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Research Paper

Examining the Role of Demographics and Big Five Personality Traits in Shaping Internet Gaming Addiction Among University Students

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ABSTRACT

In recent years, Internet Gaming Addiction (IAGA) among university students has become a growing concern due to its potential negative effects on academic performance, mental health, and overall well-being. With the widespread use of online gaming platforms and digital devices, understanding the factors that contribute to IAGA has become increasingly important. A key area of focus is the role of personality traits in determining vulnerability to IAGA among university students. This study explores the connection between the Big Five personality traits (extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience) and IAGA within the university student population. A correlational survey design with a quantitative approach was used, involving 400 university students from Uttar Pradesh. Data were collected using established scales for Internet Gaming Addiction and Big Five personality traits. Participants were selected through quota sampling, and analysis was conducted using SPSS version 25 for cross-tabulation, correlation, regression, and chi-square tests, with data cleaning and coding done in MS Excel. The study found that Neuroticism (N) had a positive and significant relationship with IAGA, while Conscientiousness (C) had a negative and significant relationship. As a result, H0 2 and H0 5 were rejected. However, Openness to Experience (O), Extraversion (E), and Agreeableness (A) showed insignificant relationships with IAGA, leading to the failure to reject H0 1, H0 3, and H0 4. These findings emphasize the significant impact of Neuroticism and Conscientiousness on IAGA and underscore the importance of personality-based interventions for addressing gaming addiction. Further research is needed to explore the roles of Openness, Extraversion, and Agreeableness in influencing gaming behaviors.

Keywords: *Openness to Experience, Conscientiousness, Extraversion, Agreeableness, Neuroticism, Addiction, Internet Gaming Addiction*

The meteoric rise of online gaming platforms has transformed how university students entertain themselves and connect with others. However, for a concerning number of students in Uttar Pradesh, India, this digital playground can become a breeding ground for addiction. Excessive internet gaming can significantly disrupt academic pursuits, social life, and even physical health (Chang et al., 2020). To develop effective preventative

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measures specifically tailored to university students in Uttar Pradesh, researchers are increasingly focused on identifying factors that contribute to internet gaming addiction (IAGA). Personality traits are one promising area of exploration. The Big Five model, a widely recognized framework for understanding personality, provides a potential lens through which to examine this issue in this specific population (McCrae & Costa, 1999).

The Big Five categorizes personality into five key dimensions:

1. **Openness to Experience:** This trait reflects a tendency to be curious, creative, and open to new ideas ([McCrae & Costa, 1999]).
2. **Conscientiousness:** This dimension captures characteristics like organization, self-discipline, and goal-directedness ([McCrae & Costa, 1999]).
3. **Extraversion:** This trait reflects a preference for social interaction, stimulation, and activity ([McCrae & Costa, 1999]).
4. **Agreeableness:** This dimension encompasses characteristics like trust, helpfulness, and a desire for cooperation ([McCrae & Costa, 1999]).
5. **Neuroticism:** This trait reflects a tendency toward negative emotions, anxiety, and emotional instability ([McCrae & Costa, 1999]).

Previous research suggests potential connections between these personality traits and IAGA. For instance, some studies have found that individuals lower in conscientiousness, meaning less organized and disciplined, might be more susceptible to addiction (Tian et al., 2021). Conversely, higher levels of neuroticism, characterized by anxiety and negative emotions, might also be a risk factor (Lin et al., 2019). The relationships with openness, extraversion, and agreeableness are less clear, with some studies showing associations and others not (Ko et al., 2012; Park et al., 2011).

This study delves into the potential link between the Big Five personality traits and internet gaming addiction among university students in Uttar Pradesh. By investigating these associations specifically within this demographic, the aim is to:

1. **Identify personality profiles** that might increase vulnerability to problematic gaming behavior in university students from Uttar Pradesh.
2. **Contribute to the development of culturally relevant interventions** and support systems to help students in Uttar Pradesh navigate the digital landscape in a healthy and balanced way.

Understanding the psychological factors that contribute to IAGA among university students in Uttar Pradesh is crucial for promoting responsible gaming habits and fostering academic and social well-being within this specific educational and cultural context.

Objectives of the Study

1. Assess the difference between the level of Internet Gaming Addiction of university students as per their demographic profile.
2. Investigate the relationship between Big Five Personality Traits and Internet Gaming Addiction.
3. Examine the impact of Big Five Personality Traits (IVs) on Internet Gaming Addiction (DV).

