


# Analysis of the Influence of Growth Mindset, Fixed Mindset and Self Efficacy on Academic Grit in Industrial Engineering Students, Class of 2020, Faculty of Engineering, Pattimura University, Ambon

Samrotul Yaniah<sup>1</sup>, Novalien Carolina Lewaherilla<sup>2</sup>, Ferdy Leuhery<sup>3</sup>  
<sup>1,2,3</sup>Postgraduate Program of Pattimura University

Article Info	ABSTRACT
<b>Keywords:</b> Growth Mindset, Fixed Mindset, Self Efficacy, Academic Grit	In today's era where technological advances and accelerated transformation require humans to have a mindset that can think critically and creatively in facing life's challenges. This acceleration shapes the character of each person. This character determines a person's decision in making decisions. The phenomenon that occurs is that the characteristics of students in determining decisions in their lectures are different. Not a little influence on the student's lecture period. This research was conducted on 50 Industrial Engineering Students Class of 2020 Pattimura University Ambon. Sampling in this study was carried out using saturated sampling techniques. then a questionnaire was made through a Google Form as many as 20 statements which were then processed using SPSS Software. This result is known by looking at the value of the partial test, of independent variables (Growth Mindset, Fixed Mindset, Self Efficacy) has a positive and significant effect on the dependent variable (Grit Academic).
This is an open access article under the <a href="#">CC BY-NC</a> license 	Corresponding Author: Ferdy Leuhery, Management Study Program, Pattimura University, Jl. Ir. M. Pattimura, Poka Ambon Campus, Postal Code: 97233 Email: <a href="mailto:ferdyleuhery12@gmail.com">ferdyleuhery12@gmail.com</a>

## INTRODUCTION

Quality human resources are one of the important capitals in the development of the Indonesian nation to be able to survive in the midst of the complexity of the times. One way to improve the quality of human resources is through Education

Educational activities are directed towards achieving certain goals called educational objectives (Berry and Parasuraman., 2001).

College is a place of study for students which is generally interpreted as the highest educational institution to educate prospective graduates in a particular field of science. Through this, students are educated to become professional experts in a science or field of expertise and are able to dedicate it for the benefit of society and the nation (Malik Fadjar, 2005).

One of the factors that needs to be reviewed is the mindset, namely regarding its ability to face difficulties and failures. Carol Dweck in her writing Growth Mindset, revisited (September, 2015)

According to Dweck (2015) students who value effort are said to have a Growth Mindset. They consider ability to be a skill that can be changed. Students who consider intelligence to be innate and unchangeable will only make a little effort to achieve, they are said to have a Fixed Mindset.

Students who have a Growth Mindset have a desire to develop and a way to complete the responsibilities they carry. They can think more openly and find creative ways to deal with problems. Students with a Growth Mindset believe that to get optimal results, hard work is needed (Dweck, 2006).

The greater the need for students to achieve academic goals, the greater the motivation to improve their academic achievement. High motivational passion creates a person's total effort to achieve a goal, and the effort is spread over time until the desired result is achieved, then the Academic Grit obtained will be high (Brehm & Self, 1989).

A person with a Fixed Mindset believes that intelligence and other potentials that they have are genetically determined from the start so that there are limits that cannot be penetrated by training or human effort. This belief also makes them have the judgment that their efforts to change the situation will be useless and choose to give up.

In everyday life, Self Efficacy leads us to set challenging goals and persist in the face of difficulties. Baron and Byrne (1991) define Self Efficacy as a person's evaluation of his or her ability or competence to perform a task, achieve, and overcome obstacles.

A person with high Self Efficacy believes that they are capable of doing something to change the events around them, while a person with low Self Efficacy considers themselves basically incapable of doing everything around them.

## METHODS

### Research Design

According to Umar in I Made (2019), a research design is a structured and comprehensive work plan regarding the relationship between variables that are arranged in such a way that the research results can provide answers to research questions.

### Location

The research location was conducted at the Faculty of Engineering, Department of Industrial Engineering, Class of 2020, Pattimura University, Ambon, which is located in Poka, Teluk Ambon District, Ambon City, Maluku.

