

## The Correlation Between Adversity Quotient and Self-Regulated Learning of Official Students at Forestry

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### ABSTRACT

*The study was conducted based on the researcher's interest in the condition of students in learning, where the Pekanbaru forestry vocational high school is one of 5 forestry vocational schools in Indonesia under the Ministry of Environment and Forestry of the Republic of Indonesia, which has different rules and ways of educating from schools in general. High demands on school quality standards require students to condition themselves and their minds in a pressure both in managing time and the very monotonous environment faced by students, aiming to achieve an achievement and good results. Based on these problems, this study was conducted with a quantitative research method that uses a scale as a measuring tool for collecting research data. The population in this study were all students of Forestry Vocational High School Pekanbaru, the total sample was 209 students of class X and XI which were determined by purposive random sampling technique. Based on the results of data analysis using product moment correlation analysis techniques with a correlation coefficient ( $r$ ) of (0.695) with a significant ( $p$ ) of (0.000) ( $p < 0.01$ ), the magnitude of the variable contribution value ( $R$  squared) 48.3%. So it is concluded that the hypothesis in this study is accepted, with the explanation that there is a positive and significant relationship between adversity quotient and self-regulated learning in Pekanbaru Forestry Vocational High School students.*

**Keywords:** *adversity quotient, self-regulated learning*

### INTRODUCTION

Education is an investment in human resources, playing a crucial role in life by providing individuals with the foundation to compete for a decent living. According to Sagala (2013), education is a national development priority to preserve dignity, improve human resource quality, and compete effectively based on the cultural norms prevailing throughout Indonesia. Vocational High School (Sekolah Menengah Kejuruan) is evidence of the government's commitment to achieving educational quality in line with its vision. This vocational school prepares students to enter the workforce after completing a 3-year education. One such institution is the Forestry Vocational High School in Pekanbaru, a government-owned school where all educational and living expenses during dormitory residency are covered by the state through the national budget (APBN).

Competition to enroll in the Forestry Vocational High School in Pekanbaru is fierce due to high enthusiasm among prospective students. Applicants come from all corners of Sumatra, and the number of applicants increases each year. In 2016, there were 1038 applicants, and 102 of them, meeting the requirements through the

selection process, were mandated to stay in the dormitory during the 3-year educational period.

The school's excellent reputation and intense competition make it highly sought after by prospective students. Those who meet the criteria face the challenge of adhering to the regulations of the Forestry Vocational High School in Pekanbaru. This institution caters to students aged 16 to 18 and is known for its strict regulations.

Based on interviews with the school's head, if a student scores below the standard in one of the six productive subjects or below average in two non-productive subjects out of the eleven, the school issues a warning. The student is required to improve the problematic subject grades. Failure to comply with the sanctions and school regulations may lead to expulsion, with the school imposing financial penalties, approved by both the school and the student's guardian.

In interviews with subject teachers and students, it was revealed that class rules include assigning a student as a tutor, responsible for mediating and explaining lesson materials to other students. The tutor is usually a high-achieving student. However, problems arise when a member of the tutor's group faces challenges with certain subject grades. In such cases, the teacher equalizes grades among the group members, including the tutor.

Students complain about the lack of quality study time outside school hours and insufficient rest, attributed to the school's schedule and extracurricular activities. The full-day learning process, combined with dormitory activities, restricts students' study time outside school hours, leading to increased stress due to the need to comply with every rule at the Forestry Vocational High School in Pekanbaru.

Observations of students in three classes revealed behaviors such as drowsiness, indifference to teachers during lessons, and completing homework during class. The school imposes physical penalties, such as running laps carrying wooden beams or chairs, through mentors for students exhibiting problematic behaviors, which are challenging to avoid due to the varying physical conditions of students each day.

The outlined issues indicate that students need to optimize self-regulated learning to successfully complete their education at the Forestry Vocational High School in Pekanbaru. Zimmerman, as cited in Schunk (2012), defines self-regulated learning as the systematic use of cognitive, emotional, and behavioral strategies by students to achieve their goals.

