



Emotional Stability and Academic Achievement among Primary and Secondary School Students: An Empirical Study

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Abstract: In recent years, the influence of non-cognitive factors such as personality traits on students' academic achievement has received increasing attention in educational psychology. Among these traits, emotional stability—defined as the ability to remain calm and balanced, especially under stress—has been theorized to play a vital role in learning outcomes. However, empirical research specifically examining the effects of emotional stability on academic achievement among primary and secondary school students, particularly in non-Western contexts, is still limited. This study investigates the relationship between emotional stability and academic achievement in a large sample of primary and secondary school students in China, using the Five-Factor Model of personality and considering moderating variables such as gender, grade level, and urban-rural differences. A cross-sectional survey of 1,200 students from grades 4 to 9 across three provinces assessed emotional stability using the Big Five Inventory and measured academic achievement via standardized end-of-term test scores in core subjects. Data were analyzed using descriptive statistics, Pearson's correlation, and multiple regression analysis. The results showed a significant positive correlation between emotional stability and academic achievement ($r = 0.36$, $p < 0.01$), with emotional stability remaining a significant predictor even after controlling for gender, socio-economic status, and parental education. The association was particularly strong among secondary school students and those in urban areas. These findings underscore the importance of emotional stability as a non-cognitive predictor of academic success in primary and secondary education, offering implications for educational practice and student support, and suggesting avenues for further research.

Keywords: Emotional stability; Academic achievement; Five-Factor Model; Primary students, Secondary students

1 Introduction

1.1 Background and Rationale

Academic achievement has traditionally been regarded as a function of cognitive ability, quality of instruction, and socio-economic background. However, over the past two decades, a substantial body of research has demonstrated that non-cognitive factors, including personality traits, play a crucial role in shaping students' learning processes and educational outcomes (Poropat, 2009; Mammadov, 2022). Emotional stability, a key dimension in the Five-Factor Model of personality, is increasingly recognized as an important predictor of not only mental health but also academic performance.

Emotional stability refers to an individual's capacity to remain calm, resilient, and consistent in emotional response, particularly when faced with academic stressors such as

examinations, deadlines, or interpersonal conflicts. Students with higher emotional stability are generally less affected by negative emotions such as anxiety, frustration, and anger, allowing them to focus more effectively on their studies (Vedel, 2014).

While the relationship between emotional stability and academic achievement has been documented in Western contexts, there is a lack of comprehensive empirical studies focusing on primary and secondary school students in China. Given the unique cultural and educational landscape, investigating this relationship in the Chinese context is both theoretically meaningful and practically valuable.

1.2 Research Questions

This study seeks to address the following research questions:

(1) Is there a significant relationship between emotional stability and academic achievement among primary and secondary school students in China?

(2) Does the strength of this relationship differ according to demographic variables such as gender, grade level, and urban-rural location?

(3) What are the implications of emotional stability for educational practice and policy?

1.3 Structure of the Paper

The remainder of this paper is organized as follows. Section 2 reviews relevant literature on emotional stability and academic achievement. Section 3 details the methods used in this study, including sample, measurement instruments, and statistical analysis. Section 4 presents the results. Section 5 discusses the implications and limitations of the findings, and Section 6 concludes with recommendations for future research.

2 Literature Review

2.1 The Five-Factor Model and Emotional Stability

The Five-Factor Model (FFM) of personality, also known as the “Big Five,” has become the dominant framework for understanding human personality across cultures (Poropat, 2009; Mammadov, 2022). The five domains — Openness, Conscientiousness, Extraversion, Agreeableness, and Emotional Stability (often termed the opposite of Neuroticism)—have been repeatedly validated as robust predictors of various life outcomes. Emotional stability refers to the extent to which individuals are calm, resilient, and less likely to experience negative emotions under stress (Vedel, 2014).

Emotional stability is distinct from other personality traits in that it directly influences how students react to setbacks, stress, and academic pressure. High emotional stability allows individuals to maintain composure and rationality when facing difficult academic tasks, while low emotional stability (or high neuroticism) can lead to anxiety, irritability, and poor coping mechanisms (Chamorro-Premuzic & Furnham, 2003).

2.2 Emotional Stability and Academic Achievement: Global Evidence

A growing number of empirical studies have examined the link between emotional stability and academic

performance. Poropat’s (2009) meta-analysis of the Big Five and academic achievement, encompassing over 70,000 participants across 100 studies, found that emotional stability was a significant predictor of academic success, although not as strong as conscientiousness. Mammadov (2022) confirmed these findings in a more recent meta-analysis, showing a small to moderate but significant positive relationship between emotional stability and academic achievement at various educational levels.