### Population and Sample.

Population is a collection of all possible people, objects and other measurements that are the object of attention or a collection of all objects of attention (Suharyadi in Jafar (2021)). The population in this study were students of Pattimura University, Department of Industrial Engineering, Class of 2020. There were 50 students.

Sample A sample is a part of a particular population that is of interest (Suharyadi in Jafar (2021)). The sampling method in this study uses saturated sampling, namely all members of the population are sampled, the research sample is 50 students.

### Data collection technique

Data collection techniques are the methods used to collect data needed in research (Sugiyono, 2017). Data collection methods in this study are: Questionnaire (survey). The questionnaire method is a data collection technique carried out by giving a set of written questions or statements to respondents to be answered. Literature Study. Studying previous literature on this research and making it a reference source or library.

### Research Variables

In this study, two variables were used, namely:

#### 1. Independent variable (Independent Variable)

Independent variables, which means the variables that influence or cause changes or the emergence of dependent variables in this study that act as independent variables are Growth Mindset (X1), Fixed Mindset (X2), Self Efficacy (X3).

#### 2. Dependent Variable

Dependent variable, which means the variable that is influenced or that is the result of the independent variable. So in this study, the dependent variable is Academic Grit (Y).

### Measurement Scale

The measurement scale used in this study is the Likert scale proposed by Sugiyono (2019)

### Data Analysis Techniques

Data analysis is an activity of grouping data based on variables from all respondents, tabulating data based on variables from all respondents, presenting data from each variable studied, performing calculations to test hypotheses (Sugiyono, 2019). In this study, data analysis used multiple linear regression with the SPSS.Vs.26 software application.

### Multiple Linear Regression Analysis

Multiple regression is a development of simple linear regression, which can be used to predict future demand based on past data or to determine the influence of one or more independent variables on one dependent variable (Siregar, 2010).

The analysis was conducted to determine the magnitude of the influence caused by growth mindset, fixed mindset, self-efficacy on Academic Grit in Industrial Engineering students of the 2020 batch, Pattimura University, Ambon, partially with multiple linear regression equations, as follows:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e$$

### Individual/Partial Parameter Significance Test (t-Test)

The t-test is known as a partial test, which is to test how each independent variable individually influences its dependent variable. This test can be done by comparing the calculated t with the t table or by looking at the significance column in each calculated t. Where if  $t_{count} > t_{table}$  and sig. value  $< 0.05$  then it is stated to have a significant effect, or vice versa if  $t_{count} < t_{table}$  and sig. value  $> 0.05$  then it can be stated that there is no influence of the independent variable on the dependent variable.

## RESULTS AND DISCUSSION

### Multiple Regression Calculation Results

In data processing using linear regression, it is done to prove the relationship between independent variables and dependent variables, namely the influence of Growth Mindset (X1), Fixed Mindset (X2), Self Efficacy (X3), on Academic Grit (Y). The results of multiple regression calculations can be seen in table 1. below:

Table 1. Multiple Linear Regression Test Results

Variables	Unstandardized Coefficients(B)	t count	Sig.	Information
Constant	-2,060			
Growth Mindset (X1)	0.491	4.657	0.002	Significant
Fixed Mindset(X2)	0.394	3.446	0.001	Significant
Self Efficacy (X3)	0.381	3.302	0.001	Significant
R	0.890			
R Square	0.793			
Adjusted R Square	0.779			
F count	58,570			
Sign. F	0.000			

Source: data (processed) 2023

The regression model based on the results of the analysis with the help of the SPSS 23 program can form a regression equation as follows:  $Y = -2.060 + 0.491X_1 + 0.394X_2 - 0.381X_3 + e$

### Hypothesis Testing

In order to prove whether the independent variable partially has a significant influence on the dependent variable, an analysis is carried out using the t-test method. The following is a table showing the results of the t-test and the size of the t table at a significance of 5% or  $\alpha = 0.05$  :

**Table 2. Hypothesis Testing Results**

	Hypothesis	Mark	Status
1.	Growth Mindset positive towards the Academic Grit of Industrial Engineering students of the 2020 Class of Pattimura University.	tcount = 4.657 t table = 1.677 Sig = 0 .002	(H1 accepted)
2.	Fixed Mindset has a positive effect on the Academic Grit of Industrial Engineering students of Pattimura University Class of 2020.	tcount = 3.466 t table = 1.677 Sig = 0.001	(H2 accepted)
3.	Self Efficacy has a positive influence on the Academic Grit of Industrial Engineering students of the 2020 Class of Pattimura University.	t count = 3.302 t table = 1.677 Sig = 0.001	(H3 accepted)

Source: Primary Data processed 2024

### Discussion of Research Results

The Influence of Growth Mindset on Academic Grit of Industrial Engineering Students Class of 2020, Pattimura University.

