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An Investigation to determine the Personality Predictors of Multiple Intelligence among School Students

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Abstract: *This research examined gender and place of residence differences in Big Five personality traits and Multiple Intelligences (MI), as well as the relationships between personality traits and MI among adolescent school students from West Tripura, India. Using a sample of 900 adolescent school students, standardized measures of the Big Five personality traits and MI were administered, and academic marks were obtained from school records. Independent sample t-tests, correlation analysis, and multiple regressions were employed for data analysis. The results indicated significant gender differences in neuroticism and MI, with males scoring higher on neuroticism and females demonstrating higher overall MI. Urban adolescents scored significantly higher than rural adolescents on conscientiousness and openness, while no significant residential differences were found for MI. Correlation analyses revealed that MI was positively associated with conscientiousness, openness, agreeableness, and extraversion, whereas neuroticism showed no significant association. Regression analysis further showed that extraversion positively predicted MI, while neuroticism emerged as a negative predictor. The findings suggest that personality traits play an incremental but meaningful role in shaping adolescents' multiple intelligences, highlighting the importance of considering both personality and contextual factors in educational planning and adolescent development.*

Keywords**:** Big Five personality traits, multiple intelligences, adolescence, gender differences, educational psychology.

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I. INTRODUCTION

Adolescence represents a critical developmental stage marked by rapid cognitive, emotional, and personality-related changes that substantially influence learning and academic functioning. Contemporary psychological research increasingly recognizes that academic outcomes are not shaped by cognitive ability alone, but also by non-cognitive factors such as personality traits and diverse intellectual capacities. Among the most influential frameworks in this domain are the Big Five model of personality and Gardner's theory of Multiple Intelligences (MI), both of which offer complementary perspectives for understanding individual differences in adolescents' learning and adaptation.

The Big Five personality model comprising Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism, has been widely validated in adolescent populations and shown to be meaningfully associated with educational and psychosocial outcomes (Ortet et al., 2022). Empirical evidence consistently identifies conscientiousness and openness as important correlates of academic achievement, even after controlling for general intelligence (Camps & Morales-Vives, 2013), while neuroticism has been linked to poorer emotional regulation and reduced academic engagement (Wang et al., 2019). These findings suggest that personality traits play a critical role in shaping adolescents' learning-related behaviors and outcomes.

Parallel to personality research, Gardner's theory of Multiple Intelligences conceptualizes intelligence as a multidimensional construct encompassing linguistic, logical–mathematical, spatial, musical, bodily–kinesthetic, interpersonal, intrapersonal, naturalistic, and existential intelligences. Research indicates that these intelligences contribute differentially to academic and psychological functioning and are influenced by individual and contextual factors (Quintero et al., 2025). Importantly, intelligence and personality are not independent constructs; rather, they demonstrate modest but meaningful associations during adolescence, with traits such as extraversion and conscientiousness showing positive links to intellectual and academic performance (Brandt et al., 2020).

Gender and contextual variables further complicate these relationships. Although some studies report minimal gender differences in overall intelligence, differences have been observed in specific personality traits and their associations with learning outcomes (Quintero et al., 2025). Similarly, environmental factors such as place of residence (urban vs. rural) may shape personality development and intellectual expression by influencing educational opportunities, social exposure, and cognitive stimulation (Ayoub et al., 2021). Despite growing international evidence, there remains a paucity of research examining these relationships in Indian adolescent populations, particularly within the socio-cultural context of the North-Eastern region.

Against this backdrop, the present study determined the hypotheses, which is discussed in the following section. By integrating personality and intelligence frameworks within an underrepresented cultural context, this research seeks to contribute to a more comprehensive understanding of adolescent development and inform educational practices sensitive to individual differences.

Hypotheses

On the context of the literatures reviewed, the following research hypotheses have been formed:

H1: There exists significant gender differences in terms of the big five personality variables and MI of the students

H2: There exists significant differences in the place of residence in terms of the big five personality variables and MI of the students

H3: There exists a significant correlation among the big five personality variables and MI of the students

H4: The MI of the students is significantly predicted by the big five personality variables

II. METHODS

Participants

The participants consisted of 900 adolescent school children from West Tripura district, Tripura, India. A purposive sampling technique was utilized to amass the sample. The demographic distributions of the participants have been given below. All the participants were of uniform ages (around 16 yrs).