Students facing pressure during their education in Forestry Vocational High School in Pekanbaru are required to have a high adversity quotient to overcome obstacles until the completion of their education. Adversity refers to situations where all students in a cohort receive punishment or measures if one student violates the rules. Students report issues such as late entry to class, non-participation in assembly, disciplinary issues related to uniform attire, dormitory cleanliness, and respect towards seniors and mentors.

Someone with a high adversity quotient does not ignore obstacles but faces challenges with resilience, able to endure and rise above sadness, ready to confront future obstacles (Wardani and Saidiyah, 2016).

Information gathered from teachers and students indicates factors contributing to adversity quotient issues, including mandatory participation in various competitions, the need to accumulate achievement points, mastery of a personal development field, collaboration with peers, and addressing remedial grades within a specified time.

These problems represent the challenges experienced by every student in the Forestry Vocational High School in Pekanbaru. Despite difficulties such as limited study time and a tight schedule, students are required to meet the school's demands. This aligns with Stoltz's (2000) concept of adversity quotient as an intelligence function in facing routine obstacles.

Previous studies on adversity quotient and self-regulated learning variables revealed that school quality influences students' adversity quotient, with teachers playing a significant role in character development. The focus of this study is on students at the Forestry Vocational High School in Pekanbaru, known for its high admission standards and disciplined teachers.

Given the aforementioned problems, the researcher is interested in examining the correlation between adversity quotient and self-regulated learning variables among students at the Forestry Vocational High School in Pekanbaru. The focus is on understanding the extent to which students' adversity quotient influences their self-regulated learning during their education at the school.

## RESEARCH METHOD

The researcher employed a study technique to explore the relationship between variables, commonly referred to as quantitative research. This method seeks to understand the extent of the relationships between variables that influence each other.

### Variable Identification

Based on Bungin's study (2005), variables are diverse subjects in qualitative forms. Therefore, variables must be explained with their parameters and indicators. The variables in this study are the dependent variable, Self-regulated Learning, and the independent variable, Adversity Quotient.

### Research Subjects

The sample size for this study comprises 209 students from the Forestry Vocational High School in Pekanbaru. The sampling technique used is purposive sampling. The characteristics of the sample are as follows: (1) Students of the Forestry Vocational High School undergoing education in Pekanbaru. (2) Actively participating in the learning materials of the Forestry Vocational High School, specifically in classes

X and XI. (3) Not currently engaged in field practices. (4) Age: 15-17 years old. (5) Students residing in dormitories. (6) Students receiving semi-military guidance.

## Research Instrument

The scale in this study covers adversity quotient and self-regulated learning. Values for favorable statements are as follows: Very Suitable (SS) is assigned a value of 4, Suitable (S) is assigned a value of 3, Not Suitable (TS) is assigned a value of 2, and Very Unsuitable (STS) is assigned a value of 1. For unfavorable statements, Very Suitable (SS) is assigned a value of 1, Suitable (S) is assigned a value of 2, Not Suitable (TS) is assigned a value of 3, and Very Unsuitable (STS) is assigned a value of 4. Subjects with high scores will have correspondingly high intensity levels, and vice versa.

This scale is adopted from Herawaty's study (2013) based on Zimmerman's (1989) dimensions of self-regulated learning, including metacognition, motivation, and attitudes/behaviors. Aspects of self-regulated learning are explained in several items that encompass both favorable and unfavorable statements.

The scale for the Adversity Quotient dimensions, according to Stoltz (2000), covers control, origin, ownership, reach, and endurance. Aspects of the adversity quotient are described in items that include both favorable and unfavorable statements. A pre-test will be conducted before the actual field study. The researcher conducted a direct tryout and provided instructions for completing the tryout scale. The completion process took 30 minutes, with the researcher presenting 93 tryout scale items to a total of five classes in grades X, XI, and XII.

Based on the results of the tryout with 150 students for the self-regulated learning and adversity quotient scales, some items were eliminated, resulting in 86 remaining items (43 for self-regulated learning and 43 for adversity quotient), which were then used in the actual research.