Hakimi, Hejazi, and Lavasani (2011), in a study of Iranian secondary school students, reported that students with higher emotional stability scores achieved better grades. Similarly, Steinmayr and Spinath (2009) demonstrated that students who could regulate their emotions and remain calm under pressure were more likely to perform well academically, independent of their intelligence or socioeconomic status. These patterns have been replicated in Western, Middle Eastern, and East Asian samples, suggesting that the link is cross-culturally robust.

2.3 Mechanisms Linking Emotional Stability to Academic Outcomes

Several mechanisms may explain why emotional stability predicts academic achievement. First, emotionally stable students tend to experience lower levels of test anxiety and academic stress (Vedel, 2014; Sanchez-Cardona et al., 2021). This emotional calmness allows them to focus their cognitive resources on the task at hand, rather than being distracted by worry or fear of failure. Second, emotional stability is associated with better coping strategies, persistence, and resilience when faced with setbacks (Duckworth & Seligman, 2005).

Furthermore, emotional stability often interacts with other non-cognitive factors such as self-discipline and grit (Duckworth et al., 2007). These traits collectively enable students to manage frustration, sustain effort, and maintain motivation over long periods—key ingredients for academic success.

2.4 Emotional Stability and Academic Achievement in Chinese Students

Although most research has focused on Western populations, emerging studies from China and other East Asian contexts have begun to replicate these findings. For example, a recent study by Li et al. (2020) found that Chinese

secondary school students with higher emotional stability exhibited better academic results and reported lower perceived academic stress.

Chinese culture places high value on academic success and emotional restraint. As a result, emotional stability may play an even greater role in student achievement, as those who cannot manage stress effectively may be at greater risk for academic burnout (Sun et al., 2019). Nevertheless, there remains a paucity of large-scale, systematic investigations into how emotional stability influences academic outcomes across different Chinese educational contexts.

2.5 Gaps in the Literature

Despite the growing body of evidence, several research gaps persist. First, there is a lack of research focusing specifically on primary school students, with most studies concentrating on secondary or university populations. Second, relatively few studies have examined potential moderators such as gender, urban-rural differences, or family socioeconomic status. Finally, few empirical investigations have systematically analyzed the mechanisms through which emotional stability impacts academic outcomes in the context of China's high-pressure education system.

This study seeks to address these gaps by exploring the relationship between emotional stability and academic achievement in a large, representative sample of Chinese primary and secondary school students, with a focus on potential moderating variables.

3 Methods

3.1 Participants

This study involved a cross-sectional sample of 1,200 students drawn from primary and secondary schools across three provinces in China: Shandong, Jiangsu, and Sichuan. The sample included 600 primary school students (grades 4 – 6, aged 10 – 12) and 600 secondary school students (grades 7 – 9, aged 13 – 15).

Of the total participants, 610 were male (50.8%) and 590 were female (49.2%). Urban students comprised 54% of the sample, while the remaining 46% were from rural areas. Students were recruited from 12 randomly selected schools—4 in each province, with an equal number of urban and rural schools represented.

The sample was designed to ensure diversity in socioeconomic status, school type (public/private), and

family background. Prior to participation, informed consent was obtained from both students and their legal guardians. Ethical approval for the study was granted by the Institutional Review Board of the lead research university.

3.2 Measures

3.2.1 Emotional Stability

Emotional stability was measured using the Emotional Stability subscale of the Chinese version of the Big Five Inventory (BFI), which has been validated in previous research (Li et al., 2020). The subscale consists of 8 items (e.g., “I am relaxed most of the time,” “I seldom feel blue”), rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicated higher emotional stability. Cronbach's alpha in this study was 0.86, indicating good internal consistency.

3.2.2 Academic Achievement

Academic achievement was assessed using students' standardized end-of-term test scores in three core subjects: Chinese, Mathematics, and English. Test scores were obtained from school records and standardized within each grade level to account for differences in difficulty and scoring. A composite academic achievement index was computed by averaging the standardized scores for the three subjects.

3.2.3 Covariates

Several demographic and family-related variables were included as covariates: gender, grade level, urban/rural location, parental education level (highest degree attained by either parent), and family socioeconomic status (measured via a brief parent questionnaire).

3.3 Procedure

Data collection took place during the spring semester of 2024. After receiving permission from school administrators, the research team visited each participating school. Students completed the BFI and demographic questionnaire in their classrooms, supervised by a research assistant and a teacher not involved in the grading process. The survey required approximately 20 minutes to complete.

School administrators provided access to the students' academic records with parental consent. All responses and records were anonymized to protect participant confidentiality.

