



# Big Five Personality Traits and Academic Stress Among Undergraduate Psychology Students

Olivia Ayuningrum, Ahmad Hidayat ✉

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**Abstract:** Academic stress remains a common psychological challenge among university students and may negatively affect academic performance and well-being. This study aimed to examine the relationships between Big Five personality traits and academic stress among undergraduate psychology students using a cross-sectional correlational design. A total of 116 students were recruited through convenience sampling. Data were collected using an adapted Big Five Inventory (33 items; Extraversion  $\alpha = 0.829$ , Agreeableness  $\alpha = 0.672$ , Conscientiousness  $\alpha = 0.729$ , Neuroticism  $\alpha = 0.666$ , and Openness to Experience  $\alpha = 0.772$ ) and an academic stress scale (21 items;  $\alpha = 0.846$ ), both of which demonstrated acceptable internal consistency. Due to non-normal data distribution, Spearman's rank correlation analysis was employed. The results showed that neuroticism was significantly positively associated with academic stress ( $p < 0.05$ ), whereas extraversion, agreeableness, conscientiousness, and openness to experience were significantly negatively associated with academic stress ( $p < 0.05$ ). Openness showed a moderate negative correlation ( $r = -0.366$ ). These findings indicate that personality traits are significantly associated with academic stress. These findings offer valuable insights into psychological research on academic stress and encourage further research that addresses the limitations of the current study.

## Introduction

Academic stress is a widespread psychological issue among university students, driven by the increasing complexity and demands of higher education. The transition from secondary school to university presents academic, social, and personal challenges that require continuous adaptation and self-regulation. Students are also expected to master academic content while fulfilling multiple roles, including intellectual, social, and professional development, which together create significant psychological demands (1, 2). Failure to effectively adapt to these demands may result in psychological strain, impaired academic performance, and deteriorating mental well-being. In this context, academic stress represents a critical issue in educational psychology, as it reflects the discrepancy between academic demands and an individual's perceived ability to meet those demands (3, 4).

The urgency of addressing academic stress is supported by empirical evidence demonstrating its increasing prevalence among adolescents and young adults. The prevalence of stress among university students globally ranges from 38% to 71%, based on studies

conducted in various universities, including medical students (5). In Indonesia, the prevalence of stress continues to increase, with 36.7% to 71.6% of university students reported experiencing stress. Empirical studies also indicate that academic stress among students is widespread and multifactorial. For instance, environmental factors contribute to stress in 64.1% of students, while academic workload accounts for 46.9% of stress experiences (5). Additional research demonstrates that academic stress tends to increase across semesters, with a significant proportion of students experiencing moderate to high levels of stress (6, 7). Qualitative findings also highlight real-life stressors such as academic workload, difficulties in adaptation to campus environments, interpersonal challenges, and perceived academic evaluation pressures (8, 9). These findings collectively indicate that academic stress is not merely an individual problem but a systemic issue within higher education that requires comprehensive theoretical and empirical investigation.

Despite growing awareness of academic stress, understanding its underlying determinants remains a challenge. Academic stress is influenced by both external factors, such as academic demands and environmental

pressures, and internal factors, particularly personality traits and coping mechanisms (4, 10). Personality, as a relatively stable psychological characteristic, plays a crucial role in shaping individual responses to stressors. The Big Five personality model comprising extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience has been widely recognized as a robust framework for explaining individual differences in behavior, emotional regulation, and stress responses (11, 12). Previous studies have shown that neuroticism is positively associated with academic stress, whereas extraversion, agreeableness, conscientiousness, and openness are negatively associated with stress levels (4, 13). However, findings across studies remain inconsistent, suggesting that the relationship between personality traits and academic stress may vary across cultural and educational contexts (14, 15). In particular, evidence regarding the role of Big Five personality traits in predicting academic stress among students in collectivist settings such as Indonesia remains limited.

Therefore, this study aims to examine the relationship between Big Five personality traits and academic stress among university students. By employing a quantitative correlational design and utilizing standardized instruments, namely the Big Five Inventory (BFI) and an academic stress scale adapted from Sarafino and Timothy's theoretical framework, this research seeks to provide empirical evidence regarding the role of personality traits in academic stress experiences among students (12, 16). The findings of this study are expected to contribute to the advancement of psychological theory in the domain of educational and personality psychology, while also offering practical implications for developing targeted interventions to enhance students' psychological resilience and academic well-being.

