



The Role of Subjective Well-Being in Mediating Grit and Academic Stress Among Final-Year Students at University X

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Abstract. Academic difficulties faced by final-semester students often lead to academic stress, which can hinder thesis progress. This study aimed to investigate the role of Subjective Well-Being (SWB) in mediating the relationship between Grit and academic stress among final-semester students at University X in Makassar. A total of 319 students participated in the study, including 214 women and 105 men. Data were collected using the Educational Stress Scale for Adolescents (ESSA) to measure academic stress, the Grit-S Scale to assess Grit, and the Positive and Negative Affect Schedule (PANAS) and Satisfaction with Life Scale (SWLS) to measure SWB. Data were analyzed using the Medmod technique in Jamovi software. The results showed that SWB could be a mediator between Grit and academic stress (path coefficient = 0.559, $p < 0.01$), and SWB explained 50% of the total effect, indicating partial mediation. Furthermore, the correlation analysis revealed a strong positive correlation between Grit and SWB ($r = 0.665$, $p < 0.01$), and between SWB and academic stress ($r = 0.600$, $p < 0.01$). Practical implications of this study include the need for universities to implement programs that enhance students' Grit and SWB, such as mental resilience training and self-regulation support. These interventions could help students manage academic stress more effectively, improving both their academic performance and overall well-being. The study emphasizes the need for mental health support for final-semester students as they complete their thesis.

Keywords: Grit, Academic Stress, Subjective Well-Being, Final Year Student

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Introduction

Indonesian universities have implemented a study period limit for undergraduate students based on Decree of the Minister of Education of the Republic of Indonesia Number 44 of 2015, Concerning National Standards for Higher Education, Article 16 concerning a maximum of seven academic years for undergraduate programs with a minimum study load of 144 credit units (SKS). These 144 credit units can be completed over eight semesters (four years) with an average of 18 credit units per semester. Students who cannot complete their education within seven years will be subject to DO (*drop out*). During the COVID-19 pandemic, since the even semester of 2021/2022, limited offline learning has only been

applicable to the 2020 and 2021 intakes. Meanwhile, for the 2019 intake and previous years, lectures were not entirely offline. This means that this rule also applies to final-semester students working on their final assignments. Limited access to campus and online guidance processes *can* increase the psychological burden on students, leading to academic stress and decreased academic performance.

Stress that occurs due to academic demands is called academic stressors (Desmita, 2010). Excessive academic demands will give rise to stress as a response that is considered threatening to the individual. These (threatening) academic demands include, for example: study pressure, study load, worry about grades, self-expectations, and hopelessness (Olejnik, S.N., & Holschuh, 2007) . Stress is not always negative because it can have both good and bad effects. If stress is still below the individual's ability level, then it can have a positive impact, this is called *eustress*. However, stress can also have a negative impact if experienced excessively, this is called *distress*. When *eustress* occurs, individuals can experience better levels of productivity at work and better health progress. Meanwhile, *distress* can cause individuals to experience decreased productivity at work, as well as disrupt health and personal relationships with others (Greenberg, 2006).

A survey by researchers on 47 students working on their thesis at University "X" in Makassar City showed that 34 (72%) experienced high levels of stress, eight (17%) experienced moderate levels of stress, and five (11%) experienced low levels of stress. The results of this survey indicate that final year students are vulnerable to experiencing increased stress in their academic process. Some of the negative impacts if students experience academic stress include: difficulty graduating on time, decreased interest and motivation in compiling the thesis, difficulty concentrating during guidance, neglecting the thesis work and avoiding the supervisor so as not to feel burdened and seek pleasure outside the campus, the dominance of negative thoughts, and thoughts becoming chaotic (Gamayanti, W., Mahardianisa, & Syafei, 2018). In particular, excessive stress will affect the level of cognitive abilities and learning conditions of students (Gaol, 2016). Considering the significant impact of academic stress, it is crucial to find solutions to reduce students' academic stress levels. The following discussion will explore solutions based on relevant research from various sources.