3.4 Data Analysis

Data were analyzed using SPSS (Version 27.0). Initial analyses included descriptive statistics for all variables and reliability checks for measurement instruments. Pearson's correlation coefficients were computed to examine the relationship between emotional stability and academic achievement. Multiple linear regression analyses were conducted to test whether emotional stability significantly predicted academic achievement after controlling for covariates.

Subgroup analyses (by gender, school level, and urban/rural status) were performed to explore potential moderating effects. For all statistical tests, significance was set at $p < 0.05$.

4 Results

4.1 Descriptive Statistics

The final sample consisted of 1,200 students, with a nearly equal distribution across primary ($n = 600$) and secondary ($n = 600$) school levels, and between males ($n = 610$) and females ($n = 590$). The mean score for emotional stability (ES) was 3.42 ($SD = 0.67$) on a 5-point scale. The composite academic achievement index had a mean of 0.00 ($SD = 0.98$), as scores were standardized within each grade level.

Table 1 presents descriptive statistics for the main variables across the full sample and by subgroups

Variable	Full Sample ($N=1200$)	Primary ($n=600$)	Secondary ($n=600$)	Urban ($n=648$)	Rural ($n=552$)
Emotional Stability (ES)	3.42 (0.67)	3.56 (0.61)	3.28 (0.69)	3.49 (0.65)	3.34 (0.68)
Academic Achievement	0.00 (0.98)	0.06 (0.96)	-0.06 (0.99)	0.10 (0.97)	-0.12 (0.98)

4.2 Correlation Analysis

Pearson's correlation analysis revealed a significant positive relationship between emotional stability and academic achievement across the entire sample ($r = 0.36$, $p < 0.01$). This relationship held within both primary ($r = 0.31$, $p < 0.01$) and secondary ($r = 0.39$, $p < 0.01$) school subgroups. Correlations were also calculated for gender and urban/rural

status:

Male students: $r = 0.34$, $p < 0.01$

Female students: $r = 0.37$, $p < 0.01$

Urban students: $r = 0.38$, $p < 0.01$

Rural students: $r = 0.32$, $p < 0.01$

4.3 Multiple Regression Analysis

To further test the predictive power of emotional stability on academic achievement, a multiple linear regression was performed with academic achievement as the dependent variable and emotional stability, gender, grade level, urban/rural status, parental education, and family socioeconomic status as independent variables.

The overall model was significant, $F(6, 1193) = 28.51$, $p < 0.001$, and explained 19.4% of the variance in academic achievement ($R^2 = 0.194$).

Table 2. Multiple Regression Analysis Predicting Academic Achievement

Predictor	B	SE	β	t	p
Emotional Stability	0.42	0.05	0.34	8.47	<.001
Gender (female=1)	0.09	0.04	0.06	2.21	0.028
Grade Level (secondary)	-0.13	0.04	-0.09	-3.14	0.002
Urban (urban=1)	0.12	0.04	0.08	2.97	0.003
Parental Education	0.07	0.03	0.06	2.34	0.020
Family SES	0.10	0.04	0.07	2.51	0.012

Emotional stability remained a significant predictor ($\beta = 0.34$, $p < 0.001$) after controlling for all covariates, suggesting its robust association with academic achievement.

4.4 Subgroup Analyses

4.4.1 By School Level

Regression analyses conducted separately for primary and secondary school students showed that emotional stability predicted academic achievement in both groups, but the effect was stronger in secondary school students ($\beta = 0.39$, $p < 0.001$) compared to primary school students ($\beta = 0.28$, $p < 0.001$).

4.4.2 By Gender

Both male and female students showed a significant relationship between emotional stability and academic achievement, with a slightly stronger effect for female students.

4.4.3 By Urban/Rural Status

Urban students exhibited a stronger association ($\beta =$

0.38, $p < 0.001$) than rural students ($\beta = 0.29$, $p < 0.001$), indicating potential contextual differences.

4.5 Summary of Results

In summary, the results consistently indicate that higher emotional stability is associated with better academic performance among primary and secondary school students, across gender and urban-rural divides. The relationship is particularly pronounced among secondary school and urban students.

5 Discussion

5.1 Interpretation of Key Findings

This study investigated the relationship between emotional stability and academic achievement among primary and secondary school students in China. The results provide robust evidence that emotional stability is a significant, positive predictor of academic success across gender, school level, and urban-rural settings. These findings align with previous research from Western and Asian contexts (Poropat, 2009; Hakimi et al., 2011; Mammadov, 2022) and extend the literature by confirming the association within a large and diverse sample of Chinese students.