## Methodology

### Study Design and Rationale

This study employed a quantitative correlational design to examine the relationship between Big Five personality traits and academic stress among university students. A correlational approach was selected because it enables the identification and quantification of the degree and direction of associations between psychological variables without experimental manipulation, which is appropriate for investigating naturally occurring individual differences

in personality and stress responses (17). The research framework was grounded in the assumption that personality traits represent relatively stable internal factors that may influence students' psychological reactions to academic demands, thereby shaping their level of academic stress (18).

The study was conducted in a cross-sectional manner, in which data on personality traits and academic stress were collected simultaneously from participants within a single time frame. This design was considered suitable for capturing the current psychological conditions of students and for testing the hypothesized relationships between variables in an efficient and methodologically rigorous manner.

### Population, Sample, and Sampling Procedure

The target population comprised all active undergraduate students enrolled in the Faculty of Psychology at Universitas Islam Riau during the academic years 2017–2020, totaling 843 students. The distribution of the population across cohorts is presented in **Table 1**, which shows that the largest proportion of students originated from the 2020 cohort (233 students), followed by 2018 (214 students), 2017 (205 students), and 2019 (191 students). This population profile reflects the institutional academic structure and served as the basis for determining the sample size.

To estimate the minimum required sample size, the Slovin formula was applied with a margin of error of 10%, as expressed in the following **Equation 1**, where  $n$  represents the sample size,  $N$  denotes the population size, and  $e$  indicates the acceptable error rate (19). The 10% margin of error was considered acceptable given the exploratory correlational nature of the study and practical limitations related to participant accessibility within the target population. Substituting the population size of 843 and the error rate (0.1) into the equation yielded an estimated sample size of 89.39, which was rounded to 90 participants. However, the actual data collection involved 116 students, thereby exceeding the minimum sample requirement and increasing the statistical power and stability of the analysis.

Participants were selected using a non-probability convenience sampling technique. The use of convenience sampling in this study was primarily based on practical considerations and field conditions. Data collection was conducted during a period when access to the target

**Table 1.** Distribution of active students in the even semester of the 2017–2020 academic years.

| Cohort Year             | Semester | Number of Students |
|-------------------------|----------|--------------------|
| 2017                    | VIII     | 205                |
| 2018                    | VI       | 214                |
| 2019                    | IV       | 191                |
| 2020                    | II       | 233                |
| <b>Total Population</b> |          | <b>843</b>         |

**Source:** Academic Affairs Office Data, 2021.

$$n = \frac{N}{1 + Ne^2} \quad (\text{Eq. 1})$$

population was limited, making an online survey approach the most feasible option. This method allowed the researchers to reach active students of the Faculty of Psychology from cohorts 2017–2020 who were readily accessible and willing to participate, while still meeting the predefined inclusion criteria (20). Data were collected through an online survey distributed via social media platforms, including WhatsApp, Line, and Instagram, ensuring broad reach within the target population.

Although convenience sampling facilitated efficient data collection, this technique may limit sample representativeness and increase the potential for selection bias. Therefore, the findings should be interpreted cautiously, particularly regarding their generalizability to broader student populations

### Variables and Operational Definitions

The study involved two primary variables: Big Five personality traits as the independent variable and academic stress as the dependent variable. Big Five

personality traits were conceptualized as a multidimensional construct consisting of five trait domains: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. These traits were measured using the Big Five Inventory (BFI) developed by Ramdhani, which was based on the theoretical framework of McCrae and Costa and later adapted by Ariska for use in the Indonesian context (12, 21). The scale consisted of 44 items and demonstrated satisfactory reliability coefficients across personality dimensions, namely extraversion ( $\alpha = 0.73$ ), agreeableness ( $\alpha = 0.74$ ), conscientiousness ( $\alpha = 0.78$ ), neuroticism ( $\alpha = 0.74$ ), and openness ( $\alpha = 0.79$ ). The adapted instrument retained the original five-factor structure, with items distributed across the corresponding personality dimensions to preserve construct validity.

Academic stress was defined as an emotional and psychological tension arising from students' perceptions of academic demands as exceeding their coping capacities. This construct encompasses physiological, emotional,