Based on the results of the statistical test that have been discussed in the previous chapter, it shows the t-value = 4.657 > t table = 1.677 and the results of the P. Value Sig test = 0.002 < 0.05. Thus, H1: growth mindset has a significant positive effect on the academic grit of Industrial Engineering students of the 2020 Class of Pattimura University.

Students who have a Growth Mindset believe that to get optimal results, hard work is needed. Students who demonstrate Grit behavior tend to accept every task given and face every obstacle they encounter as a consequence that must be carried out so that students continue to want to struggle to carry out their study process well and not make themselves disappointed with the process of their educational journey.

Research conducted by Zhao et al. (2018) in their research also found that the factor that greatly influences the grit of school students in China is Growth Mindset. Growth Mindset changes a person's way of thinking by believing that the level of intelligence a person has can be changed with certain efforts so that this will increase a person's perseverance so that the long-term goals that have been set can be achieved regardless of the positive or negative things that will be obtained during learning. By having a Growth Mindset, students become more motivated to understand learning, love all the processes they go through and are able to learn effectively. The Influence of Fixed Mindset on Academic Grit of Industrial Engineering Students Class of 2020, Pattimura University.

Based on the results of the statistical tests discussed in the previous chapter, the t-count value = 3.466 > t table = 1.677 and the results of the P. Value Sig test = 0.001 < 0.05. Thus, H2: Fixed Mindset has a significant positive effect on the Academic Grit of Industrial Engineering students of the 2020 Class of Pattimura University. Proven. The hypothesis is accepted.

Fixed Mindset is assessed based on student indicators that respond to the desire to complete education with the belief that students can identify the problems that each student has and can provide responses related to their educational problems. This shows that Fixed Mindset can affect Academic Grit.

This study is in line with the study conducted by (Chrisantiana and Sembiring, 2017) Namely, students of the Faculty of Psychology, University of "X" who have a Growth Mindset encourage the development of grit in a higher direction. This means that if students of the Faculty of Psychology, University of "X" believe that their qualities and abilities can be developed with certain efforts, they will be able to maintain perseverance and enthusiasm for challenging long-term goals. Students of the Faculty of Psychology, University of "X" who have a Fixed Mindset will decrease grit. This means that if students of the Faculty of Psychology, University of "X" believe that their qualities and abilities cannot be changed and developed again with certain efforts, then their perseverance and enthusiasm for challenging long-term goals will decrease.

The Influence of Academic Self Efficacy Grit on Industrial Engineering Students Class of 2020, Pattimura University.

Based on the results of the statistical tests discussed in the previous chapter, the calculated  $t$  value =  $(3.302) > t$  table = 1.677 and the results of the P. Value Sig test = 0.001 < 0.05. Thus, H3: Self Efficacy has a significant positive effect on the Academic Grit of Industrial Engineering students of the 2020 intake. Proven. The hypothesis is accepted. It can be explained that self-efficacy with the indicator of students being able to graduate on time. then students always try to achieve academic targets no matter how difficult the lecture process is. So it can be explained that industrial engineering students at Pattimura University Ambon, if students know that they will graduate on time, then students will always try to achieve their academic targets, no matter how difficult the lecture process is.

This is similar to the research conducted by (Putri and Ardias 2021) which had positive test results between the variables Self Efficacy and Grit Academic. The results of the study showed that: First, the Self Efficacy variable (X1) partially showed that there was a significant influence on the Grit variable (Y)

## CONCLUSION

The results of the study showed that there was a significant influence between Growth Mindset and Grit Academic in Industrial Engineering students of Pattimura University Class of 2020. A high Growth Mindset score was produced in a person and a medium Grit Academic score in him. It can be said that there is a relationship between Fixed Mindset and Grit Academic. In this study, the results showed that there was a strong relationship between Fixed Mindset and Grit Academic in Industrial Engineering students of Pattimura University Class of 2020. The Self Efficacy variable has a significant positive effect on the Grit Academic variable in Industrial Engineering students of Pattimura University Class of 2020.