## Data Analysis Method

Before hypothesis testing, the researcher conducted tests to fulfill the prerequisites. First, a normality test was performed to determine whether the population data followed a normal distribution. Subsequently, a linearity test was conducted to understand the direction, shape, and strength of the correlation between variables x and y. Following these preliminary tests, hypothesis testing was carried out using correlation analysis to examine the correlation between adversity quotient and self-regulated learning.

## RESULTS AND DISCUSSION

### Result

The data describing the relationship between adversity quotient and self-regulated learning has been collected, processed, and analyzed.

**Table 1. Relationship between Adversity Quotient and Self-Regulated Learning**

Research Variables	The X score is obtained empirically.				The X score is obtained hypothetically.			
	X	X	M	SD	X	X	M	SD
	max	min			max	min		
<i>Self-regulated learning</i>	163	101	132,50	12,957	172	43	107,5	21,5
<i>Adversity quotient</i>	169	103	137,43	13,547	172	43	107,5	21,5

Source: Processed by the author, 2023.

Based on the table above, it generally illustrates that the obtained results for self-regulated learning range from 101 to 163. Meanwhile, the adversity quotient results for the subjects relatively follow a model ranging from 103 to 169. According to the empirical mean value for the self-regulated learning variable being greater than the hypothetical mean, the obtained result for the self-regulated learning variable is 132.50, compared to the hypothetical mean of 107.5. This implies that if subjects have self-regulated learning > compared to what is predicted hypothetically. The adversity quotient variable has a different comparison, meaning that empirically, the results are greater compared to the hypothetical. The empirical result for the adversity quotient variable is 137.43, compared to the hypothetical mean of 107.5, indicating that subjects have a higher adversity quotient compared to the predicted hypothetical result.

Based on the results obtained from the comparison of empirical values to hypothetical values for the adversity quotient variable, there is a difference (empirical has a higher result compared to the hypothetical). The empirical result for the adversity quotient variable is 137.43, compared to the hypothetical mean of 107.5, meaning that subjects have a higher adversity quotient compared to what is predicted hypothetically.

To measure self-regulated learning and adversity quotient in the study subjects, the author applied common classifications as follows:

**Table 2. Categorical Formulas**

Formula	Category
Very High	$X \geq M + 1,5 SD$
High	$M + 0,5 SD \leq X < M + 1,5 SD$
Moderate	$M - 0,5 SD \leq X < M + 0,5 SD$
Low	$M - 1,5 SD \leq X < M - M 0,5SD$
Very Low	$X \leq M - 1,5 SD$

Source: Processed by the author, 2023.

Note:

M : Empirical Mean

SD : Standard Deviation

Based on the categorization explanation and formula clarification, assessment criteria for the self-regulated learning and adversity quotient variables are established as seen in the table:

**Table 3. Self-regulated Learning Criteria**

Category	Score Range	Number of Students	%
Very High	> 151,935	23	11
High	138,878 – 151,935	31	15
Moderate	126,021 – 138,978	94	45
Low	113,064 – 126,021	52	25
Very Low	< 113,064	9	4
Total		209	100

Source: Processed by the author, 2023.

Based on the established results and the total number of self-regulated learning scale items being 43 items, the maximum value is 174, and the minimum value is 43. The standard deviation is 21.5. In this study, self-regulated learning is classified as moderate, with a percentage of 45%, and a total selected sample of 94 students with a range from 126.021 to 138.978.

**Table 4. Adversity Quotient Criteria**

Category	Score Range	Number of Students	%
Very High	> 157,750	24	11
High	144,203 – 157,750	40	19
Moderate	<b>130,656 –</b>	73	35
Low	<b>144,203</b>	62	30
Very Low	117,109 – 130,656	10	5
	< 117,109		
Total		209	100

Source: Processed by the author, 2023.

Based on the obtained results and the number of adversity quotient scale items, which include a total of 43 items, the maximum value is 174, the minimum value is 43, and the standard deviation is 21.5. The adversity quotient in this study falls into the moderate category, with a percentage of 35%, and a total selected sample ranging from 130.65 to 144.9203.

## Assumption Test

### Normality Test

Based on the normality test results in the table below, self-regulated learning obtained a Kolmogorov-Smirnov Z value of 0.977, with an asymptotic significance value of 0.295 ( $p > 0.05$ ). Through the processing of the obtained data, it can be concluded that the data in the self-regulated learning variable is normally distributed.