**Table 2.** Blueprint of the academic stress scale before try-out.

| Aspect                      | Indicators                               | F          | UF       | Total     |
|-----------------------------|--|------------|----------|-----------|
| Biological Reactions        | 1. Headache                              | 26         | -        | 9         |
|                             | 2. Stomachache                           | 39         | -        |           |
|                             | 3. Heart palpitations                    | 10         | -        |           |
|                             | 4. Insomnia                              | 38         | -        |           |
|                             | 5. Easily fatigued                       | 19         | -        |           |
|                             | 6. Cold sweating                         | 3, 31      | -        |           |
|                             | 7. Loss of appetite                      | 36         | -        |           |
|                             | 8. Frequent urination                    | 32         | -        |           |
| Emotional Reactions         | 1. Easily angry and anxious              | 4, 28      | -        | 8         |
|                             | 2. Easily irritated                      | 1, 5       | -        |           |
|                             | 3. Restlessness when facing exams        | 24         | -        |           |
|                             | 4. Panic when facing many assignments    | 2, 8       | 25       |           |
| Cognitive Reactions         | 1. Lack of self-confidence               | 35         | -        | 9         |
|                             | 2. Easily forgetful                      | 40         | -        |           |
|                             | 3. Negative thinking                     | -          | 30       |           |
|                             | 4. Decreased academic performance        | 29         | -        |           |
|                             | 5. Loss of hope                          | 20, 34     | 37       |           |
|                             | 6. Feeling worthless                     | -          | 33       |           |
|                             | 7. Difficulty in making decisions        | 9          | -        |           |
| Social Behavioral Reactions | 1. Nervousness                           | 6          | -        | 14        |
|                             | 2. Lying behavior                        | 11         | -        |           |
|                             | 3. Frequent absenteeism                  | 16         | -        |           |
|                             | 4. Lack of discipline                    | 13, 15, 27 | -        |           |
|                             | 5. Indifference toward academic subjects | 14, 17     | -        |           |
|                             | 6. Complaining frequently                | 18         | -        |           |
|                             | 7. Social withdrawal                     | 7, 12      | -        |           |
|                             | 8. Fear of meeting lecturers             | 21, 22, 23 | -        |           |
| <b>Total</b>                |  | <b>36</b>  | <b>4</b> | <b>40</b> |

cognitive, and behavioral responses to academic stressors. In this study, academic stress was operationalized using an academic stress scale adapted by Amalia (22), based on the stress model proposed by Sarafino and Timothy (16). The scale consisted of 40 items and demonstrated a Cronbach's alpha coefficient of 0.823. The scale was designed to capture multidimensional manifestations of stress in academic contexts and consisted of four dimensions: biological reactions, emotional reactions, cognitive reactions, and social-behavioral reactions. The organization of items across these dimensions was intended to maintain alignment with the theoretical construct of academic stress.

### Instruments and Measurement

Data were collected using two standardized self-report instruments: the Academic Stress Scale and the Big Five Inventory. The Academic Stress Scale consisted of 40 items, including 36 favorable and 4 unfavorable statements, representing four domains of stress responses: biological reactions, emotional reactions, cognitive reactions, and social-behavioral reactions. The blueprint of the scale, as summarized in **Table 2**, illustrates the distribution of items across these domains and indicators, ensuring comprehensive coverage of academic stress manifestations.

The Big Five Inventory comprised 44 items, including 15 favorable and 29 unfavorable statements, designed to measure the five personality dimensions. The blueprint of the BFI, presented in **Table 3**, demonstrates the allocation of items across personality dimensions and item polarity. Both instruments employed a four-point Likert scale ranging from "strongly disagree" to "strongly agree," with scoring procedures adjusted for favorable and unfavorable items. This scoring system was adopted to enhance response variability and reduce central tendency bias.

Prior to data collection, the instruments underwent validity and reliability testing. Validity was assessed to ensure that each item accurately represented the intended construct, while reliability analysis was conducted to evaluate internal consistency of the scales. These psychometric evaluations were conducted in accordance with standard measurement principles in psychological research (23).

### Research Procedure

The research procedure was conducted in several sequential stages. Initially, the researchers performed a contextual analysis of the research setting to identify the characteristics of the target population and ensure the suitability of the instruments for the academic

environment. Subsequently, a pilot testing phase was conducted to evaluate the clarity and psychometric properties of the measurement instruments. Items that did not meet validity and reliability criteria were revised or excluded to ensure methodological rigor.

Following instrument validation, the main data collection was conducted using an online survey platform. Participants were provided with information regarding the study objectives and instructions for completing the questionnaires. Participation was voluntary, and respondents were required to complete both the Academic Stress Scale and the Big Five Inventory. Data were automatically recorded and compiled for further analysis.

To minimize response bias, standardized instructions were provided, and anonymity was maintained throughout the data collection process. The online distribution strategy was chosen to increase accessibility and participation rates among students from different cohorts and academic backgrounds.

### Data Analysis

Data analysis was conducted using non-parametric statistical techniques due to the distribution characteristics of the data. Prior to hypothesis testing, assumption tests were performed, including normality and linearity tests, to determine the suitability of parametric or non-parametric methods. Based on the results of these tests, Spearman's rank correlation coefficient was selected as the primary analytical technique.

