THE ROLE OF GRIT IN ACADEMIC SELF-CONCEPT AND STRESS

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ABSTRACT

Perceptions of self-efficacy in academics can foster persistence in the learning process so that it can change individual academic achievement. Academic self-concept is one indicator of students in terms of achievement. However, in the process, many challenges generally come from internal students such as stress so consistency is needed in terms of student academics. Grit is thought to influence a mediator between stress and academic self-concept. This study aims to determine the effect of grit as a mediator of stress on academic self-concept among students in Jakarta. This quantitative research uses a questionnaire for data collection with several respondents as many as 171 students. The results of this study support the research hypothesis grit is found as a mediator of stress with academic self-concept (-2.38 <1.96). In the simultaneous test, stress and grit strongly influence academic self-concept. It can be concluded that if students experience stress but have high grit, their academic self-concept will also increase.

Keywords: Stress, grit, academic self-concept, college

1. PREFACE

Education is important because it is one of the main targets of the government in improving the welfare of the people. In addition, education is also a way to get coaching, open new jobs or obtain a certain status in society [1]. In other words, through education, a person can improve the quality of his life to become a better person and fulfil various life needs in the future through decent work. To achieve this, individuals need to follow the entire educational process that has been set. As in Indonesia, compulsory education is set for 12 years. After that, higher education becomes an option that is currently also needed by individuals as a specific step that directs individuals to get a job according to their interests. In the educational process taken, academic achievement or achievement becomes an important capital for the next educational stage up to the graduation stage of an individual's study. Based on a study, academic performance is said to be able to predict the transition of college students to success [2]. This shows that education in higher education has a burden for individuals to achieve success compared to previous levels of education. Achieving success in a learning process in higher education is strongly influenced by academic self-concept [3]. Perception of self-ability in terms of academics can foster persistence in the learning process which will also change individual academic achievement. Therefore, academic self-concept and academic achievement are interrelated [4]. Academic problems experienced by students are mainly due to the inability to adapt to the demands of study such as errors in choosing majors, different learning methods from previous academic levels, related to the way lecturers teach, lecture assignments, problems faced in writing a thesis, and career worries in the future. The form of the problem experienced is called a psychological disorder, ranging from mild stress to the heaviest, namely depression and attempted suicide. Psychological stress is an individual's subjective response to the environment that is considered to be a burden or excess capacity [5].

Stress itself can be positive or negative depending on the stressor and the stress level of the individual. Mild stress may be beneficial in cognitive tasks and performance, while persistent high stress can cause anxiety and depression which are entities of neuropsychiatric disease. The stress

response is characterized by increased corticosteroid release. Stress is a process in the individual as an active agent that can influence the impact of the stressor through behavioral, cognitive, and emotional strategies [6]. Research by Siraj [7] found students majoring in medical stress the most influential domain was the academic field. Depression, anxiety, and stress have a negative correlation with academic achievement in other words, the higher the stress, the lower the student's academic achievement [8]. Meanwhile, according to Rafidah et al [9], there was no significant stress factor that could affect academic performance in students. It can be concluded that to a certain extent, moderate stress experienced by students is highly expected in achieving good academic achievement. Another study conducted by Oboth & Okunya [10] found that stress had a moderate and significant relationship with academic performance. In other words, higher stress levels result in poor academic performance. Individual success in a learning process on campus is also influenced by their academic self-concept. If the academic self-concept is positive, the individual will have confidence in his academic abilities and can produce better academic performance [3]. Conversely, the lack of a good or negative academic self-concept can cause individuals to be less able to achieve good academic achievements [11].

Research by Siraj et al [7] proves that higher stress levels can achieve higher academic performance as long as the stress level can be well managed. Research from [12] states that Grit is related to the pursuit of engagement (attachment to what is done) and the meaning of what is done. Grit is followed by working hard to face challenges, maintaining business and long-term interests despite being faced with the risk of failure, challenges, and difficulties in the process [13].