THEORETICAL FRAMEWORK

This study investigates the potential link between the Big Five personality traits and internet gaming addiction (IAGA) among university students. To comprehensively explore this relationship, we draw on a combination of theoretical perspectives:

1. **Behavioral Theory:** Building on operant conditioning principles, this theory suggests that IAGA develops through positive reinforcement. The rewarding aspects of online gaming, such as achieving goals, gaining virtual items, or experiencing social interaction within the game, motivate continued play. As these rewards become more frequent, the association between gaming and pleasure strengthens. Over time, individuals might engage in compulsive gaming even if the enjoyment diminishes, driven by the desire for the positive reinforcements (Chang et al., 2020).
2. **Cognitive Theory:** This theory focuses on how individuals' thoughts and beliefs influence their gaming behavior. IAGA might be linked to distorted cognitions about gaming, such as the belief that it's the only effective way to cope with stress or achieve social connection. These distorted thoughts can lead to excessive gaming as a primary coping mechanism or a means of fulfilling unmet needs (Lin et al., 2019).
3. **The Big Five Personality Model:** This widely recognized framework posits five fundamental personality traits influencing behavior: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (McCrae & Costa, 1999). Our study explores how these traits might interact with the aforementioned theories.

By integrating these perspectives, we aim to gain a deeper understanding of IAGA among university students. The Big Five personality traits might influence susceptibility to the reinforcing and cognitive processes outlined in the Behavioral and Cognitive Theories.

CONCEPTUAL FRAMEWORK

This research centers on understanding how university students in Uttar Pradesh, India, develop internet gaming addiction (IAGA). The core concept revolves around the Big Five personality traits, which act as the IV. These traits encompass OCEAN. The DV in this study is IAGA.

The conceptual framework depicts a straightforward relationship between these two factors. The study hypothesizes that specific personality traits might influence susceptibility to IAGA. This simplified framework provides a foundation for exploring the core question of how personality influences IAGA in this specific demographic of university students. Fig 1 presents the conceptual model of the study

LITERATURE REVIEW

- **STUDIES RELATED TO BIG FIVE PERSONALITY TRAITS:**

Studies have consistently shown a positive association between conscientiousness and academic performance. Individuals higher in conscientiousness tend to be more organized, goal-oriented, and self-disciplined, leading to better academic outcomes (Duckworth & Steinberg, 2011). Research suggests a positive link between openness and academic achievement, particularly in subjects requiring intellectual curiosity and creativity (De Raad & Perugini, 2002). Neuroticism is consistently linked to negative mental health outcomes such as anxiety, depression, and emotional instability (Kotov et al., 2010). Individuals higher in agreeableness tend to have better social relationships and lower levels of stress, possibly contributing to better mental well-being (Schmitz & Krueger, 2005).

Lower conscientiousness, characterized by lower self-control and impulsivity, has been linked to a higher risk for substance use disorders and gambling addiction (Cyders et al., 2009). Similar to mental health, neuroticism might also be a risk factor for some addictions as individuals seek to escape negative emotions (Grant et al., 2004).

- **STUDIES RELATED TO INTERNET GAMING ADDICTION**

Internet Gaming Addiction (IAGA), also known as Gaming Disorder, has become a growing concern, particularly among university students. Excessive gaming behavior can significantly disrupt academic performance, social life, and mental well-being. This review explores the prevalence, risk factors, impacts, and potential interventions for IAGA within the university student population. Research suggests a concerning prevalence of IAGA among university students. Studies report varying estimates, ranging from 0.3% to 31.6%, with factors like diagnostic criteria and population demographics influencing the numbers (Chang et al., 2020; Lin et al., 2019; Wu et al., 2019).

Students with anxiety, depression, or ADHD might be more prone to using gaming as a coping mechanism (Lin et al., 2019; Ko et al., 2012). High academic pressure and demanding schedules can lead some students to seek escape in gaming (Liu et al., 2019). Loneliness or lack of social support can make online gaming communities more appealing (Przybylski et al., 2009; Chou & Lee, 2015). Games with strong social features, loot boxes, or mechanics that encourage repetitive play might be more addictive (Holden, 2008; Ferguson et al., 2010).

IAGA can have a significant negative impact on various aspects of a university student's life: Excessive gaming can lead to neglecting studies, decreased concentration, and lower grades (Chang et al., 2020). IAGA can exacerbate symptoms of depression, anxiety, and social isolation (Lin et al., 2019). Irregular sleep patterns due to late-night gaming sessions can impair cognitive function and overall health (Dworak et al., 2007). IAGA can strain relationships with family and friends due to neglected responsibilities and increased focus on gaming (Przybylski et al., 2009).