Spearman's rank correlation was employed to examine the strength and direction of relationships between each Big Five personality dimension and academic stress. This method was chosen because it is appropriate for ordinal data and does not require normal distribution assumptions, making it suitable for psychological data derived from Likert-type scales. The correlation coefficients were interpreted according to established statistical conventions, with significance levels determined at conventional alpha thresholds.

The analytical framework enabled the identification of differential relationships between personality traits and academic stress, thereby providing empirical evidence for the role of personality as an internal determinant of stress among university students.

### Ethical Considerations

Ethical considerations were integrated throughout the research process. Participation was voluntary, and all participants were provided with informed consent at the beginning of the questionnaire. Participants were informed

**Table 3.** Blueprint of the big five inventory scale before try-out.

| Indicator         | Favorable     | Unfavorable                  | Total     |
|-------------------|---------------|------------------------------|-----------|
| Extraversion      | 5, 17, 37     | 2, 6, 15, 20, 39             | 8         |
| Agreeableness     | 9, 31, 36     | 26, 32, 35, 41, 43, 44       | 9         |
| Conscientiousness | 4, 14, 23, 34 | 1, 12, 25, 29, 30            | 9         |
| Neuroticism       | 11, 38, 42    | 8, 27, 28, 40, 33            | 8         |
| Openness          | 19, 22        | 3, 7, 10, 13, 16, 18, 21, 24 | 10        |
| <b>Total</b>      | <b>15</b>     | <b>29</b>                    | <b>44</b> |

about the study objectives and their willingness to participate. All data were kept confidential, and participants' identities were anonymized to protect their privacy. The study adhered to fundamental ethical principles, including voluntary participation, informed consent, confidentiality, and responsible data management.

## Results

### Research Procedure and Instrument Refinement

Prior to hypothesis testing, the research instruments underwent rigorous psychometric evaluation to ensure their suitability for measuring the study variables. The academic stress scale initially consisted of 40 items; however, item discrimination analysis revealed that 19 items did not meet the acceptable criteria and were therefore excluded. Consequently, 21 items were retained and reorganized to represent four dimensions of academic stress, namely biological reactions, emotional reactions, cognitive reactions, and social-behavioral reactions. Although the removal of a relatively large number of items may have reduced some breadth of the original item pool, the retained items were considered sufficient to maintain adequate representation of the multidimensional construct of academic stress, as they still covered its core theoretical dimensions (16, 24).

A similar procedure was applied to the Big Five Inventory (BFI). From the original 44 items, 11 items were removed based on item discrimination results, resulting in a final set of 33 items distributed across the five personality dimensions: extraversion, agreeableness, conscientiousness, neuroticism, and openness. While this item reduction may have limited the coverage of certain sub-facets within each personality dimension, the retained items demonstrated satisfactory psychometric properties and remained consistent with the Five-Factor Theory of Personality proposed by McCrae and Costa (25). Overall, the refinement process was aimed at balancing construct coverage with measurement quality and construct validity.

Reliability testing further demonstrated that both instruments possessed satisfactory internal consistency. The academic stress scale showed a Cronbach's alpha coefficient of 0.846, while the Big Five Inventory dimensions demonstrated acceptable reliability coefficients, namely Extraversion ( $\alpha = 0.829$ ), Agreeableness ( $\alpha = 0.672$ ), Conscientiousness ( $\alpha = 0.729$ ), Neuroticism ( $\alpha = 0.666$ ), and Openness to Experience ( $\alpha = 0.772$ ). These findings indicate that the retained items

consistently measured the intended psychological constructs and were appropriate for subsequent statistical analysis. Although the removal of several items improved item discrimination and internal consistency, it may have reduced the breadth of construct representation. Therefore, the findings should be interpreted with consideration that some aspects of academic stress and personality traits may not have been fully captured by the retained items.

### Characteristics of Research Participants

The study involved a total of 116 undergraduate students from the Faculty of Psychology at Universitas Islam Riau, drawn from cohorts between the 2017 and 2020 academic years. The sample consisted predominantly of female students, reflecting the demographic composition of the faculty. Participants varied in age and academic year, providing a representative overview of psychology students at different stages of their academic journey.

### Descriptive Overview of Personality Traits and Academic Stress

Descriptive statistical analysis was conducted to examine the general distribution of Big Five personality traits and academic stress levels among participants. The findings indicate that personality traits were not evenly distributed across dimensions.