Research conducted in the last seven years (Sasanajaya, & Wena, 2018; Lee, 2017) showed that *Grit* is negatively correlated with academic stress. For example, (Pratama, 2021) studied 164 final-semester students at the Faculty of Psychology, Makassar State University, and the results showed that those with *higher Grit scores* High students will be more diligent and consistent so they don't give up easily due to failure and obstacles, and can focus on their goals. Then, the results of (Lee, 2017) research on 345 students at Community College College, Hong Kong, showed that interest and persistence were negatively related to stress, while perceived academic failure was positively related to stress. These two studies suggest that students' subjective perceptions of failure can influence their stress levels.

Grit is one of the psychological resources reported to influence students' assessments and perceptions of academic failure and stress levels (Lee, 2017) . Assessment here is the first step when individuals are faced with stressors. There are two assessment processes: *primary and secondary appraisal* and *secondary appraisal*. If an individual is able to face stressors adaptively,

for example by maintaining *Grit*. When the thesis writing process encounters obstacles, these obstacles will not cause stress. However, if these obstacles are deemed threatening, they will proceed to the second assessment, namely *secondary assessment appraisal* (Lazarus, & Folkman, 1984). So, if *the primary appraisal* states that working on a thesis is a threatening situation, but *secondary appraisal* states that if the coping is sufficiently adaptive to deal with stress, then the student will not experience stress or will experience low stress. According to (Duckworth et al., 2007) individuals with *Grit* are highly focused on what they are interested in and try harder to achieve their goals, so they have the enthusiasm to face challenges. Akbağ and Ümmet (Rosyadi, AK, & Laksmiwati, 2018) explain that *grit* encourages individuals to focus on their goals even when they face challenges, setbacks, and despair. Even when others choose to give up, they become increasingly driven to overcome each challenge they face.

Students with high *grit scores* are less likely to experience academic stress because they are less afraid of failure. This is because students with high *grit are closely linked to learning achievement goal orientation* (Akin, A., & Arslan, 2014). *Learning achievement goal orientation* encourages students to focus on assessing competencies based on improving the results obtained from effort. Conversely, students with low *Grit scores* will focus on results and tend to compare their achievements with others. Therefore, if a student's academic score is low, they will easily experience increased anxiety. Pratama (2021) shows that the role of *Grit* to an increase in academic stress by 17.3%, research (Sasanajaya, & Wena, 2018) 20.4% and research (Lee, 2017) 2.1%. Based on these findings, researchers argue that the quality of the relationship between *Grit* and academic stress can be improved by including *subjective well-being* as a mediator. This opinion refers to the results of research, which found that *SWB* mediated academic stress in 200 students. *SWB* had a negative and significant correlation with academic stress, where each increase in *SWB scores* resulted in a decrease in academic stress scores. Therefore, *SWB* has the potential to be a mediating variable in this study.

Research conducted by (Rosyadi, AK, & Laksmiwati, 2018) on 128 students of the Faculty of Psychology, Surabaya State University, class of 2017 showed that *Grit* can increase students' feelings of self-satisfaction and happiness. Certainly, individuals who have a purpose in life will feel better and more satisfied with their lives (Hefferon, K., & Boniwell, 2011). According to research (Diener, 2000), individuals who are more aligned with their life goals usually have higher levels of *SWB*. Students with optimistic feelings about the future are able to overcome various challenges with feelings of happiness, have good control over their lives, and thus have positive hopes and goals regarding the future. Students with *Grit* have clear orientation and goals because they are able to overcome various pressures and stress in the process of compiling the final assignment.

Life satisfaction and the balance of positive and negative affect are aspects that shape *SWB*. These three aspects are key to the main components of *SWB* (Diener, 2000, Carr, 2004). Research (Datu, JA, Valdez, JP, & King, 2016) combined *SWB* aspects into a total score. Another study by Caner (2015) measured *SWB aspects* separately and focused only on measuring overall evaluations of life. This shows that there are three main aspects to measure a person's *SWB*, so that the three aspects cannot be separated, namely, positive affect, negative affect and life satisfaction. Satisfaction with life experiences is dominated by positive

emotions and is relatively less influenced by negative emotions. *SWB* can be achieved if students are able to positively interpret the process of working on their final assignments.