Research conducted by Lee [14] examines the relationship of Grit with academic performance, perceived failure, and also with student stress. The results show that a subjective assessment of an event has a relationship with stress rather than an objective assessment of an external negative event. In addition, psychological resources (Grit) make students less susceptible to stress. Furthermore, both Grit dimensions were negatively related to stress. The results of these findings have potential educational implications for university student services. Universities should consider providing training to develop students' academic ability and courage [15]. Lee's research [14] also presents the results that stress, if not managed properly, can hurt a person's Grit level. It was observed from the path diagram that the results were different from the hypothesized model where academic performance did not have a direct relationship with stress, but the academic performance was correlated with perseverance, which is one of the Grit dimensions that correlate with stress.

Stress
Stress can be defined as a non-specific response mechanism of the body to receive pressures that come from oneself or the environment. Stress in Webster's dictionary is defined as a condition that is usually characterized by symptoms of mental and physical tension, such as depression or hypertension, which can arise from a reaction to a situation in which a person feels threatened, depressed, etc. Stress is not just a stimulus or response, but a process in which the individual can influence the impact of the stressor through behavioral, cognitive, and emotional strategies [6]. Cohen [16] divides 3 dimensions of stress, namely unpredictable, uncontrollable and overloaded/pressure. Unpredictability refers to individuals who cannot predict events that occur in their lives suddenly or suddenly so that they become helpless and feel hopeless. Uncontrollability refers to feelings that cannot be controlled when individuals cannot control themselves in the face of various external demands that affect individual behavior. Overloaded or pressure refers to feeling depressed which can be characterized by various symptoms including feelings of hatred,

low self-esteem, feelings of sadness, anxiety, psychosomatic symptoms, and so on. Individuals with depressed feelings are more likely to experience stress [17].

Academic Self-Concept
Academic self-concept is an academic competence that can be felt by students and is also a form of student involvement in a learning activity which is indicated by 2 aspects, namely self-confidence and students' academic effort in completing their learning tasks [18]. Academic self-concept is primarily influenced by past achievements and perceptions of students' abilities. Students who have effective and positive study habits during school will tend to maintain these habits up to the college level where their motivation is centered on the pursuit of knowledge and enjoying the learning process [4].

Grit
Grit according to Duckworth [19] is defined as a tendency to maintain persistence and enthusiasm for challenging long-term goals, where individuals persist with things that are their goals for a relatively long time until they achieve these goals. Someone who has Grit will continue to make continual improvements while moving forward so that little by little they succeed in achieving their goals. Grit has two aspects. First, is the perseverance of effort, and the second is the consistency of interest. Perseverance of effort is an earnest effort by a person to achieve goals and the ability to withstand within a certain period. This can be shown by the behavior of wanting to work hard, persist in passing challenges and stick to what has become their choice. In this case, it can be interpreted that students who have chosen a major based on their interests are expected to have business perseverance to continue to develop and be more optimal so that their learning outcomes are both in quantity and quality.

Consistency of interest shows how consistent a person's efforts are to achieve a goal. This consistency is reflected in interests and goals that cannot be easily changed or distracted and cannot stay focused on the initially set goals [20]. If you encounter a problem, in solving it well, and not easily turn to other things or other jobs.

2. RESEARCH METHOD
This research uses the correlational quantitative method. This study uses the independent variable, namely stress, the dependent variable, namely the academic self-concept, and the mediator variable, namely grit. The characteristics of the subjects in this study were male or female students aged 18-24 years with non-probability sampling (non-random). Purposive sampling is used in this research.

Stress
Cohen's perceived stress scale is used to measure this variable. This measuring instrument consists of 10 items and has a Cronbach's Alpha value of 0.82. This measuring tool also uses a 5-point Likert scale. An example of an item in this measuring tool is "In the last month, how often have you been angered because of things that were outside of your control?"

Academic Self-Concept
Academic self-concept from Liu & Wang is used to measure this variable. This measuring instrument has two aspects, namely academic confidence and academic effort. Each dimension contains 10 items so the total items in this measuring tool are 20 items. The reliability of this measuring instrument is 0.802.