Research data based on descriptive statistical analysis showed that the mean (M) score for extraversion was 16.01 with a standard deviation (SD) of 2.405. Agreeableness had a mean (M) of 7.46 with a standard deviation (SD) of 1.058. Conscientiousness showed a mean (M) of 17.22 with a standard deviation (SD) of 2.537. Neuroticism had a mean (M) of 15.51 with a standard deviation (SD) of 1.681. Openness had a mean (M) of 17.35 with a standard deviation (SD) of 2.397, while academic stress showed a mean (M) of 57.22 with a standard deviation (SD) of 5.324. Detailed description of research data is presented in **Table 4**.

The categorization results indicated that for extraversion, most participants fell into the low category (44.0%), suggesting a tendency toward introverted characteristics. This indicates that most students preferred solitary activities, exhibited lower levels of social assertiveness, and were less inclined toward high external stimulation. In contrast, agreeableness was predominantly in the moderate category (35.3%), reflecting an average tendency toward cooperation, empathy, and interpersonal harmony.

**Table 4.** Description of the research data.

| Variable          | Empirical Score |      |       |       |
|-------------------|-----------------|------|-------|-------|
|                   | Xmin            | Xmax | Mean  | SD    |
| Extraversion      | 8               | 22   | 16.01 | 2.405 |
| Agreeableness     | 5               | 10   | 7.46  | 1.058 |
| Conscientiousness | 11              | 26   | 17.22 | 2.537 |
| Neuroticism       | 11              | 19   | 15.51 | 1.681 |
| Openness          | 10              | 23   | 17.35 | 2.397 |
| Academic Stress   | 42              | 72   | 57.22 | 5.324 |

Similarly, conscientiousness was mostly in the moderate category (37.1%), indicating an average level of self-discipline, organization, and responsibility in managing academic tasks. Neuroticism showed that most

**Table 5.** Categorization norms.

| Category  | Interval Formula                 |
|-----------|----------------------------------|
| Very High | $M + 1,5 SD < X \leq X_{Max}$    |
| High      | $M + 0,5 SD \leq X < M + 1,5 SD$ |
| Moderate  | $M - 0,5 SD \leq X < M + 0,5 SD$ |
| Low       | $M - 1,5 SD \leq X < M - 0,5 SD$ |
| Very Low  | $X_{Min} < M - 1,5 SD$           |

**Table 6.** Extraversion categorization.

| Category     | Interval         | Frequency  | %          |
|--------------|------------------|------------|------------|
| Very High    | $20 \leq X < 22$ | 3          | 2.6        |
| High         | $17 \leq X < 20$ | 34         | 29.3       |
| Moderate     | $15 \leq X < 17$ | 23         | 19.8       |
| Low          | $12 \leq X < 15$ | 51         | 44.0       |
| Very Low     | $8 \leq X < 12$  | 5          | 4.3        |
| <b>Total</b> |                  | <b>116</b> | <b>100</b> |

**Table 7.** Agreeableness categorization.

| Category     | Interval        | Frequency  | %          |
|--------------|-----------------|------------|------------|
| Very High    | $9 \leq X < 10$ | 2          | 1.7        |
| High         | $8 \leq X < 9$  | 15         | 12.9       |
| Moderate     | $7 \leq X < 8$  | 41         | 35.3       |
| Low          | $6 \leq X < 7$  | 39         | 33.6       |
| Very Low     | $5 \leq X < 6$  | 19         | 16.4       |
| <b>Total</b> |                 | <b>116</b> | <b>100</b> |

**Table 8.** Conscientiousness categorization.

| Category     | Interval         | Frequency  | %          |
|--------------|------------------|------------|------------|
| Very High    | $21 \leq X < 26$ | 9          | 7.8        |
| High         | $18 \leq X < 21$ | 17         | 14.7       |
| Moderate     | $16 \leq X < 18$ | 43         | 37.1       |
| Low          | $13 \leq X < 16$ | 42         | 36.2       |
| Very Low     | $11 \leq X < 13$ | 5          | 4.3        |
| <b>Total</b> |                  | <b>116</b> | <b>100</b> |

**Table 9.** Neuroticism categorization.

| Category     | Interval         | Frequency  | %          |
|--------------|------------------|------------|------------|
| Very High    | $18 \leq X < 19$ | 5          | 4.3        |
| High         | $16 \leq X < 18$ | 24         | 20.7       |
| Moderate     | $15 \leq X < 16$ | 29         | 25.0       |
| Low          | $13 \leq X < 15$ | 50         | 43.1       |
| Very Low     | $11 \leq X < 13$ | 8          | 6.9        |
| <b>Total</b> |                  | <b>116</b> | <b>100</b> |

participants were in the low category (43.1%) in terms of emotional instability, anxiety, and susceptibility to negative affect. Meanwhile, openness to experience was generally in the moderate category (52.6%), indicating a balanced level of curiosity, creativity, and openness to new ideas.