Demographic distribution of the sample

Demographic Variables	N	%
Age		
Male	450	50
Female	450	50
Caste		
OBC	300	33.33
SC	300	33.33
ST	300	33.33
School Locations		
Rural	395	43.9
Urban	505	56.1

Materials

For assessing personality Traits of the adolescent school students, the *Five Personality Trait Inventory (FPTI-MKS)* was used (Misra). The scale has 50 items, spread across the following 5 dimensions: Openness (O), Conscientiousness (C), Extraversion (E), Agreeableness (A) and Neuroticism (N). The scale is scored across a 5-point Likert scale ranging from 1 ("Never") to 5 ("Always"). All the dimensions have 10 items each. Each of the dimensions is composed of positive and negatively coded items. . The scale has satisfactory dimension-wise test-retest (ranging between 0.54 to 0.76) and split-half reliability (ranging between 0.58 to 0.77). The validity coefficient ranged between 0.24 to 0.93.

Multiple Intelligence Scale (MIS-ASPS) a test developed by Agarwal and Pal () was used to assess multiple intelligence among the students. The scale has 90 items, spread across the following 9 dimension: Linguistic, Logical, Bodily, Kinesthetic, Spatial, Musical, Naturalistic, Interpersonal, Intrapersonal and Existential. The scale is scored across a 5-point Likert scale ranging from 1 ("Never") to 5 ("Always"). All the dimensions have 10 items each. Each of the dimensions is composed of positive and negatively coded items. The scale has satisfactory dimension-wise test-retest (ranging between 0.71 to 0.8) and split-half reliability (ranging between 0.83 to 0.89). The scale also possesses satisfactory content validity. The marks of the students were derived by asking for their last semester/term total marks.

Procedure

The scales were organized and the printed questionnaire was prepared. For the data collection, students from different schools in West Tripura district, Tripura, India were approached and briefed about the research and their upcoming role in the research if they accept to participate. After taking prior appointments, the participants were met accordingly on their date and time. The instructions were elucidated properly and data was collected following all the ethical standards of research. The data collected was then tabulated and then subjected to statistical analysis of the data. All ethical standards of research were maintained throughout the research.

Statistical Analyses: For the first three hypotheses, the independent sample t-test was used. For the fourth hypothesis, the product moment correlation was conducted. All statistical analyses were conducted in SPSS v26.

III. RESULTS

An independent samples *t*-test (Table 1 at the end) showed that males and females did not differ significantly on conscientiousness, openness, agreeableness, or

extraversion (p> .05). However, a significant gender difference was observed for neuroticism, with males reporting higher levels than females [$t(898) = -2.08$, p = .038]. A highly significant difference emerged for MI, with females scoring higher than males [$t(898) = 3.37$, p = .001], meaning that greater overall MI among female participants.
Thus, the H1 has been partially accepted.

In Table 2 (at the end), significant differences were found for conscientiousness and openness based on place of residence. Urban participants scored higher than rural participants on conscientiousness, [$t(898) = -5.00$, p< .01], and openness[$t(898) = -2.00$, p< .05].However, no significant rural–urban differences were observed for neuroticism, agreeableness, extraversion, or MI (p> .05). Thus, the H2 has been partially accepted.

In table 3, MI showed significant positive correlations with conscientiousness (r = .14, p< .01), openness (r = .16, p< .01), agreeableness (r = .13, p< .01), and extraversion (r = .19, p< .01), suggesting that higher MI is associated with higher adaptive personality traits, particularly extraversion. The relationship between MI and neuroticism was non-significant (r = .04, p> .05), indicating that emotional instability was not meaningfully related to MI in this sample. The remaining personality variables were moderately and positively intercorrelated with one another, as reported in the table.
Thus, the H3 (MI is significantly correlated to all the big five personality factors) has been partially accepted.

The multiple regression analysis (table 4) revealed that, when all personality variables were entered simultaneously, neuroticism and extraversion emerged as significant predictors of MI. Neuroticism negatively predicted MI ($\beta = -.08$, p = .035), indicating that higher neuroticism was associated with lower MI. Extraversion was a positive and significant predictor ($\beta = .13$, p = .002), suggesting that more extraverted individuals reported higher MI. Conscientiousness, openness, and agreeableness did not make significant unique contributions to MI (p> .05).
Thus, the H4 has been partially accepted.

IV. DISCUSSION

The current research to examine gender and residence-based differences in Big Five personality traits and Multiple Intelligences (MI), explore the relationships between personality traits and MI, and determine the predictive role of personality traits in explaining MI among adolescent school students. Overall, the findings provide partial support for the proposed hypotheses and align with prior research suggesting that personality traits play a meaningful, though modest, role in shaping intellectual profiles during adolescence.