Lee (2017) suggests that responses to academic stress are influenced by how the stressor is perceived by the individual. This means that experiences during the thesis writing process are considered events that trigger negative emotional responses. Research by Wicaksono (2018) on 43 Master of Professional Psychology students at the University of Surabaya showed that *SWB* was negatively correlated with academic stress. This contrasts with *the setting* in this study, the researcher wanted to see whether *SWB could reduce academic stress levels in final semester undergraduate students when implemented in different settings*. The source of the *positive Affect* is the amount of satisfaction an individual experiences in daily life. The more positive effect they experience, the higher *their life* satisfaction. *affect* is a resource that individuals use to keep trying when facing stress by broadening their perspective on various options, while *negative affect*, making individuals narrower their focus, which causes students to experience increased stress (Wicaksono, 2018). Students who feel happy tend to focus on positive experiences in their lives, while unhappy students focus on experiences and situations that hinder their progress (Diener et al., 2003). This difference provides a clear picture, namely if students are able to see or conclude that all challenges and obstacles in working on their thesis as positive experiences, they will be able to build *SWB* and be able to minimize excessive stress.

However, although the relationship between grit and academic stress has been studied widely, the psychological mechanisms underlying this relationship are still not fully understood. Previous research has mainly focused on the direct relationship between these two variables, without exploring potential mediators. The gap in the literature is clear: while Grit is known to help reduce stress, how it influences students' cognitive appraisals of stress, and how Subjective Well-Being (SWB) plays a role in this process, remains unexplored. This study seeks to fill that gap by testing the hypothesis that SWB acts as a mediator between Grit and academic stress in final-year students. SWB has been shown to affect how individuals perceive and react to stress, and research by (Diener, 2000) suggests that individuals with higher SWB are better at adapting to and managing stress.

The novelty of this research lies in its exploration of SWB as a psychological mediator between Grit and academic stress, particularly within the context of Indonesian students, who face unique academic and social pressures. Unlike other cultures, Indonesian students often encounter stress from not only academic pressures but also from family expectations, economic concerns, and uncertainties about the job market after graduation. These factors make academic stress particularly complex in Indonesia. Thus, this study offers new insights into the specific ways in which psychological factors like Grit and SWB interact to influence stress in Indonesian university students.

Method

Research Design

This study uses a quantitative approach with a simple mediation research design. The purpose of this study is to explain whether or not *SWB plays a role* in mediating the

relationship between *Grit and Self-Esteem*. and academic stress. This research includes three research variables, namely *Grit* as a predictor variable (X), academic stress as an *outcome variable* (Y), and *SWB* as a mediator variable (M).

Participants

The participants of this study were final-semester students completing their theses at University X in Makassar City. Data on the number of University X students working on their theses is 10,012 people (nine faculties).

Table 1. Description of Research Respondents (N=319)

Study Program	Actual Data
Psychology	80
Biology Education	41
Accountancy	37
Public Administration Science	35
English language education	34
Electrical Engineering Education	29
Early childhood education programs	27
Drama, Dance, and Music Arts Education	24
Physical Education, Health, and Recreation	12

Table 1 is a description of the research respondents, the most dominant faculty group participating in this research was the Psychology Study Program with 80.

Participant Recruitment Procedure

Researchers determine the number of participants with the help of sampling size calculator by Raosoft. The final student population of University X of 2,542 (nine study programs), with a margin of error 5%, confidence level 95%, and response obtained. The sampling method used was random sampling using the cluster technique. random sampling because students in the population have an equal chance of being selected as research respondents.

Research Instruments

Academic Stress Scale

The outcome variable in this study is academic stress. To measure academic stress, the researcher employed the Educational Stress Scale for Adolescents (ESSA) developed by (Sun, J., Dunne, M. P., Hou, X. yu, & Xu, 2011) and adapted by Pratama (2021). This scale includes five aspects: study pressure, task load, concern about grades, self-expectations, and hopelessness. The scale consists of 16 statement items (Alpha Cronbach's = 0.89). Respondents provided answers on a 5-point Likert scale: 1 for strongly disagree, 2 for disagree, 3 for neutral, 4 for agree, and 5 for strongly agree. In this study, the academic stress scale showed a Alpha Cronbach's reliability of 0.851. The correlation coefficient ranged from 0.338 to 0.701, with two items removed. Hence, the academic stress scale is both valid and reliable. The scale has been proven to be valid and reliable in measuring academic stress levels in student populations, making it a suitable tool for describing the impact of academic stress on final-year students.