Academic stress levels among participants were mostly in the moderate category (37.9%). This finding suggests that although students experienced noticeable academic pressure related to coursework, evaluations, and academic demands, the stress levels were generally manageable and did not exceed coping capacity. These results are consistent with previous findings indicating that academic stress among university students is generally at a moderate level (26, 27). Detailed categorization results are presented in Tables 5-11.

### Assumption Testing

Prior to hypothesis testing, assumption tests were conducted to determine the appropriate statistical approach. Normality testing was performed to examine whether the data were normally distributed by evaluating the significance value ( $p$ ). The data are considered normally distributed when  $p > 0.05$ . The results of the Kolmogorov–Smirnov normality test showed that all Big Five personality dimensions and academic stress scores

were not normally distributed ( $p < 0.05$ ). These results indicate that the data did not meet the assumptions required for parametric statistical analysis (see **Table 12**).

Linearity testing was subsequently performed to examine the relationships between each personality dimension and academic stress by assessing the significance value ( $p$ ) of the Linearity F-value ( $p < 0.05$ ). The results demonstrated that all Big Five personality dimensions exhibited linear relationships with academic stress, thereby fulfilling the assumptions necessary for correlational analysis.

Based on the outcomes of these assumption tests, non-parametric statistical methods were deemed most appropriate for hypothesis testing.

### Relationship Between Big Five Personality Traits and Academic Stress

Hypothesis testing was conducted using Spearman's Rank correlation analysis to examine the relationships between each dimension of the Big Five personality model and academic stress (see **Table 13**). The results indicated a significant negative relationship between extraversion and academic stress, with a correlation coefficient ( $r$ ) = -0.331 and a significance level of 0.000 ( $p < 0.05$ ). This suggests that students with higher levels of extraversion tend to

**Table 10.** Openness categorization.

| Category     | Interval         | Frequency  | %          |
|--------------|------------------|------------|------------|
| Very High    | $21 \leq X < 23$ | 4          | 3.4        |
| High         | $19 \leq X < 21$ | 17         | 14.7       |
| Moderate     | $16 \leq X < 19$ | 61         | 52.6       |
| Low          | $14 \leq X < 16$ | 23         | 19.8       |
| Very Low     | $10 \leq X < 14$ | 11         | 9.5        |
| <b>Total</b> |                  | <b>116</b> | <b>100</b> |

**Table 11.** Academic stress categorization.

| Category     | Interval         | Frequency  | %          |
|--------------|------------------|------------|------------|
| Very High    | $65 \leq X < 72$ | 4          | 3.4        |
| High         | $60 \leq X < 65$ | 28         | 24.1       |
| Moderate     | $55 \leq X < 60$ | 44         | 37.9       |
| Low          | $49 \leq X < 55$ | 28         | 24.1       |
| Very Low     | $42 \leq X < 49$ | 12         | 10.3       |
| <b>Total</b> |                  | <b>116</b> | <b>100</b> |

**Table 12.** Results of normality and linearity testing for big five personality dimensions and academic stress.

| Variable          | Significance ( $p$ ) | Interpretation           | Linearity ( $p$ ) | Interpretation |
|-------------------|----------------------|--------------------------|-------------------|----------------|
| Extraversion      | $0.000 < 0.05$       | Not normally distributed | $0.000 < 0.05$    | Linear         |
| Agreeableness     | $0.000 < 0.05$       | Not normally distributed | $0.000 < 0.05$    | Linear         |
| Conscientiousness | $0.000 < 0.05$       | Not normally distributed | $0.001 < 0.05$    | Linear         |
| Neuroticism       | $0.000 < 0.05$       | Not normally distributed | $0.013 < 0.05$    | Linear         |
| Openness          | $0.000 < 0.05$       | Not normally distributed | $0.000 < 0.05$    | Linear         |
| Academic Stress   | $0.000 < 0.05$       | Not normally distributed | -                 | -              |

experience lower levels of academic stress. This finding indicates that sociability, positive affect, and active engagement with the environment may function as protective factors against academic stress. The coefficient of determination shows that extraversion contributes 17% to academic stress, as indicated by an  $R^2$  value of 0.170.

Similarly, agreeableness showed a significant negative correlation with academic stress, with a correlation coefficient ( $r$ ) = -0.346 and a significance level of 0.000 ( $p < 0.05$ ). Students with higher levels of empathy, cooperation, and interpersonal warmth tended to experience lower academic stress. The coefficient of determination indicates that agreeableness contributes 14.1% to academic stress, as shown by an  $R^2$  value of 0.141.