With respect to gender differences, the results revealed a significant difference only for neuroticism and MI, with males scoring higher on neuroticism and females demonstrating higher overall MI. The absence of widespread gender differences across most Big Five traits is consistent with previous adolescent research indicating that personality structures are largely similar across genders, with only small trait-specific variations (Quintero et al., 2025). Higher neuroticism among males in the present sample contrasts with some Western findings but aligns with evidence suggesting that socio-cultural expectations and stress exposure may shape emotional regulation differently across contexts (Ayoub et al., 2021). The higher MI scores observed among female students are in line with research showing that females often demonstrate stronger interpersonal, intrapersonal, and linguistic abilities, which contribute substantially to overall MI profiles (Gerits, 2005).

Regarding place of residence, urban adolescents scored significantly higher on conscientiousness and openness than their rural counterparts, while no differences emerged for MI or other personality traits. These findings support the view that urban environments may provide greater cognitive stimulation, exposure to diverse experiences, and structured academic demands that foster openness and self-regulatory traits such as conscientiousness (Brandt et al., 2020). However, the lack of rural–urban differences in MI suggests that intellectual potential may be broadly distributed across contexts, even when personality expressions differ, reinforcing arguments that environmental influences shape trait expression more than underlying ability (Ayoub et al., 2021).

Correlation analyses demonstrated that MI was positively associated with conscientiousness, openness, agreeableness, and extraversion, while neuroticism was unrelated to MI. These results align with prior studies indicating that adaptive personality traits, particularly extraversion and openness facilitate engagement, exploration, and social interaction, which are central to the development of multiple forms of intelligence (Brandt et al., 2020). The non-significant relationship between neuroticism and MI suggests that emotional instability may not directly impede the expression of intellectual abilities, although it may influence other outcomes such as mental health or academic stress (Erfani & Mardan, 2017).

The regression analysis further clarified these relationships by showing that extraversion positively predicted MI, whereas neuroticism negatively predicted MI, when all personality traits were considered simultaneously. This finding underscores the importance of social engagement, energy, and positive effect, which are core aspects of extraversion, in facilitating diverse

intellectual skills, particularly interpersonal and linguistic intelligences (Quintero et al., 2025). The negative predictive role of neuroticism supports evidence linking emotional dysregulation to reduced cognitive flexibility and learning efficiency (Brown &Cinamon, 2016). The non-significant predictive effects of conscientiousness, openness, and agreeableness suggest that while these traits correlate with MI, their unique contributions may overlap with other personality dimensions or operate indirectly.

V. CONCLUSION

The present study examined gender and residence-based differences in Big Five personality traits and Multiple Intelligences (MI), as well as the relationships and predictive role of personality traits in explaining MI among adolescent school students. The findings indicate that while broad gender and residential differences in personality and MI were limited, specific variations were evident, particularly in neuroticism, conscientiousness, openness, and overall MI. The results further demonstrated that MI was positively associated with adaptive personality traits such as extraversion, openness, conscientiousness, and agreeableness, whereas neuroticism showed a weaker and largely non-significant association. Importantly, regression analyses revealed that extraversion emerged as a positive predictor of MI, while neuroticism negatively predicted MI, highlighting the role of emotional stability and social engagement in the expression of diverse intellectual abilities. The study emphasizes the value of teaching methods that promote emotional control and constructive social interaction in addition to cognitive abilities. Adolescents' holistic development in a variety of educational and socio-cultural contexts may benefit greatly from such an integrative approach.

VI. REFERENCE

Ayoub, M., Zhang, B., Göllner, R., Atherton, O. E., Trautwein, U., & Roberts, B. W. (2021). Longitudinal associations between parenting and child big five personality traits. *Collabra: Psychology*, *7*(1), 29766.

Brandt, N. D., Lechner, C. M., Tetzner, J., &Rammstedt, B. (2020). Personality, cognitive ability, and academic performance: Differential associations across school subjects and school tracks. *Journal of personality*, *88*(2), 249-265.

Ribas, E. C., &Vives, F. M. (2013). The contribution of psychological maturity and personality in the prediction of adolescent academic achievement. *International Journal of Educational Psychology: IJEP*, *2*(3), 246-271.

Ortet, G., Mezquita, L., Morizot, J., Ortet-Walker, J., & Ibáñez, M. I. (2022). Assessment of “los pequeños” Big Five: The Spanish version of the Big Five Personality Trait Short Questionnaire in adolescents. *Psychological Assessment*, *34*(5), e32.