Grit Scale

The predictor variable in this study is grit. To assess grit in final semester students, the researcher used the Short Grit Scale (GRIT-S) developed by (Duckworth & Quinn, 2009) and validated by Aritonang (2021). The scale consists of two aspects: consistency of interest and perseverance of effort. It contains eight statement items (Alpha Cronbach's = 0.83). Respondents rated their agreement on a 5-point scale, where 1 represents very incompatible, 2 represents incompatible, 3 represents somewhat compatible, 4 represents compatible, and 5 represents very compatible. In this study, the Grit scale showed a Alpha Cronbach's reliability of 0.778. The correlation coefficient ranged from 0.432 to 0.543, with no items dropped, and the Comparative Fit Index (CFI) value was 0.933, indicating that the scale is valid and reliable. This scale has been proven to have good reliability and has been widely used in research to measure the psychological resilience needed to overcome difficulties in academic settings.

Subjective Scale Well-being

The mediator variable in this study is subjective well-being (SWB). To assess SWB, the researcher used the PANAS Scale (Positive and Negative Affect Schedule) developed by Watson et al. and the SWLS (Satisfaction with Life Scale) developed by Diener, both of which were validated into Indonesian by (Akhtar, 2019). The PANAS Scale consists of 20 items, 10 assessing positive affect and 10 assessing negative affect, each using adjectives to describe the respondent's feelings (Alpha Cronbach's for Positive Affect = 0.861 and Negative Affect = 0.853). Respondents rated each item on a 5-point scale, ranging from almost never (1) to almost always (5). The SWLS consists of 5 items, with Alpha Cronbach's = 0.828, where respondents rated their agreement on a 7-point scale from strongly disagree (1) to strongly agree (7).

The SWB scale in this study was divided into three factors: positive affect, negative affect, and life satisfaction. Positive affect had a Alpha Cronbach's of 0.832, with correlation coefficients ranging from 0.384 to 0.697, and the CFI value of 0.941. Negative affect had a Alpha Cronbach's of 0.902, with correlation coefficients ranging from 0.362 to 0.810, and the CFI value of 0.938. The SWLS had a Alpha Cronbach's of 0.746, with correlation coefficients ranging from 0.411 to 0.602, and the CFI value of 0.987. The scale was considered valid and reliable. This scale has been proven to have good reliability and has been widely used in research to measure the psychological resilience needed to overcome difficulties in academic settings.

Data Analysis

This study employed a quantitative approach with a simple mediation design to analyze the relationship between Grit (X) and academic stress (Y) through the mediating role of subjective well-being (SWB) (M). Data were analyzed using Jamovi 2.2.5 software, which enables hypothesis testing and mediation analysis. Assumption testing was conducted to ensure that the data met the necessary criteria, including normality, heteroscedasticity, and multicollinearity tests, all of which indicated that the data met the assumptions. To analyze the strength and direction of the relationships between the variables, Pearson's correlation coefficient was used. Pearson's r was chosen because it is suitable for measuring the linear relationship between two continuous variables. In this study, the correlation between Grit and academic stress, Grit and SWB, and SWB and academic stress was examined. The use

of Pearson’s correlation provides an understanding of how strongly the variables are related, which forms the basis for testing the mediation model.

Following the correlation analysis, mediation analysis was conducted using the PROCESS macro in Jamovi. This model tested both the direct effect of Grit on academic stress and the indirect effect through SWB. The significance of the indirect effect was assessed using bootstrapping with 5,000 samples, a robust method for estimating indirect effects in mediation models. Bootstrapping produces confidence intervals for the indirect effect, helping to determine whether the mediation effect is statistically significant. Before conducting the analysis, assumption tests were performed to ensure the validity of the data. Shapiro-Wilk tests for normality showed that the data followed a normal distribution. Breusch-Pagan tests for heteroscedasticity did not reveal any issues. Additionally, Variance Inflation Factor (VIF) calculations were performed to ensure that multicollinearity did not bias the results. The VIF values were below the acceptable threshold ($VIF < 10$), indicating that multicollinearity was not a concern.

