

PERSONALITY TRAITS AND ACADEMIC PERFORMANCE OF UNIVERSITY STUDENTS

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Abstract

This study examines the relationship between university students' personality traits and academic performance in Pakistan, using data from an online survey and the BFI-10 (Big Five Inventory). Pearson's correlation analysis revealed that extroversion and neuroticism negatively correlate with academic performance, while openness, agreeableness, and conscientiousness show positive correlations. The findings suggest that personality traits significantly impact academic outcomes. Interventions such as self-awareness practices and behavior adjustments may help students leverage or manage their traits to improve academic performance.



The
Spectrum of Research

INTRODUCTION

A person's inclination or predisposition towards a certain way of feeling, acting, or thinking that is likely to persist over time and given suitable conditions is known as their personality characteristic. The components of an individual's personality arise together to create a coherent whole (Bardi & Guerra, 2011). Understanding personality theory is essential to comprehending organizational behaviour. Individuals must be conscious of the ways in which their personality influences their behaviour. (Hussain, Hussain, & Sadia, 2023).

The "Big Five" is one of the most popular methods for describing personality qualities. Five broad attribute measurements Neuroticism, Agreeability, Extroversion, Openness, and Conscientiousness can be used to describe personality (Costa & McCrae, 1992). It's important to recognize personality traits correctly since they can affect how learners behave, which can have a significant impact

on how well they do academically (Abouzeid et al., 2021). Despite the potential distinctions between each individual, all humans have some universal characteristics and behaviors that they all bring to the world with them (Geramian, Mashayekhi, & Ninggal, 2012).

Five significant factors—extroversion-introversion, neuroticism, agreeableness, conscientiousness, and yearning for new experiences—were included in the Big Five Personality Factors model (Tavakkoli & Mansour Lakoorej, 2020). The most crucial factor in evaluating students during the educational process is their academic achievement and ability to apply what they have learnt (Ekhtiari Amiri, Hajihassani, & Raeisi, 2021). Academic performance is the capacity to demonstrate that an activity has produced the intended results (Lester, Salekin, & Sellbom, 2013) (Nouraldi, 2021).

Human motives and personality traits include both innate psychological requirements and intrinsic developmental inclinations, and they are what lead to people's self-determined development and success in life (Deci & Ryan, 2008). Similar to how personality qualities are important for ensuring students have a strong will to succeed, the components of an individual's current psychological well-being boost pupils' desire to accomplish and achieve in life (Osamika, Lawal, Osamika, Hounhanou, & Laleye, 2021).

Personality traits are a very old concept. Aristotle, a Greek philosopher, discussed the importance of character traits including conceit, modesty, and cowardice in his book *Ethics* in the fourth century BC (Matthews, Deary, & Whiteman, 2003). The strongest learning goal orientation is found in those who exhibit high levels of conscientiousness, extraversion, and openness (Halder, Roy, & Chakraborty, 2010). Openness and extraversion are the best explanations for engagement motivation (thinking and a desire for self-improvement) (Komarraju & Karau, 2005). Students with high neuroticism and low extraversion are more likely to seek avoidance performance objectives and have a fear of failing (Komarraju, Karau, & Schmeck, 2009).

In order to understand information behaviour, researchers have looked at personality factors. The results point to potential connections between personality factors and information literacy (Nahyun & Hana, 2011). Personality traits play a role in the success of language learning (Dewaele, 2005). Extroverts are specifically influenced by the objective world, or the world outside of them. Conversely, introverts are impacted by their own internal world (Zaswita & Ihsan, 2020). The concept that a person's learning orientation is related to their personality has recently received empirical support (Duff, Boyle, Dunleavy, & Ferguson, 2004).

Although there is compelling evidence linking personality traits to success, some studies contend that smaller personality traits—such as effort and intellectual investment—predict more variation in success than the Big Five major traits (Rimfeld, Kovas, Dale, & Plomin, 2016). It has been

demonstrated that students scoring high on conscientiousness tend to have higher grades than those scoring low on conscientiousness (Duff et al., 2004).

Extraversion is only partly related to academic performance and negatively and significantly predicts academic achievement (Chamorro-Premuzic & Furnham, 2003). Extraverts spending more time socializing and introverts spending more time studying find extraversion to be important for language achievement (Poropat, 2009). Higher levels of extraversion is compared to higher academic achievement among elementary school students, and to lower academic performance at higher educational levels (Dunsmore, 2005). Students' interpersonal and intrapersonal skills explain for the negative link they discover between extraversion and academic achievement in higher education (Chamorro-Premuzic, Furnham, & Petrides, 2006). Openness has a considerable impact on academic achievement and predicts future academic success (Caprara, Vecchione, Alessandri, Gerbino, & Barbaranelli, 2011). According to certain research, academic success and openness to new things go hand in hand. There are also studies that show no such relationship (Karatas, 2015).

