digital engagement.

Inclusion criteria

- University students, aged between 18–25 years.
- Individuals active on digital platforms for academic, social, or professional purposes
- Individual with good mental health, with no history of mental disorders.

Exclusion criteria

- University students, who aged below 18 years or above 25 years.
- Individuals with minimal or no online presence.
- Individuals with ongoing mental health issues or current psychiatric treatment.

Instruments

Tool Name	Author	Year	Items	Reliability	Validity
Big Five Inventory (BFI-44)	John, O.P., Donahue, E.M., & Kentle, R.L.	1991	44	Test-retest reliability= 0.80-0.90 Cronbach's α = 0.75–0.90	Strong construct validity with established personality frameworks
Brief COPE Inventory	Carver, C.S.	1997	28	Test-Retest reliability= 0.45-0.86 Cronbach's α = 0.60–0.90	Strong factor structure with confirmed construct validity
Digital Stress Scale (DSS)	Hall, J.A., Steele, R.G., Christofferson, J.L., & Mihailova, T.	2021	24	Test-Retest reliability= 0.70-0.90 Cronbach's α = 0.82–0.92	Strong construct validity confirmed through exploratory and confirmatory factor analysis

Procedure

Data for this study were collected through offline surveys administered to university students in selected classrooms and campus common areas. Participants were informed about the study's purpose, their rights, and the voluntary nature of participation before providing informed consent. Clear instructions were given for each section of the survey, which took approximately 20–30 minutes to complete. Incomplete or careless responses were excluded to ensure data quality.

Statistics Used

1. Correlation Analysis: Pearson's correlation coefficient is used to assess the strength and direction of relationships between:
    - Personality Traits and Coping Strategies
    - Personality Traits and Digital Stress
    - Coping Strategies and Digital Stress
2. Regression Analysis: Multiple regression analysis is conducted to determine the predictive value of personality traits and coping strategies on digital stress levels.

RESULTS

Table No. 1 Correlations Between Personality Traits and Digital Stress

Variable	*1*	*2*	*3*	*4*	*5*	*6*
1. Extraversion	—	—	—	—	—	—
2. Conscientiousness	***0.123***	—	—	—	—	—
3. Openness	***0.118***	***0.123***	—	—	—	—
4. Agreeableness	***-0.005***	***0.195***	***0.144***	—	—	—
5. Neuroticism	***-0.289****	***-0.190***	***0.015***	***-0.119***	—	—
6. Digital stress	***-0.075***	***-0.230****	***-0.178***	***-0.158***	***0.268****	—

NOTE: * indicates p<.001.

The analysis found a significant positive correlation between neuroticism and digital stress ($r(200) = .268$, $p < .001$), indicating that higher neuroticism is linked to greater digital stress. Conscientiousness showed a significant negative correlation ($r(200) = -.230$, $p = .001$), suggesting a protective effect. Openness also had a weak but significant negative correlation ($r(200) = -.178$, $p = .011$). No significant correlations were found with agreeableness or extraversion.

Table No. 2 Correlations Between Personality Traits and Coping Strategies

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1. Extraversion	—	—	—	—	—	—	—	—
2. Agreeableness	-0.005	—	—	—	—	—	—	—
3. Conscientiousness	0.123	0.195	—	—	—	—	—	—
4. Neuroticism	-0.289*	-0.119	-0.190	—	—	—	—	—
5. Openness	0.118	0.144	0.123	0.015	—	—	—	—
6. Problem-focused	-0.068	-0.014	0.085	-0.026	-0.019	—	—	—
7. Emotion-focused	-0.023	-0.011	0.075	0.027	-0.067	0.698*	—	—
8. Avoidance	-0.036	-0.074	-0.087	0.015	-0.133	0.687*	0.582*	—

NOTE: * indicates p<.001.

The analysis found no significant correlations between personality traits and coping strategies. Neuroticism showed weak, non-significant correlations with avoidance (r = .015, p = .835) and emotion-focused coping (r = .027, p = .705). Conscientiousness was also not significantly related to problem-focused coping (r = .085, p = .229), nor to other strategies. Similar non-significant results were found for extraversion, agreeableness, and openness across all coping styles.

Table No. 3 Correlations Between Coping Strategies and Digital Stress

Variable	*1*	*2*	*3*	*4*
1. Digital Stress	—	—	—	—
2. Problem-focused	0.258*	—	—	—
3. Emotional-focused	0.339*	0.698*	—	—
4. Avoidance	0.463*	0.687*	0.582*	—

NOTE: * indicates p<.001.

The analysis found a significant positive correlation between Digital stress and Avoidance coping (r (200) = .463, p < .001), insinuating that university students using Avoidance coping strategies were more likely to experience higher levels of digital stress. There was also a significant correlation found between Digital stress and Problem-focused coping (r (200) = .258, p <.001) and Emotion-focused coping (r (200) = .339, p < .001).