Conscientiousness also showed a significant negative relationship with academic stress, with a correlation coefficient ( $r$ ) = -0.199 and a significance level of 0.032 ( $p < 0.05$ ). This indicates that students who are more organized, disciplined, and goal-oriented tend to manage academic demands more effectively, resulting in lower stress levels. The coefficient of determination shows that conscientiousness contributes 8.9% to academic stress, as indicated by an  $R^2$  value of 0.089.

In contrast, neuroticism showed a significant positive correlation with academic stress, with a correlation coefficient ( $r$ ) = 0.207 and a significance level of 0.026 ( $p < 0.05$ ). Students with higher levels of emotional instability, anxiety, and vulnerability to negative emotions tend to experience higher academic stress. This finding highlights neuroticism as a key psychological risk factor in the academic context, consistent with stress theories emphasizing the role of emotional regulation in stress appraisal (16). The coefficient of determination indicates that neuroticism contributes 5.2% to academic stress, as shown by an  $R^2$  value of 0.052.

Openness to experience was found to have a significant negative relationship with academic stress, with a correlation coefficient ( $r$ ) = -0.366 and a significance level of 0.000 ( $p < 0.05$ ). Students who are more open to new ideas, flexible in thinking, and receptive to new experiences tend to report lower levels of academic stress. The coefficient of determination shows that openness contributes 11.9% to variability in academic stress, as indicated by an  $R^2$  value of 0.119.

### Summary of Empirical Findings

Overall, the results demonstrate that academic stress among psychology students is significantly associated with personality traits. Neuroticism emerged as a strong positive predictor of academic stress, whereas extraversion, agreeableness, conscientiousness, and

openness functioned as protective traits associated with lower levels of academic stress. These findings are consistent with previous studies examining the role of personality in academic stress regulation (4, 25).

### Discussion

This study provides empirical evidence that five core personality traits (the Big Five) significantly shape academic stress among undergraduate psychology students in Indonesia. These findings not only confirm previous research from Western contexts but also broaden understanding by situating this relationship in a collectivist, non-Western educational setting. Overall, the findings indicate that personality traits play a significant role in shaping students' experiences of academic stress. Specifically, neuroticism was found to be positively associated with academic stress, whereas extraversion, agreeableness, conscientiousness, and openness demonstrated significant negative relationships with academic stress. These findings provide empirical support that individual differences in personality influence how students perceive, interpret, and respond to academic demands (4).

The finding suggests that emotionally unstable students are more vulnerable to academic stress due to their heightened anxiety and emotional reactivity. This result supports stress theories emphasizing the importance of emotional regulation in stress appraisal (16) and is consistent with previous studies identifying neuroticism as a predictor of academic stress among university students (4). Individuals who are able to manage their neuroticism in a more adaptive way tend to experience greater emotional stability and optimism when facing challenging or stressful situations (4). Thus, neuroticism may function not merely as a correlational factor, but as a central psychological pathway through which academic stress develops.

In contrast, extraversion demonstrated a significant negative relationship with academic stress, indicating that students who are more sociable, energetic, and assertive tend to experience lower levels of academic stress. Extraverted individuals are generally more inclined to seek social support, engage in collaborative learning, and express emotions openly, all of which may function as effective coping mechanisms in managing academic pressures. Social interaction and peer support have been widely recognized as protective factors against stress, particularly in academic environments where interpersonal relationships play a crucial role (26). These findings indicate that extraversion is significantly negatively associated with academic stress, thus potentially serving as a protective factor. extraverted characteristics such as a

**Table 13.** Spearman's rank correlation between big five personality dimensions and academic stress.

| Personality Dimension | r       | p-value | Direction |
|-----------------------|---------|---------|-----------|
| Extraversion          | - 0.331 | 0.000   | Negative  |
| Agreeableness         | -0.346  | 0.000   | Negative  |
| Conscientiousness     | -0.199  | 0.032   | Negative  |
| Neuroticism           | 0.207   | 0.026   | Positive  |
| Openness              | -0.366  | 0.000   | Negative  |

tendency to seek social support, engaging in collaborative interactions, and openly expressing emotions serve as adaptive coping mechanisms in the face of academic demands. This underscores the importance of social support as a psychological resource in reducing academic stress in college students.