These statistical methods were chosen because Pearson’s correlation is an effective tool for measuring the linear relationship between continuous variables, which is the nature of the data in this study. Mediation analysis was chosen to understand the indirect relationship between Grit and academic stress, mediated by SWB. This approach allows for examining not just the direct effect of Grit on academic stress, but also how SWB influences this relationship. Bootstrapping was used to ensure the robustness of the mediation results, especially for small to medium sample sizes, and to provide more accurate confidence intervals compared to traditional methods.

Results

Demographic Data

Table 2. Description of Research Respondents Based on Age (N=319)

Respondents' age characteristics	Frequency	Percentage
20 years	9	3%
21 years	68	21%
22 years	141	44%
23 years	66	21%
24 years old	24	7%
25 years	12	4%

Table 3. Description of Research Respondents Based on Generation (N=319)

Force	Frequency	Percentage
2018	204	64%
2017	74	23%
2016	19	6%
2015	22	7%

Table 4. Description of Research Respondents Based on Gender (N=319)

Gender	Frequency	Percentage
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Man	105	33%
Woman	214	67%

The demographic characteristics of the respondents are presented in Tables 2, 3, and 4. Table 2 shows that the majority of respondents were 22 years old (44%), followed by 21% who were 23 years old. Table 3 shows that the largest group of respondents came from the class of 2018 (64%), followed by 23% from the class of 2017. Table 4 shows that the sample was dominated by women (67%), with 33% of respondents being men.

Categorization Results

The results of the categorization analysis for each variable can be seen in tables 2, 3 and 4.

Table 5. Categorization of Academic Stress

Trend Interval	Score	Category	F	Percentage
$X < M - 1SD$	$X < 29$	Low	57	17.8%
$M - 1SD \leq X < M + 1SD$	$29 \leq X < 46$	Currently	202	63.3%
$M + 1SD \leq X$	$X \geq 46$	Tall	60	18.8%

Table 6. Grit Categorization

Trend Interval	Score	Category	F	Percentage
$X < M - 1SD$	$X < 2$	Low	52	16.3%
$M - 1SD \leq X < M + 1SD$	$22 \leq X < 31$	Currently	206	64.5%
$M + 1SD \leq X$	$X \geq 31$	Tall	61	19.1%

Table 7. SWB Categorization

Trend Interval	Score	Category	F	Percentage
$X < M - 1SD$	$X < 26$	Low	58	18.1%
$M - 1SD \leq X < M + 1SD$	$26 \leq X < 74$	Currently	222	69.5%
$M + 1SD \leq X$	$X \geq 74$	Tall	39	12.2%

The categorization of academic stress, Grit, and SWB among the respondents is provided in Tables 5, 6, and 7. Table 5 shows that 63.3% of students reported moderate academic stress, while 18.8% reported high stress levels. Table 6 illustrates that the majority of students (64.5%) had moderate levels of Grit, and Table 7 reveals that 69.5% of students had moderate levels of SWB.

Hypothesis Test Results

Table 8. Correlation Analysis Between Variables

Variables	M	Elementary School	1	2	3
1. Grit	36.3	4.74	-		
2. SWB	50.0	23.7	0.665***	-	
3. Academic Stress	37.7	8.82	0.600***	0.656***	-

Note. * $p < .05$, ** $p < .01$, *** $p < .001$ (Correlation with Spearman's rho)

Table 8 presents the correlation analysis between the variables. The results indicate that Grit has a significant positive correlation with SWB ($r = 0.665$, $p < 0.001$) and that SWB is

negatively correlated with academic stress ($r = 0.600, p < 0.001$). These findings suggest that both Grit and SWB play significant roles in influencing academic stress levels.

Table 9. Mediation Analysis

Effect	Label	Estimate	SE	95% Confidence Interval		Z	p	% Mediation			
				Lower	Upper						
Indirect		$a \times b$		0.559		0.076	0.41	0.70	7.36	< .001	50.0
Direct		c		0.558		0.101	0.35	0.75	5.51	< .001	50.0
Total		$c + a \times b$		1,117		0.083	0.95	1,28	13.3	< .001	100.0

The mediation analysis shown in Table 9 examines the role of SWB as a mediator in the relationship between Grit and academic stress. The results indicate that SWB significantly mediates the relationship, with an indirect effect of Grit on academic stress of $\beta = 0.559$ ($p < 0.001$). This indirect effect explains 50% of the total effect, indicating partial mediation. The direct effect of Grit on academic stress is also significant ($\beta = 0.558, p < 0.001$), and the total effect is $\beta = 1.117$ ($p < 0.001$). This partial mediation supports the hypothesis that SWB plays a crucial role in reducing academic stress.