**Table 5. Normality Test Results**

Variabel	Kolmogorov-Smirnov Z	Asymp. Sig.	Note
<i>Self-regulated learning</i>	0,977	0,295	Normal
<i>Adversity quotient</i>	1,122	0,161	Normal

Source: Processed by the author, 2023.

Normality test for the adversity quotient variable, the normality test resulted in a Kolmogorov-Smirnov Z value of 1.122, with an asymptotic significance value of 0.161 ( $p > 0.05$ ). Through the processing of the obtained data, it can be stated that the data presented in the adversity quotient variable is normally distributed.

### Linearity Test

The linearity test serves to examine the extent of correlation between the dependent and independent variables by applying the principle of significance ( $p$ ) from the F value (deviation from linearity). If  $p > 0.05$ , it means there is linearity; otherwise, if  $p < 0.05$ , it indicates non-linearity, meaning the correlation between the dependent and independent variables is non-linear. The linearity testing criteria apply a significance level of 5%.

**Table 6. Linearity Test Results**

Linieritas	F	Note
<i>self-regulated learning</i> *	1,021	Linier
<i>adversity quotient</i>		

Source: Processed by the author, 2023.

Based on the linearity test results, the aim is to demonstrate the correlation between variables. With the obtained scale distribution, the data processing yielded an F value (deviation from linearity) of 1.021, with a significance value ( $p$ ) of  $0.450 > 0.05$ . Thus, it can be concluded that the two variables, self-regulated learning and adversity quotient, have a linear correlation. With this result, the data requirements are fulfilled, and the next test can be conducted. The test is performed using the Pearson product-moment correlation in the hypothesis testing of the study.

## Hypothesis Testing

After conducting the criteria analysis test, the next step involves the use of the Pearson product-moment correlation analysis, which is an instrument in statistics for testing hypotheses of two variables with interval or ratio scales. This analysis aims to examine the correlation between the adversity quotient and self-regulated learning of students at SMK Kehutanan Pekanbaru.

**Table 7. Hypothesis Testing Results**

Variabel X	Variabel Y	Pearson Correlation	p
<i>self-regulated learning</i> *	<i>adversity quotient</i>	0,695	<0,001

Source: Processed by the author, 2023.

According to the Pearson product-moment correlation test, the hypothesis in this study suggests a significant correlation between the adversity quotient and self-regulated learning of students at SMK Kehutanan Pekanbaru. The analysis yielded a correlation coefficient of 0.695 with (p) 0.000 ( $p < 0.01$ ).

**Table 8. Effective Contribution Results**

Variabel	Correlation Coefficient	R	Effective Contribution
<i>self-regulated learning</i> *	0,483	0,695	48%

Source: Processed by the author, 2023.

According to the coefficient of determination, the Rsquared value obtained is 0.483, indicating the extent of the contribution of the adversity quotient variable to self-regulated learning. Thus, the contribution of adversity quotient to self-regulated learning is 48.3%, while the remaining 51.7% is attributed to other variables outside the scope of this study.

## Discussion

Hypothesis testing can be conducted at the beginning of the research when the researcher tests assumptions. This test serves as a prerequisite in the study, aiming to examine how the item results are based on field research. The normality test results for self-regulated learning yielded a Kolmogorov-Smirnov Z value of 0.977 with an asymptotic significance value of 0.295 ( $p > 0.05$ ). In the adversity quotient variable, the Kolmogorov-Smirnov Z value was 1.122 with an asymptotic significance value of 0.161 ( $p > 0.05$ ). Through the data processing, it can be said that the data presented in the adversity quotient and self-regulated learning variables are normally distributed.

Linearity testing aims to determine the correlation between variables. According to the scale distribution results, the processing showed an F value (deviation from linearity) of 1.021 with a significance value (p) of  $0.450 > 0.05$ . Based on these results, it is stated that the two variables, self-regulated learning and adversity quotient, have a linear correlation.