Agreeableness was also found to be negatively associated with academic stress. This finding suggests that students who are cooperative, empathetic, and trusting are less likely to experience high levels of stress in academic settings. Agreeable individuals tend to maintain harmonious relationships with peers and lecturers, which may reduce interpersonal conflicts and academic tension. Additionally, their tendency toward prosocial behavior may facilitate adaptive coping strategies, such as seeking help and collaborating with others when facing academic challenges. This result supports prior research indicating that interpersonal sensitivity and positive social interactions can mitigate stress responses in students (4). These findings indicate that agreeableness is significantly negatively related to academic stress, thus being understood as a protective factor. Characteristics such as cooperativeness, empathy, and trust enable individuals to build harmonious interpersonal relationships, thereby minimizing conflict and academic stress. Furthermore, prosocial behavioral tendencies support the use of adaptive coping strategies, such as seeking help and collaborating, which ultimately contribute to lowering academic stress levels.

The negative relationship between conscientiousness and academic stress highlights the importance of self-discipline, organization, and goal-directed behavior in managing academic demands. Conscientious students are more likely to plan their activities, manage time effectively, and persist in completing academic tasks, thereby reducing the likelihood of feeling overwhelmed by academic workloads. This finding is consistent with theoretical perspectives suggesting that conscientiousness enhances self-regulation and problem-focused coping, which are crucial for effective stress management (25). These findings indicate that conscientiousness is significantly negatively associated with academic stress, thus acting as a protective factor. Characteristics such as self-discipline, organization, and goal orientation enable individuals to manage academic demands more effectively through good planning and time management. Furthermore, self-regulation skills and a tendency to use problem-focused coping strategies help reduce feelings of overwhelm, thus contributing to lower levels of academic stress.

Openness to experience also demonstrated a significant negative relationship with academic stress, indicating that students who are intellectually curious, flexible, and open to new experiences tend to experience lower academic stress. Individuals high in openness are generally more receptive to novel ideas and alternative problem-solving strategies, which may help them adapt more effectively to academic challenges. This trait may enable students to view academic difficulties as opportunities for learning rather than as sources of threat, thereby reducing stress. Although openness is often less emphasized in stress research compared to other personality traits, the present findings suggest that

cognitive flexibility and creativity may play a meaningful role in buffering academic stress.

Taken together, the findings of this study reinforce the theoretical framework that academic stress is not solely determined by external academic demands, but also by internal psychological characteristics, particularly personality traits. Stress emerges from the interaction between individuals and their environment, where personality influences how stressors are appraised and managed (16, 24). Thus, personality can be understood as a significant psychological determinant in shaping students' responses to academic pressure. Students with adaptive personality traits, such as extraversion, agreeableness, conscientiousness, and openness, appear better equipped to overcome academic challenges, whereas students with high neuroticism are more susceptible to increased stress. Therefore, these findings provide an important basis for developing more adaptive and contextual interventions for managing academic stress.

### Limitations

This study has several limitations that should be considered. The cross-sectional design limits causal inferences, and sample characteristics within a given context may influence the generalizability of the findings. Nevertheless, the results provide a meaningful empirical contribution and serve as a basis for further research to expand and strengthen the findings, taking these limitations into account.

### Future Research Directions

In conclusion, the present study provides empirical evidence that personality traits are significantly associated with academic stress among university students. Understanding these relationships is crucial for developing targeted interventions aimed at reducing academic stress and promoting students' psychological well-being. By considering personality differences, educational institutions may design more effective stress management programs that support students in navigating academic demands more adaptively.

### Practical Implications

These findings highlight the importance of developing more targeted, personality-based approaches to addressing academic stress. Tailored interventions—such as emotional regulation support, structured social engagement, and adaptive learning strategies—may be more effective than generic approaches. Integrating these perspectives into student support systems may contribute to improved well-being and academic adjustment.

### Conclusion

This study found that neuroticism was positively associated with academic stress, whereas extraversion, agreeableness, conscientiousness, and openness were negatively associated with academic stress among undergraduate psychology students. These findings highlight the important role of personality traits in shaping students' responses to academic demands and contribute to the understanding of personality–stress relationships in a non-Western educational context.

## Declaration

### Author Information

#### Olivia Ayuningrum

Department of Psychology, Faculty of Psychology, Islamic University of Riau Pekanbaru, Indonesia.

**Contribution:** Formal analysis, Writing - Original Draft, Writing - Review & Editing, Data Curation, Formal Analysis, Visualization, Writing - Original Draft.

#### Ahmad Hidayat

\*Corresponding author

Department of Psychology, Faculty of Psychology, Islamic University of Riau Pekanbaru, Indonesia.

**Contribution:** Conceptualization, Funding acquisition, Methodology, Project administration, Resources, Supervision, Validation, Writing - Review & Editing.

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The authors declare no conflicting interest.

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All data generated or analyzed during this study are included in this published article.

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