Path Analysis

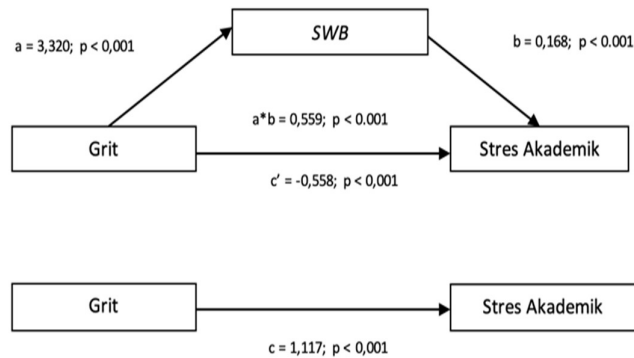


Figure 2. Mediation model framework

Figure 2 illustrates the mediation model framework, showing two separate models used to assess the mediating effect of Subjective Well-Being (SWB) in predicting the influence of Grit on academic stress among final-semester students. The first model demonstrates how SWB mediates the relationship between Grit and academic stress, indicating that SWB serves as a psychological buffer that influences how Grit affects academic stress levels. The second model presents the total effect of Grit on academic stress, encompassing both the direct and mediated paths.

The path analysis results confirm the hypothesis that SWB partially mediates the relationship between Grit and academic stress. As shown in Table 9, the indirect effect of Grit on academic stress through SWB is $\beta = 0.559$ ($p < 0.001$), which accounts for 50% of the total effect. This suggests that Grit influences academic stress not only directly but also indirectly by enhancing SWB, which in turn reduces stress levels. The direct effect of Grit on academic stress is significant ($\beta = 0.558$, $p < 0.001$), indicating that Grit still has an important role in directly affecting academic stress, even after accounting for SWB. The total effect of Grit on academic stress ($\beta = 1.117$, $p < 0.001$) includes both the direct and indirect paths, showing a strong overall relationship. These findings support the hypothesis that SWB plays a significant mediating role in reducing the negative impact of Grit on academic stress, with 50% of the total effect being mediated by SWB.

The findings of this study reveal that Grit significantly influences academic stress and subjective well-being (SWB) in final-semester students at University X. This supports previous research that highlighted a negative correlation between Grit and academic stress (Pratama, 2021; Sasanajaya, & Wena, 2018). Students with high levels of Grit, which is defined as resilience and perseverance, demonstrated greater ability to overcome academic challenges, thus reducing their levels of academic stress. Furthermore, the results showed that students with higher Grit levels had better SWB scores, aligning with studies by (Jin, B., & Kim, 2017) and (Wijaya & Darmawan, 2019), which emphasize how Grit fosters a positive mindset and helps students focus on their long-term goals. These findings suggest that Grit serves as a protective factor against academic stress, which is consistent with existing literature.

The findings of this study suggest that SWB plays a mediating role between Grit and academic stress, albeit partially. This indicates that while Grit can help alleviate academic stress by enhancing resilience and perseverance, SWB is also a key psychological factor that influences this relationship. This aligns with the work of (Diener, 2000), who showed that individuals with high levels of SWB are better equipped to handle stress and adapt to challenging circumstances. Therefore, SWB serves not only as an outcome of Grit but also as a buffer that mitigates the negative effects of academic stress. However, the partial mediation effect suggests that other psychological variables, such as emotional regulation and self-efficacy, may also contribute to the relationship between Grit and academic stress. This interpretation expands our understanding of how non-cognitive factors, like Grit and SWB, function together to influence students' well-being and stress levels.

This study offers important insights into the role of Grit and SWB in managing academic stress among university students. The findings have significant implications for psychological and educational theory, particularly in the context of student mental health. First, these results underline the importance of fostering Grit in students, as it not only helps in reducing academic stress but also enhances subjective well-being. Universities could use these findings to design interventions aimed at increasing students' mental resilience and perseverance, such as training programs that focus on goal-setting, stress management, and coping strategies.