Grit

The grit scale of Duckworth was used to measure this variable. The Grit measuring instrument consists of 12 items that have an alpha range value on the internal consistency of 0.73-0.83. This measuring instrument uses a 5-point Likert scale. An example of an item on this measuring tool is "I finish whatever I begin".

3.   RESULT AND DISCUSSION

Participants and Settings

Participants in this study can be seen in their characteristics through demographic data based on gender, age, majors taken, education level, current semester, domicile, and campus location. The majority of respondents are female, as many as 129 respondents (75.44%). While the rest are male as many as 42 respondents (24.56%). The majority of respondents were 19 years old as many as 63 respondents (36.84%). While the respondents who are at least 24 years old are 2 respondents (2.92%). The majority of respondents majored in Psychology as many as 73 respondents (42.69%). The majority of respondents have an undergraduate education level, as many as 168 respondents (98.25%). While the rest have master's education levels, as many as 3 respondents (1.75%). The majority of respondents are currently taking semester 3 as many as 65 respondents (38.01%). The majority of respondents live in North Jakarta, with as many as 50 respondents (29.24%). The majority of respondents whose campus locations are in North Jakarta, as many as 79 respondents (46.20%).

Data Analysis

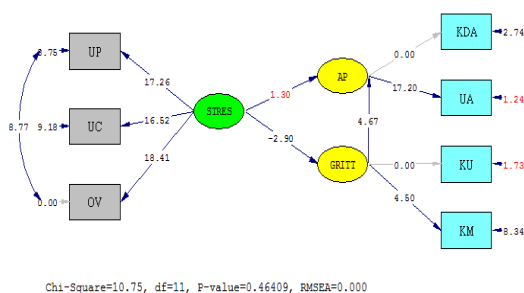Below are estimates for the entire model based on standardized coefficient and t-statistics values.

Figure 1
Standardized Coefficient Estimation Results

Chi-Square=10.75, df=11, P-value=0.46409, RMSEA=0.000
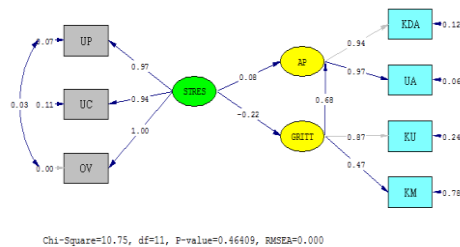
Figure 2
Estimated Results t-Value

Chi-Square=10.75, df=11, P-value=0.46409, RMSEA=0.000

Table 1
Entire Model Fit Test

The Goodness of Fit Index	Cut-Off Value	Result	Conclusion
Chi-square		10.75	Fit
P-value	≥ 0.05	0.46	Fit
RMSEA	< 0.08	0.00	Good Fit
NFI	≥ 0.9	0.99	Good Fit
NNFI	≥ 0.9	1.00	Good Fit
PNFI	≥ 0.5	0.52	Good Fit
CFI	≥ 0.9	1.00	Good Fit
IFI	≥ 0.9	1.00	Good Fit
RFI	≥ 0.9	0.97	Good Fit
GFI	≥ 0.9	0.98	Good Fit
AGFI	≥ 0.9	0.95	Good Fit
PGFI	≥ 0.05	0.39	Good Fit

Based on the table above, all of the criteria show a good fit, which consists of Chi-Square, P-Value, RMSEA, NFI, NNFI, PNFI, CFI, IFI, RFI, GFI, AGFI, and PGFI values. Based on Figure 4.11, the structural equation for the model is obtained as follows.