The data analysis results for hypothesis testing in this study show a significant positive correlation between adversity quotient and self-regulated learning in students at SMK Kehutanan Pekanbaru. The study's data analysis, using the product-moment correlation method, determined a correlation coefficient (r) value of 0.695 with a significance value (p) of 0.000 ( $p < 0.01$ ). This testing suggests that adversity quotient, as an independent variable, provides a correlation with self-regulated learning.

Descriptive results indicate that the self-regulated learning and adversity quotient variables in the study fall into the moderate category. Self-regulated learning has a percentage of 45%, with a total sample of 94 students out of 209 at SMK Kehutanan Pekanbaru. The adversity quotient variable has a percentage of 35%, with a total sample of 73 students out of 209 at SMK Kehutanan Pekanbaru.

This research contributes by demonstrating that the independent variable has an impact on the dependent variable. To determine the extent of the contribution of the dependent variable to the independent one, it can be inferred from the coefficient of determination, with an  $R^2$  value of 0.483. This shows that the contribution of the adversity quotient variable to self-regulated learning in this study is 48.3%, with the remaining 51.7% attributed to other variables beyond the scope of this study.

Based on the previously explained results, it can be said that, according to the theoretical foundations of the variables discussed in the research, the correlation between adversity quotient and self-regulated learning in students at SMK Kehutanan Pekanbaru is supported. According to Schunk (2012), self-regulated learning is a crucial step in a person's personality to exert control over their thoughts, feelings, impulses, tastes, and task performance. Thus, self-regulated learning seems to depend on an individual regulating behavior to keep themselves focused on achieving goals.

According to the theory of Willis (2012), self-regulated learning is a requirement for individuals during the learning process, triggering motivation. Thus, they obtain the drive (activity/effort) to achieve their goals. In the learning process, students make efforts and have the will to achieve their goals because if they do not have control over themselves in learning, they will face difficulties due to the high demands and standards of the school.

The research by Herawaty (2013) on students indicates the low self-regulated learning of students in learning, such as the lack of skills in taking responsibility assigned by teachers. Some students have ideas to postpone tasks, and tasks given tend to depend only on waiting for guidance from educators regarding the tasks to be done. Students lack articulation, find it difficult to understand the material, and only a few students want to ask questions to the teacher.

The study's findings show that adversity quotient and self-regulated learning contribute by 48.3%, indicating that students with a high adversity quotient positively impact self-regulated learning at SMK Kehutanan Pekanbaru. Good self-regulated learning allows students to seek techniques and focus in understanding a learning process. This is in line with Omroad's (2009) emphasis on students' steps related to self-control, motivational drive, and optimal implementation of KBM (Kegiatan Belajar Mandiri or Independent Learning).

Zimmerman (1990) explains in his study that self-regulated learning is an academic achievement that will be obtained if students have good study hours, focusing on how students choose, arrange, or make themselves understand the lesson. Within themselves, plans are formed on how they plan and organize themselves in learning. Then, the study by Latifah (2010) explains the contribution of self-regulated learning tactics to academic achievement. Therefore, to achieve high learning achievements, the use of self-regulated learning tactics must be considered. Students who can control themselves in learning will achieve positive conditions in understanding the learning they are studying. The ability to self-regulate provides positive outcomes for students in achieving good performance.

Based on the research mentioned above and supported by Fatimah's (2013) study, the research shows differences in academic achievement between trained and untrained.

## CONCLUSION

According to data analysis, it can be said that there is a positive and significant correlation between adversity quotient and self-regulated learning of Pekanbaru Forestry Vocational School students. This positive correlation shows that the higher the adversity quotient, the higher the self-regulated learning of Pekanbaru Forestry Vocational School students. On the other hand, the adversity quotient is getting lower so that the self-regulated learning of Pekanbaru Forestry Vocational School students is getting lower.

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# Reslaj: Religion Education Social Laa Roiba Journal

Volume 6 Nomor 4 (2024) 2018 - 2029 P-ISSN 2656-274x E-ISSN 2656-4691  
DOI: 10.47476/reslaj.v6i4.1196

Zimmerman, J. B. (1990). *Self-regulated Learning and academic achievement: Overview. Journal of educational psychology*. Vol 25(1). 3-17.