A well-developed personality is correlated to better academic performance also supported that the three personality traits agreeableness, conscientiousness, and openness are significantly associated with the academic performance of the students (Naseer, Mussarat, & Malik, 2022). Negative correlations between neuroticism and post-secondary academic success have been reported in a few research (O'Connor & Paunonen, 2007). Type A personalities are more creative than other personalities (Sameen & Burhan, 2014). While some studies have revealed significant stronger positive relationships with academic achievement and others have uncovered low relationships (Lateef, Dahar, & Yousuf, 2019).

With the exception of assertiveness, it was discovered that the personality qualities of the high and low achievers are identical. (Dzulkifli & Alias, 2012). The results showed that there is no significant correlation between academic

performance, drive for accomplishment, or any of the Big Five personality traits (Khan, 2018). There is a claim that personality assessment scores, especially in highly selective and competitive environments, may have a significant role in predicting academic success or failure in higher education (Chamorro-Premuzic & Furnham, 2003).

It is advised that in order to increase academic attainment, instructors, administrators, educators, curriculum authors, and legislators should take personality weaknesses into account (Lateef et al., 2019). The personality qualities of medical students were found to have a mixed pattern in this study. A select few personality qualities, such as conscientiousness, have a major impact on pupils' academic achievement. (Al-Naim et al., 2016). Among personality traits, low extraversion and conscientiousness were reliably predicting GPA (Smrtnik-Vitulić & Zupančič, 2011).

Psychological personality type has no bearing on academic accomplishment since students may attain comparable academic goals whether or not they exhibit certain personality qualities (Smrtnik-Vitulić & Zupančič, 2011). The big five personality traits were found to predict academic achievement of prospective teachers by 20% (Hashmi & Naz, 2020). According to this study, personality qualities—in particular, conscientiousness—are important in predicting a student's performance in medical school's clinical years (Sobowale, Ham, Curlin, & Yoon, 2018). Boys' academic success does

not seem to be correlated with conscientiousness (Janošević & Petrović, 2019).

METHODOLOGY

The Correlational study design was used and the study was conducted by using an online questionnaire among students providing instructions about the questionnaire. It includes questions about the information of the types of personality traits the students possess. According to parent article, the sample size selected for study was 285 participants which include both male and female students. Non-probability randomized sampling technique was used. We took university students only who's studies were ongoing and age of 18-30 years. Data collection was carried out online by filling out questionnaires. Demographic performance for collecting general and basic information of the participants, a brief version of Big Five Inventory (BFI-10) and student's GPA percentages were used for evaluating the relationship of student's personality traits and academic achievements.

Research Findings

According to the results of SPSS, there is a correlation between student's personality traits and their academic achievements. Extroversion and neuroticism is negatively correlated with academic performance. On the other hand, conscientious, openness and agreeableness is positively correlated with academic performance.

Table.1. Demographic distribution of age, education, CGPA Percentage and Gender.

Variable	Distribution	Numbers of Participants	Percentage
Age	18-23	232	83%
	24-29	44	16%
	30 Above	4	1%
	Total	280	100%
Education	Metric	3	1%
	Inter	19	7%
	Graduation	218	78%
	Master	40	14%
	Total	280	100%
CGPA Percentage	1-25	0	0%
	26-50	40	14%
	51-75	210	75%
	76-100	30	11%
	Total	280	100%
Gender	Male	78	28%
	Female	202	72%
	Total	280	100%

The demographic table shows distribution of age, education, percentage of marks and gender. According to age distribution, 18-23 years old students are 83%, 24-29 are 16%, and 30 above are 1%. Metric students are 1%, intermediate are

7% , graduation 78% and masters 14%. Students that fall between 1-25% percentage of marks are 0%, 26-50% are 14%, 51-75% are 75% and 76-100 are 11%. Gender distribution is 28% for males and 72% for females.

Table. 2. Correlations

Personality Trait	N	Pearson Correlation with GPA	Sig. (2-tailed)
Extraversion	280	-.129*	.031
Agreeableness	280	.030	.621
Conscientiousness	280	.022	.709
Neuroticism	280	-.019	.750
Openness	280	.069	.252

$p < .05$ (2-tailed); *Correlation is significant at the 0.05 level.

The results show that among the Big Five personality traits, only Extraversion has a statistically significant correlation with students' GPA percentage, with a very weak negative correlation ($r = -0.129$, $p = .031$). This suggests that students who score higher on extraversion may have slightly lower academic performance, though

the strength of the relationship is minimal. All other traits – Agreeableness, Conscientiousness, Neuroticism, and Openness – show no significant correlation with GPA, indicating that these personality dimensions do not have a meaningful statistical relationship with academic performance in this sample.