Moreover, this research also suggests the need for universities to incorporate a more holistic approach to student development. Rather than focusing solely on cognitive skills, educational programs should emphasize psychological factors that support students' ability

to handle academic pressure. By focusing on both cognitive and non-cognitive skills, universities can help students achieve better academic outcomes while enhancing their overall well-being. These findings contribute to the growing body of research on the psychological aspects of academic performance and stress, and highlight the value of considering psychological variables alongside traditional academic factors.

Novelty of the Research

This study offers a significant contribution to the understanding of the relationship between Grit, SWB, and academic stress among college students, particularly final-year students. This paragraph highlights the unique contribution of the study, specifically the introduction of SWB as a mediator in the relationship between Grit and academic stress, which has not been directly examined in previous studies. It emphasizes how the research provides a new perspective by exploring the role of non-cognitive factors like Grit and SWB in managing academic stress, which can be further developed in future research.

Implications and Contributions

This research has important implications for psychological and educational theory, particularly in the context of managing academic stress among college students. These findings underscore the importance of developing Grit among students as a factor that can reduce academic stress while simultaneously increasing their SWB. Practically, these results can be used by universities to design self-development programs that focus on enhancing students' Grit, such as mental resilience training and focusing on long-term goals. Furthermore, this research also opens up opportunities to develop more comprehensive learning strategies that not only rely on students' cognitive intelligence but also consider the psychological factors that support them in coping with academic stress.

Research Limitations

While this study provides valuable insights, there are several limitations that should be acknowledged. First, the study's sample was limited to final-semester students at University X, which may limit the generalizability of the findings to other student populations or universities. Future research could include a more diverse sample, including students from different disciplines, academic years, or universities, to test whether the relationships between Grit, SWB, and academic stress hold across various contexts. Another limitation is the cross-sectional design of the study, which means that the data were collected at a single point in time.

This limits the ability to draw conclusions about the directionality of the relationships between the variables. Longitudinal studies are recommended in the future to better understand how changes in Grit or SWB over time affect academic stress levels. Additionally, while the study identifies SWB as a mediator, there may be other factors such as social support, emotional intelligence, or mindfulness that could further mediate or moderate the relationship between Grit and academic stress. Future research could explore these additional variables to provide a more comprehensive understanding of the factors that influence students' well-being and academic stress. Despite these limitations, the findings of this study

remain valid and contribute significantly to the understanding of the psychological factors that affect academic stress. The results highlight the importance of Grit and SWB in reducing stress levels, offering practical implications for universities in supporting student well-being.

Conclusion

This study examined the mediating role of subjective well-being (SWB) in the relationship between Grit and academic stress among final-year university students. The findings demonstrate that SWB functions as a partial mediator, indicating that Grit influences academic stress both directly and indirectly through SWB. In other words, students with higher levels of Grit tend to experience lower academic stress not only because of their persistence but also due to enhanced subjective well-being.

Theoretically, these results extend the existing literature by providing empirical support for SWB as a key psychological mechanism linking perseverance and goal consistency (Grit) with the experience of academic stress. The findings clarify the magnitude and nature of this partial mediation in the context of final-year students, thereby deepening the theoretical understanding of how positive psychological constructs interact to influence academic adjustment and stress.

From a practical standpoint, the results underscore the importance of designing and implementing interventions aimed at strengthening Grit and optimizing SWB as effective strategies to mitigate academic stress. Such interventions may include programs that cultivate a growth mindset, enhance self-regulatory skills, and promote overall psychological well-being within university settings.

Author Contributions

As the first author, Nurfaidah Ardis conceptualized the research and formulated the objectives, developed the methodological design and instruments, carried out data collection, conducted the primary analysis, drafted the manuscript, and managed the research administration. Sumedi P. Nugraha provided academic supervision throughout the process, reviewed the methodological design and analysis strategy, and critically reviewed the manuscript with substantive feedback. Salsabila Nasution and Abid Raisardhi assisted with data processing including cleaning, coding, and cross-checking, conducted searches and added supporting references, and supported the journal publication process by harmonizing the manuscript format and coordinating the technical submission. All authors have read, reviewed, and approved the final version of the manuscript.

Declaration of Conflicting Interests

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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