The observed correlation ($r = 0.36$, $p < 0.01$) and regression coefficient ($\beta = 0.34$, $p < 0.001$) are both consistent with earlier meta-analyses that have found emotional stability, while not as dominant as conscientiousness, is nonetheless a meaningful predictor of academic performance (Poropat, 2009; Vedel, 2014). This effect was especially pronounced among secondary school and urban students, suggesting that as students mature and academic demands increase, emotional stability becomes even more critical for academic success.

5.2 Theoretical Implications

The results reinforce the importance of personality traits — particularly emotional stability — as significant non-cognitive factors influencing educational outcomes. According to the Five-Factor Model (FFM), personality is relatively stable but can be shaped through interventions, especially during adolescence (Chamorro-Premuzic & Furnham, 2003). The present study demonstrates that emotional stability, by enabling students to remain calm, focused, and resilient in the face of academic stress, supports better learning and higher achievement.

Moreover, these findings contribute to an emerging body of cross-cultural research, confirming that the link between emotional stability and academic achievement is not limited to Western populations. The results suggest that cultural factors—such as the emphasis on emotional restraint and academic performance in China — may amplify the impact of emotional stability on learning outcomes.

5.3 Practical Implications

The implications for educational practice are substantial. First, schools should recognize that academic achievement is not solely a function of intelligence or instructional quality, but also depends on students' emotional health and personality development. School counselors and educators might consider screening for emotional stability and offering targeted interventions, such as social-emotional learning (SEL) programs, mindfulness training, and resilience-building activities.

Second, the stronger effect observed among secondary and urban students suggests that interventions targeting emotional stability may be especially effective during the middle school years and in rapidly changing urban environments. Teachers should be trained to identify signs of emotional distress and to promote classroom environments that reduce anxiety and foster emotional security.

Third, the results suggest that parental involvement and home environments that support emotional regulation can indirectly benefit students' academic achievement. Parent training workshops and community resources aimed at enhancing children's emotional skills should be promoted alongside traditional academic tutoring.

5.4 Limitations

Despite the strengths of this study—including a large, diverse sample and validated measurement tools — several limitations must be acknowledged.

First, the cross-sectional design precludes causal inferences. While emotional stability is associated with academic achievement, the directionality of this relationship cannot be conclusively established; it is possible that academic success also enhances emotional stability over time.

Second, the reliance on self-report measures for emotional stability may introduce response bias. Although efforts were made to assure anonymity and encourage honest responses, some students may have provided socially

desirable answers.

Third, although the sample spanned three provinces and included both urban and rural schools, it may not be fully representative of all regions in China, particularly minority or highly disadvantaged populations. Future research should employ more geographically and culturally diverse samples.

Fourth, while academic achievement was measured using standardized scores across three subjects, other important outcomes — such as creativity, well-being, or long-term educational attainment—were not assessed.

5.5 Directions for Future Research

To address these limitations, future studies should consider employing longitudinal designs to clarify causal relationships between emotional stability and academic achievement. Intervention studies evaluating the effectiveness of SEL programs or other strategies to enhance emotional stability in improving academic performance would also be valuable.

Furthermore, research should investigate potential mediating and moderating variables, such as family climate, peer support, and school culture, to understand under what conditions emotional stability has the greatest impact. Additional qualitative studies may also enrich the findings by exploring students' lived experiences of emotional challenges and their coping strategies in academic settings.

Finally, extending research to include other non-cognitive traits — such as conscientiousness, grit, and openness to experience — could provide a more holistic understanding of the personality – achievement relationship among students in China and beyond.

6 Conclusion

This study investigated the impact of emotional stability on academic achievement among primary and secondary school students in China. The results clearly indicate that students with higher levels of emotional stability consistently achieve better academic outcomes, regardless of gender, school level, or urban-rural background. These findings extend existing international research by demonstrating the robustness of this relationship within the Chinese context and across a diverse range of students.

Theoretically, the study reinforces the importance of non-cognitive factors — specifically emotional stability — within educational psychology, adding nuance to our

understanding of how personality traits shape learning processes and outcomes. Practically, the results highlight the need for schools, teachers, and parents to pay greater attention to students' emotional development alongside cognitive and academic skills.

Implementing interventions that promote emotional stability, such as social-emotional learning programs, counseling services, and mindfulness training, may contribute not only to improved academic performance but also to students' overall well-being and resilience. Given the increasing academic pressure faced by Chinese students, such interventions could be especially valuable.

While this study provides important insights, it is not without limitations. Future research should employ longitudinal and experimental designs to clarify causality, expand the diversity of samples, and examine additional non-cognitive and contextual factors. By advancing our understanding of the complex interplay between personality and achievement, researchers and practitioners alike can better support students in realizing their academic and personal potential.

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