- **STUDIES RELATED TO IMPACT OF BIG FIVE PERSONALITY TRAITS ON INTERNET GAMING ADDICTION OF STUDENTS.**

Several studies suggest a negative correlation between conscientiousness and IAGA. Students high in conscientiousness might be more likely to manage their gaming time effectively (Müller et al., 2014). Research indicates a positive association between neuroticism and IAGA. Students prone to negative emotions might be more susceptible to using gaming as a coping mechanism (Mehroof & Griffiths, 2018). Findings for openness to experience, agreeableness, and extraversion are less consistent. Some studies report weak connections, while others show no significant correlations

METHODOLOGY OF THE STUDY

A correlational survey design was used with a quantitative approach on a sample size of 400 university students from 10 top smart cities of Uttar Pradesh (provided in appendix I). The primary data was collected with the help of already established Gaming Addiction scale for university students by Lemmens, J.S. et.al (2011) and the Big five inventory by John O P et.al. (1991). The description of the scales used is provided in the appendix II. The respondents were chosen using quota sampling technique.

The primary data was collected by administering established tools to the respondents both in online and offline mode in the months of July – September, 2024. The questionnaire consisted of several items (provided in appendix II). Out of total 1000 respondents, only data of 400 respondents was found useful for the study. This process included only those participants having internet gaming addiction. For analyzing the data, cross tab analysis, correlation analysis, regression analysis and chi-square analysis with the help of SPSS version 25 while data was cleaned and coded using MS Excel.

RESULTS & DISCUSSION

The demographic profile of university students

Table 1- Demographic Profile of respondents

Variables	**Undergraduates Students**		**Post-graduate Students**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Type of University				
Government aided				
Private				
Total	250	100.00%	150	100.00%
Department/Stream				
Pure Sciences				
Social Science				
Computer Sciences				
Any other				
Total	250	100.00%	150	100.00%
Gender				
Male				
Female				
Total	250	100.00%	150	100.00%
Type of family				
Nuclear				
Joint Family				
Total	250	100.00%	150	100.00%
Family's Monthly Income				
No Income				
Less than ₹20,000				
₹20,001 - ₹40,000				
₹40,001 - ₹60,000				
More than ₹60,000				
Total	250	100.00%	150	100.00%
Do you consider yourself involved in internet gaming				
Yes				
No				
Total	250	100.00%	150	100.00%
Which gadget do you use most frequent in playing games online?				
Mobile Phone				
Tablet				
Laptop				
Computers				
Other				
Total	250	100.00%	150	100.00%

Source- Compiled by researcher from analysis of primary data

Chi-square Analysis: Difference between the level of internet gaming addiction of university students as per their demographic profile.

Table 2- Difference between the level of Internet Gaming Addiction of university students as per their demographic profile

Null Hypotheses	p-value	Result
H0 1: There is no significant difference between IAGA and gender.	0.03	Reject
H0 2: There is no significant difference between IAGA and department.	0.04	Reject
H0 3: There is no significant difference between IAGA and type of university.	0.02	Reject
H0 4: There is no significant difference between IAGA and type of gadget.	0.00	Reject

Source- Compiled by researcher from analysis of primary data

Table 2 reveals statistically significant difference between internet gaming addiction (IAGA) and several demographic factors, leading to the rejection of all the H0. This suggests that gender, department, university type, and preferred gadget for gaming are all associated with IAGA risk in this study.

The results align with previous studies which report a higher prevalence of IAGA among males, possibly due to social norms and gaming industry targeting (Chang et al., 2009). However, gender differences in IAGA risk can vary depending on the population and game genre (Lin et al., 2014).

Further, students in certain departments (e.g., engineering, IT) might have more exposure to gaming or potentially experience higher stress levels, making them more susceptible to IAGA (Liu et al., 2019). The University type (public, private) might influence access to resources, student demographics, or academic pressure, potentially impacting IAGA risk (Wu et al., 2014). In addition, the preferred device for gaming (PC, mobile) might influence how accessible and immersive the gaming experience is, potentially affecting IAGA risk (Yen et al., 2007).

CORRELATION ANALYSIS: RELATIONSHIP BETWEEN OCEAN AND IAGA

- **H0 1:** There is no sig. relationship between O and IAGA.
- **H0 2:** There is no sig. relationship between C and IAGA.
- **H0 3:** There is no sig. relationship between E and IAGA.
- **H0 4:** There is no sig. relationship between A and IAGA.
- **H0 5:** There is no sig. relationship between N and IAGA.

Table 3- Relationship between OCEAN and IAGA.