Quintero, R., Aperribai, L., Aguirre, T., Rodríguez-Naveiras, E., & Borges, Á. (2025). The Relationship Between Intelligence and Personality Traits Differentiated by Gender in Spanish Adolescents. *Children*, *12*(4), 501.

Wang, S., Zhao, Y., Li, J., Wang, X., Luo, K., & Gong, Q. (2019). Brain structure links trait conscientiousness to academic performance. *Scientific reports*, *9*(1), 12168.

Davis, S. K., & Humphrey, N. (2012). Emotional intelligence predicts adolescent mental health beyond personality and cognitive ability. Personality and Individual differences, 52(2), 144-149.

Gerits, L., Derksen, J. J., Verbruggen, A. B., &Katzko, M. (2005). Emotional intelligence profiles of nurses caring for people with severe behaviour problems. Personality and individual differences, 38(1), 33-43.

Brown, D., &Cinamon, R. G. (2016). Contribution of personality to self-efficacy and outcome expectations in selecting a high school major among adolescents with learning disabilities. *Career Development and Transition for Exceptional Individuals*, *39*(4), 237-248.

Erfani, S. S., &Mardan, H. (2017). The Relationship between Big-Five Personality Traits, English Language Proficiency Scores on IELTS, and Academic Success of Iranian Foreign Students. *Theory & Practice in Language Studies (TPLS)*, *7*(11).

Table 1: t-test for difference in Gender across the variables

Variables	M/F	N	M	SD	t	df	*p*
Conscientiousness	F	450	29.056	7.399	1.342	898	0.180
	M	450	28.389	7.508			
Openness	F	450	30.702	7.933	0.683	898	0.495
	M	450	30.349	7.573			
Neuroticism	F	450	26.673	7.894	-2.079*	898	0.038
	M	450	27.747	7.589			
Agreeableness	F	450	28.669	7.229	-1.791	898	0.074
	M	450	29.533	7.248			
Extraversion	F	450	31.453	7.642	1.101	898	0.271
	M	450	30.900	7.438			
MI	F	450	277.404	30.641	3.368**	898	0.001
	M	450	270.720	28.875			

**p <0.05 ** p < 0.01*

Table 2: t-test for difference in place of residence across the variables

Variables	Residence	N	M	SD	t	df	*p*
Conscientiousness	Rural	395	27.334	7.109	-5.004**	898	0.000
	Urban	505	29.808	7.549			
Openness	Rural	395	29.942	7.574	-2.001*	898	0.046
	Urban	505	30.982	7.867			
Neuroticism	Rural	395	26.848	7.930	-1.238	898	0.216
	Urban	505	27.493	7.616			
Agreeableness	Rural	395	28.843	7.778	-0.945	898	0.345
	Urban	505	29.303	6.805			
Extraversion	Rural	395	31.311	7.820	0.474	898	0.636
	Urban	505	31.071	7.322			
MI	Rural	395	273.099	30.098	-0.854	898.000	0.394
	Urban	505	274.816	29.827			

**p <0.05 ** p < 0.01*

Table 3: Correlation among the variables

Variables	Statistic	Conscientiousness	Openness	Neuroticism	Agreeableness	Extraversion	MI
Conscientiousness	*r*	1	.496**	.371**	.413**	.411**	.140**
	p		0.000	0.000	0.000	0.000	0.000
Openness	*r*		1	.456**	.555**	.595**	.161**

	p			0.000	0.000	0.000	0.000
Neuroticism	*r*			1	.513**	.391**	0.043
	p				0.000	0.000	0.202
Agreeableness	*r*				1	.531**	.129**
	p					0.000	0.000
Extraversion	*r*					1	.187**
	p						0.000
MI	*r*						1
	p						

**p <0.05 ** p < 0.01*

Table 4: Multiple regression analysis with MI as the criterion and the personality variables as the predictors

Personality	**b**	**SE**	**β**	**t**	***p***	**95% Upper**	**95% Lower**
Conscientiousness	0.278	0.156	0.069	1.779	0.076	-0.029	0.584
Openness	0.255	0.177	0.066	1.445	0.149	-0.091	0.602
Neuroticism	-0.323	0.153	-0.084*	-2.112	0.035	-0.623	-0.023
Agreeableness	0.145	0.181	0.035	0.802	0.423	-0.210	0.499
Extraversion	0.531	0.171	0.134**	3.116	0.002	0.197	0.866

**p <0.05 ** p < 0.01*