AP = 0.68*GRIT + 0.084*STRES, Errorvar.= 0.55 , R^2 = 0.45
   (0.15) (0.065) (0.11)
   4.67 1.30 4.96

GRIT = - 0.22*STRES, Errorvar.= 0.95 , R^2 = 0.050
   (0.077) (0.22)
   -2.90 4.24

Based on the results of the above equation, we can conclude that (1) the pass coefficient of the grit variable to the academic self-concept is 0.68. The course is positive. This can increase academic self-concept by 0.68 with an increase of one unit in the grit variable, and vice versa. (2) The path loading factor based on the academic self-concept is 0.084. The course is positive. If the stress increases by one unit, the academic self-concept is increased by 0.084, and vice versa is the same. The value of R^2 (R 4) is 0.45. This means that particle size and stress are affected by a 45.0% of academic self-concept. (3) The path coefficient of stress is 0.22. The course is negative and when the voltage variable increases by one unit, the amount of grasping is 0.22, and vice versa. The value of R^2 (R square) is 0.050. This has a grid of 5.0% on the grit.

Hypothesis Test
A partial test is used to determine which variable has a significant effect. After that, the hypothesis test is carried out. The hypotheses for each test are:

Ho: Independent variable has no significant effect on the dependent variable
Ha: Independent variable has a significant effect on the dependent variable.

Test Criteria:
- Accept Ha if t-count 1.96 or -1.96
- Accept Ho if t-count < 1.96 or > -1.96

Table 2

Partial Hypothesis

Relationship	t-count	t-table	Decision	Conclusion
KDA ← STRESS	1.3	1.96	Ha Rejected	Not Significant
GRIT ← STRESS	-2.9	-1.96	Ha Accepted	Significant
KDA ← GRIT	4.67	1.96	Ha Accepted	Significant

Hypothesis testing for each variable is as follows. (1) the correlation between stress and academic self-concept shows the t-count value of 1.30. Therefore, the alternative hypothesis is rejected. In other words that is stress does not have a significant effect in a positive direction on academic self-concept. (2) Between stress and grit relationship, the t value for the stress variable is -2.90. Therefore, the alternative hypothesis is accepted, which means that stress has a significant negative effect on grit. (3) Between grit and academic self-concept relationship, the t-value of the grit variable is 4.67. It means the alternative hypothesis is accepted, meaning that grit has a significant influence in a positive direction on academic self-concept. The next objective in the analysis of the structural model is to estimate the influence parameters between variables, which will also prove the research hypothesis.

Ho: There is no significant effect
Ha: There is a significant effect

To test this hypothesis, use the F-test. This test is run by comparing F-count with F-table. If F-count is greater than F-table, this also means that there is a significant effect between the stress and grit variables on the academic self-concept variables. Also, if the F-count is lower than the F-table, it means that there is no simultaneous significant effect on the academic self-concept variables between the stress and grit variables.

Table 3

Simultaneously Test

Variable	F-Count	F-Table	Description
Stress and Grit on Academic Self-Concept	68.73	3.05	Significant

The results show the F-count is 68.73. The value of the F-table with a sample size of 171 and the number of exogenous variables is 2, so an F-table of 3.05 is obtained. Thus, F-count is greater than F-table. It means stress and grit simultaneously have a significant influence on academic self-concept.

Mediation Test

A mediation test is carried out to determine whether there is an indirect effect of the independent variable on the dependent variable through the intervening variable. This test is used to test the ability of intervening variables to be mediators of research framework models that are not proportional to the size of the model. The efficiency of the framework depends only on the timing of counterexamples that indicate that it violates the probabilistic security properties that occur in the hypothetical assumptions. The sooner the counterexamples appear, the more efficiently the framework will work.

Table 4

Path Coefficient Test

Path	Relationship	Path Coefficient		Indirect Effect	Error Standard			t-count	t-table	Conclusion
					Direct		Indirect			
		a	b	a.b	Sa	Sb	Sab			
STRESS -GRIT-KDA	STRESS-GRIT	-0.22		-0.15	0.08		0.06	-2.38	1.96	Significant
	GRIT-KDA		0.68			0.15				

The table above shows that stress and academic self-concept are mediated by grit, obtained with the t-value of -2.38. Referring to this value, it can be concluded that there is an influence of grit as a mediator on the relationship between stress and academic self-concept.

4. CONCLUSIONS AND RECOMMENDATIONS
Grit is proven to have a significant effect as a mediator on the relationship between stress and academic self-concept in students. The grit test as a mediator showed results that were to the research hypothesis.

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