Variables	IAGA	O	C	E	A	N
IAGA	1	0.265	-0.176**	-0.205	-0.033	0.675**
O	0.265	1				
C	-0.176**		1			
E	-0.205			1		
A	-0.033				1	
N	0.675**					1

*The "**" symbol next to correlations indicates significance at the 0.05 level.*
Source- Compiled by researcher from analysis of primary data

Table 3 shows that there is a positive and sig. relationship between N & IAGA. Therefore, HO 5 is rejected and there is negative and sig. relationship between C & IAGA. Therefore, HO 2 is rejected. Further, variables- O have positive but insignificant relationship with IAGA, and variables- E & A have negative but insignificant relationship with IAGA, therefore, HO 1, 3 & 4 are failed to be rejected.

REGRESSION ANALYSIS: IMPACT OF OCEAN (IV) ON IAGA (DV)

- **H0 1:** There is no sig. Impact of O (IV) on IAGA (DV).
- **H0 2:** There is no sig. Impact of C (IV) on IAGA (DV).
- **H0 3:** There is no sig. Impact of E (IV) on IAGA (DV).
- **H0 4:** There is no sig. Impact of A (IV) on IAGA (DV).
- **H0 5:** There is no sig. Impact of N (IV) on IAGA (DV).

Table 4- Impact of OCEAN (IV) on IAGAS (DV).

Model	US	Co	T	Sig.	C	B	S.E	Beta	Z-O	P Part
1 (Constant)	0.321	3.561	11.082	0.000						
O	0.265	0.131	0.261	1.990	0.069	0.143	0.191	0.191		
C	-0.176	0.195	0.258	1.325	0.008	0.007	-0.129	-0.127		
E	-0.205	0.076	0.102	0.033	0.220	0.310	0.003	0.003		
A	-0.033	0.064	0.012	0.051	0.119	0.410	0.002	0.003		
N	0.675	0.053	0.621	0.046	0.020	0.410	0.001	0.003		

Source- Compiled by researcher from analysis of primary data

Seeing the table 4, it can be said that C (IV) influences IAGA (DV) negatively and significantly while N influences the same DV as positively & significantly, leading to the rejection of H0 2 & 5. Further, IV- O have positive but insignificant influence on IAGA (DV) & E & A have negative but insignificant influence on IAGA (DV). Therefore, H0 1, 3 & 4 were failed to be rejected.

CONCLUSION

This study provides valuable insights into the complex relationship between personality traits and internet gaming addiction (IAGA) among university students. It's intriguing to see how certain traits, like conscientiousness and neuroticism, play distinct roles in influencing IAGA risk.

The finding that conscientiousness acts as a protective factor against IAGA aligns with previous research suggesting that individuals who are organized, responsible, and disciplined may be less susceptible to addictive behaviors. On the other hand, the association between neuroticism and higher levels of IAGA underscores the importance of understanding the role of negative emotions in addiction.

The influence of demographic variables, such as gender, department, university type, and preferred gaming device, on IAGA risk highlights the multidimensional nature of this

phenomenon. It suggests that factors beyond personality traits alone contribute to the development and severity of internet gaming addiction.

However, it's worth noting the non-significant influence of openness to experience, extraversion, and agreeableness on IAGA in this study. While unexpected, these findings underscore the need for further exploration to understand the nuanced interplay between personality traits and addictive behaviors in the context of internet gaming.

Overall, this research adds to our understanding of the factors contributing to IAGA among university students and underscores the importance of considering both individual differences and broader demographic variables in prevention and intervention efforts.

Practical Implications

These findings hold valuable real-world applications. University support services can leverage this knowledge to identify students at risk for IAGA based on both personality traits and demographics. Proactive interventions, such as time management workshops for conscientious students or stress management programs for neurotic students, can be designed to address specific needs. Game developers can utilize this information to create features within games that promote healthy gaming habits, particularly for players exhibiting personality traits associated with higher IAGA risk. Finally, parents and educators can benefit from this research by gaining a deeper understanding of the link between personality and IAGA, enabling them to better support students and identify potential risks.

Future Scope of Study

This research paves the way for further exploration of the complex relationship between personality and IAGA. Future studies could investigate how these factors change over time by employing longitudinal designs. Additionally, examining how different personality traits interact and influence IAGA could offer deeper insights. For instance, research could explore if conscientiousness might mitigate the negative effects of neuroticism. Furthermore, replicating the study across diverse cultures would reveal potential variations in the personality-IAGA link based on cultural contexts. Finally, investigating if the type of game students play (e.g., strategy vs. social vs. role-playing games) moderates the relationship between personality and IAGA can provide a more nuanced understanding of this issue. By pursuing these avenues of research, we can gain a more comprehensive understanding of IAGA and develop more effective prevention and intervention strategies.

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Conflict of Interest

The author(s) declared no conflict of interest.

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