## REFERENCE

- Timbul & Cahyadi, 2017. *Pengaruh Beban Kerja dan Lingkungan Kerja Terhadap Kinerja Karyawan di Perusahaan Daerah Sumatera Utara Perkebunan Tanjung Kasau*. Jurnal Ilmiah Bussiness Progres, Edisi Juni 2017 Vol. 8 Nomor 1.
- Ajrina, Amelia, and Amelia Ajrina. 2023. "Self-Regulated Learning , Growth Mindset and Students ' Grit in Career Preparation Self-Regulated Learning" 12 (2): 231–38.
- Miranda & Lestari, 2023. Perbedaan Kegigihan, Mahasiswa Fakultas, Psikologi Universitas, Medan Area, and Menyusun Skripsi. "Perbedaan Kegigihan Ditinjau Dari Jenis" 8 (4).
- Genia, Trisa, Tesselonika Sembiring, Fakultas Psikologi, and Universitas Kristen Maranatha. 2007. "Pengaruh Growth Dan Fixed Mindset Terhadap Grit Pada Mahasiswa Fakultas Psikologi Universitas ' X ' Bandung," 133–46.
- Hariadi, Lucy, and Joko Sunaryono. 2021. "Hubungan Antara Growth Mindset Dengan Grit Pada Mahasiswa Unaki Yang" 01 (2): 73–84.
- Kaparang, Grace Fresania, Megawati Lestari Gahauna, Profesi Ners, Fakultas Keperawatan, and Universitas Klabat. 2020. "GRIT DAN MINDSET PADA MAHASISWA KEPERAWATAN" 2 (2): 8–16.
- Miranda Thalita Tesalonika. 2023. Kegigihan, Perbedaan, Ditinjau Dari, Jenis Mindset "Pada Mahasiswa Fakultas Psikologi Universitas Medan Area Angkatan 2019 Yang Menyusun Skripsi Fakultas Psikologi Universitas Medan Area Medan Pada Mahasiswa Fakultas Psikologi Universitas Medan Area Angkatan 2019 Yang Menyusun Skripsi Diajukan Kepada Fakul."
- Mayshita, Aisya. 2023. "Hubungan Antara Growth Mindset Dan Grit Akademik Pada Mahasiswa Bekerja The Correlation between Growth Mindset and Academic Grit in Working College Students" 8 (1): 34–43.
- Muhibbin, Maulana Arif, Universitas Airlangga, Ratna Sari Wulandari, and Universitas Airlangga. 2021. "The Role of Grit In Indonesian Student" 3 (2): 112–23.
- Pratiwi, Marisya, Rosada Dwi Iswari, Melania Delaritas Nesvita, and Ummul Sabila Khairiyah. 2023. "Growth Mindset and Grit: Examining the Academic Buoyancy of College Students Implementing Online Lectures" 12 (1): 70–80.
- Psikologi, Sarjana, and Isnaeni Mas. 2019. *Pengaruh Growth Mindset Terhadap Grit Akademik Pada Mahasiswa Yang Mengikuti Organisasi*.
- Putri, Nabella Andryani, and Amalia Trianita Wilman. 2023. "Perbandingan Antara Growth Mindset Dan Fixed Dampaknya Pada Prestasi Akademik Mindset" 04 (01): 51–58.
- Putri, Respiani, and Widia Sri Ardias. 2021. "Pengaruh Self Efficacy Dan Self Compassion Terhadap Grit Pada Komunitas Kepul" 12 (2): 209–25.
- Rohmah, Fatin, Nur Wahidah, Edi Joko Setyadi, and Gisella Arnis Grafiyana. 2021. "Efektivitas Pelatihan Growth Mindset Pada Siswa Sma Effectiveness of Growth Mindset Training for High School Students" 19: 103–14.
- Wahidah, Fatin R N, Ugung D A Wibowo, Gunawan Gunawan, and Intan Luthfiyanti. n.d. "Growth Mindset Dan Grit Pada Pimpinan Cabang Muhammadiyah" 9623: 819–30.