Table. One-Sample Statistics between GPA percentage of Students and Extraversion.

	N	Mean	Std. Deviation	Std. Error Mean
GPA Percentage of students	280	16.0820	26.70729	1.59607
Extraversion	280	6.6857	2.01103	.12018

Table shows the mean value of GPA percentage of students is 16.0820 and Extraversion is 6.6857.

Table. One-Sample Test of GPA Percentage and Extraversion.,

Test Value = 0						
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
	Lower	Upper	Lower	Upper	Lower	Upper
GPA Percentage of students	10.076	279	.000	16.08200	12.9401	19.2239
Extraversion	55.630	279	.000	6.68571	6.4491	6.9223

Table shows the value of level of significance is 0.000 which is less than 0.05 ($p > 0.05$). It shows data is statistically significant.

Table. One-Sample Statistics of GPA Percentage of Students and Agreeableness.

	N	Mean	Std. Deviation	Std. Error Mean
GPA Percentage of students	280	16.0820	26.70729	1.59607
Agreeableness	280	6.6607	2.66449	.15923

Table shows the mean value of GPA percentage of students is 16.0820 and Extraversion is 6.6607.

Table. 10. One-Sample Test of GPA Percentage of Students and Agreeableness.

Test Value = 0						
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
	Lower	Upper	Lower	Upper	Lower	Upper
GPA Percentage of students	10.076	279	.000	16.08200	12.9401	19.2239
Agreeableness	41.830	279	.000	6.66071	6.3473	6.9742

Table shows the value of level of significance is 0.000 which is less than 0.05 ($p > 0.05$). It shows data is statistically significant.

Table. One-Sample Statistics of GPA Percentage of Students and Conscientiousness.

	N	Mean	Std. Deviation	Std. Error Mean
GPA Percentage of students	280	16.0820	26.70729	1.59607
Conscientiousness	280	6.8571	2.25624	.13484

Table shows the mean value of GPA percentage of students is 16.0820 and Extraversion is 6.8571.

Table. One-Sample Test of GPA Percentage of Students and Conscientiousness.

	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean	95% Confidence Interval	
	Lower	Upper	Lower	Upper	Lower	Upper
GPA Percentage of students	10.076	279	.000	16.08200	12.9401	19.2239
Conscientiousness	50.855	279	.000	6.85714	6.5917	7.1226

Table shows the value of level of significance is 0.000 which is less than 0.05 ($p > 0.05$). It shows data is statistically significant.

Table. One-Sample Statistics of GPA Percentage of Students and Neuroticism.

	N	Mean	Std. Deviation	Std. Error Mean
GPA Percentage of students	280	16.0820	26.70729	1.59607
Neuroticism	280	5.3821	2.14034	.12791

Table shows the mean value of GPA percentage of students is 16.0820 and Extraversion is 5.3821.

Table. One-Sample Test of GPA Percentage of Students and Neuroticism.

	Test Value = 0					
	T	df	Sig. (2-tailed)	Mean	95% Confidence Interval of the Difference	
	Lower	Upper	Lower	Upper	Lower	Upper
GPA Percentage of students	10.076	279	.000	16.08200	12.9401	19.2239
Neuroticism	42.078	279	.000	5.38214	5.1304	5.6339

Table shows the value of level of significance is 0.000 which is less than 0.05 ($p > 0.05$). It shows data is statistically significant.

Table. One-Sample Statistics of GPA Percentage of Students and Openness.

	N	Mean	Std. Deviation	Std. Error
GPA Percentage of students	280	16.0820	26.70729	1.59607
Openness	280	6.2821	1.80869	.10809

Table shows the mean value of GPA percentage of students is 16.0820 and Extraversion is 6.2821.

Table. One-Sample Test of GPA Percentage of Students and Openness.

		Test Value = 0		Sig. (2-tailed)	Mean Difference		95% Confidence Interval of the Difference	
	T	df			Lower	Upper	Lower	Upper
GPA Percentage of students	10.076	279		.000	16.08200		12.9401	19.2239
Openness	58.120	279		.000	6.28214		6.0694	6.4949

Table shows the value of level of significance is 0.000 which is less than 0.05 ($p > 0.05$). It shows data is statistically significant.



Conclusion

The results revealed Pearson correlation between extroversion and GPA percentage is -0.129, neuroticism and GPA percentage is -0.019, openness and GPA percentage is 0.069, agreeableness and GPA percentage is 0.030 and conscientiousness and GPA percentage is 0.022.