Table No. 3 Regression Summary Predicting Digital Stress

Predictor	***B***	***SE B***	***β***	***95% Cl [LL,UL]***	***p***
Extraversion	.103	.212	-.030	[-.315, .521]	.627
Agreeableness	-.208	.216	–.059	[-.633, .218]	.337
Conscientiousness	-.521	.251	–.130	[-1.017, -.025]	.040*
Neuroticism	.794	.215	.233	[.371, 1.218]	< .001**
Openness	-.400	.245	–.099	[-.884, .084]	.105
Problem-focused	-.628	.410	–.147	[-1.437, .181]	.127
Emotiom-focused	.676	.297	.192	[.090, 1.261]	.024*
Avoidance	1.236	.250	.421	[.743, 1.728]	< .001**

*Notes: R^2=0.34, F=12.340, N = 200. B = unstandardized regression, coefficient. SE B = standard error of the coefficient. β = standardized coefficient. **= p < .05, *= p < .001*

Multiple regression analysis revealed that personality traits and coping strategies significantly predicted Digital Stress (DSS), explaining 34% of the variance (R^2 = .340, p < .001). Neuroticism positively predicted DSS (β = .233, p < .001), while conscientiousness was a negative predictor (β= –.130, p = .040); other traits showed no significant effect. Among coping strategies, avoidance coping was the strongest predictor (β = .421, p < .001), followed by emotion-focused coping (β= .192, p = .024), whereas problem-focused coping was not significant (β = –.147, p = .127).

DISCUSSION

Contrary to Hypothesis 1, the research discovered no statistically significant relationships between personality traits and coping styles. This is contrary to earlier studies (Connor-Smith & Flachsbart, 2007; Lazarus & Folkman, 1984), which stipulated that neuroticism would predict emotion- focused coping or avoidance, and conscientiousness would be

associated with problem-focused coping. A possible reason for this observation might be that digital stressors, i.e., incessant alerts, algorithmic stress, and online overload (Hall et al., 2021), disrupt conventional coping styles, and responses become situational instead of being dependent on traits. Alternatively, situational factors like digital literacy (Leung, 2010) or perceived control might be more influential than personality in determining the application of coping strategies. These observations highlight the need to rethink conventional coping models in the context of digital environments, and this might lead to the creation of new models that properly capture the omnipresent and new nature of technology- related stress.

Supporting Hypothesis 2, neuroticism was a strong predictor of extreme digital stress, consistent with results of previous research (Gashi et al., 2022; Reinecke et al., 2017). High neurotic students might experience higher emotional exhaustion and cognitive overload from digital demands. In contrast, conscientiousness was a protective factor, most likely because responsible and organized students have a greater capacity to control their digital exposure (Kimura et al., 2021). These findings highlight that personality traits not only affect traditional stressors but shape reactions to the chronic, frequently uncontrollable stresses of digital existence.

Hypothesis 3 was also validated, wherein avoidance coping showed maximum positive correlation to digital stress. Delaying or avoiding digital requests resulted in compounded stress, given that research findings show that avoidance exacerbates digital overload (Rosen et al., 2013). Emotional-focused coping, like venting, social support-seeking, also resulted in increased stress, and the implication is solely temporary alleviation and not cessation of systematic pressures of digital type (Labrague & Falguera, 2021).

Surprisingly, problem-oriented coping was weak but significantly correlated with digital stress, defying the usual protective effect (Folkman & Lazarus, 1985). This could serve to indicate the specific difficulties in digital spaces, where stressors such as algorithms or perpetual availability evade direct modulation, making well-known problem-fixing strategies dysfunctional or even provoking (Hall et al., 2021).

Limitations

Despite the helpful additions, there are some limitations to this study. First, self-report could have introduced social desirability bias, which would have caused underreporting of maladaptive coping or overreporting of positive traits. Second, the sample was one university's students only, thus limiting generalizability; subsequent studies should draw samples from diverse educational, cultural, and age groups. Last, the cross-sectional design cannot allow for causality inferences, longitudinal studies would more accurately estimate the long-term impact of digital stress.

Future Research

Although the current literature offers useful information regarding predictors of digital stress in university students, it also paves the way for future research. Further work can be strengthened using a longitudinal design to measure the role of personality and coping in digital stress over time, that is, over technological or academic cycles.

Wider samples with varying disciplines, ages, and cultures would enhance generalizability, and measurement of moderators such as digital literacy or self-efficacy would enhance understanding.Finally, with the changing dynamics of online platforms and scholastic

requirements, there is a necessity for ongoing research on new stressors such as algorithmic stress, surveillance worry, and burnout due to hybrid learning. Furthermore, integrating psychophysiological measurements, such as heart rate variability and screen measures, with self-report data can provide enhanced reliability and depth to future studies.

Theoretical and practical implications

This study advances stress research by applying traditional coping theory to digital challenges, suggesting the transactional stress model needs updating for chronic, algorithm-driven stressors. The findings also have important implications for university mental health and digital wellness initiatives. Interventions should be tailored to personality traits, 1neurotic students may benefit from mindfulness training and emotional regulation, while conscientious students can enhance resilience through planning tools and screen-time control. Institutions could also introduce digital hygiene seminars to help students manage notifications, reduce overexposure, and cope with constant online demands.

CONCLUSION

This study highlights the importance of personality traits and coping strategies in predicting digital stress among university students. Neuroticism and avoidance coping emerged as key risk factors, while conscientiousness served as a protective trait. Avoidance and emotion-focused coping were linked to higher digital stress, emphasizing their maladaptive nature in digital settings. The unexpected positive link between problem-focused coping and stress suggests that active strategies may be less effective for uncontrollable digital demands. Although no significant link was found between personality and coping styles, the findings support the need for tailored, personality-based interventions to address digital stress in academic environments.

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Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest
The author(s) declared no conflict of interest.

How to cite this article: Dhiman, A. & Kumar, R. (2025). To Study Personality Traits and Coping Strategies as Predictors of Digital Stress in University Students. *International Journal of Indian Psychology*, *13*(4)*,* 1039-1047. DIP:18.01.097.20251304, DOI:10.25215/1304.097