The student's academic achievement is associated and determined by the personality traits that they possess. There are some traits that are associated with high academic performance and there are some other that are associated with low academic performance. Students who are extroverted or having neuroticism personality showed negative correlation with Percentage of marks. It means students who are either emotionally unstable or more social tend to be low achieving in academic performances and it is congruent with hypothesis No. 2. While on the other hand, students who have conscientiousness, agreeableness and openness to experience personality types showed positive correlation with academic performance, which means goal directed, friendly, liberal personalities tend to be high achieving in academic performance. The more the student is open, agreeable or conscientious, more academic performance will be seen. This result is congruent with the results of many previous researches and our parent article (Chowdhury, 2006 #89).

Our studies show that the relationship between personality traits and academic achievement is independent of cultural or residential area's influences. This relationship is not dependent on the type of institute in which the students study, and the styles of teaching of the teachers. Personality traits are naturally occurring phenomenon which determine a student's attitude and behavior towards academic performance. The students who have conscientiousness personality trait dominating over others, have tendency to be responsible, organized, hard-working and goal directed. These traits compel them to be good performer in education. On the other hand, neuroticism reflects the tendency to be emotionally unstable which leads to low achievements. Furthermore, agreeableness is also a predictor of performance

especially when they interact with others and help or cooperate with others but the correlation is very weak which supports the studies of Chowdhury, 2006 #90 who found that agreeableness is a good predictor of educational performance but the correlation is weak. In this study, extraversion showed negative correlation with performance as they engage themselves in impulsive and social activities thus ignoring their studies.

The reason why some students perform well in academic works while others do not do so well is personality types that they inherent. Some of them can not be changed over the time while others may get increased with the age. Also these can be controlled in a healthy manner. Career counseling can be effective. Issues in performance coming due to neuroticism personality traits can be managed. The students should practice deep breathing, positive self affirmations and expose themselves to more positive peer group so that they could overcome their negative patterns of thinking. They should practice altruism because it is liked by everyone and people begin to approve good behaviours, which eventually would lead to increase in self-esteem. The student who are open to experience should manipulate their personality trait in a healthier way as this is actually a good trait. The student should challenge themselves to learn every day something new to meet their naturally occurring curiosity need. The extroverts should set a future goal and try to achieve it. They should give themselves alone time in which they should evaluate their achievements, benefits or harms of spending extra time with people and doing their daily activities. They should make a schedule in which they will learn academic lesson on daily basis along with other activities. Agreeable should know where they need to be empathetic as it might not be good for them to be empathetic in every situation and they should not ignore their own needs.

Recommendations

1. Based on the findings and analysis of this study, the following recommendations are proposed for educators, counselors, parents, and students to enhance academic performance through better

understanding and management of personality traits.² Integrate Personality Awareness in Academic Counseling. Educational institutions should incorporate personality assessments into their academic and career counseling programs. Understanding individual students' personality profiles can help in tailoring academic strategies that align with their strengths and weaknesses.³ Provide Support for Emotionally Vulnerable Students. Students with high levels of neuroticism, who tend to be emotionally unstable, may benefit from psychological support and stress management programs. Techniques such as mindfulness, deep breathing, positive self-talk, and peer support groups should be promoted to enhance emotional regulation and academic focus.⁴ Encourage Healthy Social Behavior in Extroverted Students. Since extraversion showed a negative correlation with academic performance, extroverted students should be guided to balance their social engagement with academic responsibilities. Time management training and reflective exercises (e.g., journaling and self-assessment) can help in building self-discipline.⁵ Promote Self-Directed Learning for Open Individuals. Students high in openness to experience should be encouraged to explore new topics and challenge themselves intellectually. They should be provided opportunities for independent learning, creative tasks, and exposure to diverse knowledge areas that satisfy their natural curiosity while keeping academic goals in focus.⁶ Cultivate Goal-Oriented Habits in All Students. Regardless of personality type, fostering conscientious behaviors such as planning, organization, and goal-setting can lead to improved academic outcomes. Schools and families should create environments that reward consistency, responsibility, and effort.⁶ Train Agreeable Students in Assertiveness and Self-Care. Highly agreeable students, while cooperative and helpful, should be taught assertiveness skills to ensure their own academic needs are not compromised. They must learn to balance empathy for others with their personal goals.⁷ Design Personality-Sensitive Teaching Methods. Educators should adapt their teaching styles to

accommodate different personality traits. For example, group discussions may benefit extroverts, while reflective essays may engage introverts or those high in openness.⁸ Encourage Altruism and Social Responsibility. Practicing altruism and engaging in prosocial activities can enhance self-esteem and emotional well-being, especially for students with neurotic tendencies. Community service or peer mentoring programs can serve this purpose.⁹ Promote Lifelong Personality Development. While some traits are stable, personality can evolve with age and experience. Therefore, students should be guided to develop positive personality aspects over time through structured life skills training and character-building exercises.¹⁰ Incorporate Personality Research in Curriculum Planning. Curriculum designers and education policy-makers should consider integrating psychological insights into educational frameworks to support personalized learning and promote academic resilience.

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