

The Effect of Self-Esteem and Self-Control on Mathematical Creative Thinking Ability Students of SMP Negeri 4 Purwokerto

Sisfi Sulistiani¹✉

¹Universitas Islam Negeri
Profesor Kiai Haji Saifuddin
Zuhri Purwokerto, Indonesia

✉ Corresponding email:
sisfisulistiani2000@gmail.com

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Abstract: This quantitative survey aims to investigate the collective and individual influences of self-esteem and self-control on the mathematical creative thinking ability of ninth-grade students at SMP Negeri 4 Purwokerto. The study population consists of 279 class IX students, with a sample of 165 students selected using the Slovin formula and simple random sampling technique. Data were collected through tests assessing mathematical creative thinking abilities, as well as self-esteem and self-control questionnaires. Data analysis involved simple linear regression, multiple linear regression, and statistical tests (t-tests and F-tests). The findings indicate several significant relationships: 1) Self-esteem positively influenced the mathematical creative thinking skills of class IX students ($t = 2.937$, greater than the critical t-value of 1.974), with the regression equation $\hat{Y} = 6.173 + 0.846X_1$. 2) Self-control also positively influenced mathematical creative thinking skills ($t = 4.234$, greater than the critical t-value of 1.974), with the regression equation $\hat{Y} = 4.518 + 0.891X_2$. 3) Simultaneously, self-esteem and self-control collectively influenced mathematical creative thinking ability ($F = 54.037$, greater than the critical F-value of 3.051), with a coefficient of determination indicating that 40% of the variance in students' mathematical creative thinking ability was explained by these variables. The multiple regression equation $\hat{Y} = -2.872 + 0.403X_1 + 0.583X_2$ demonstrated a positive correlation between self-esteem, self-control, and mathematical creative thinking ability. In conclusion, higher levels of self-esteem and self-control among students were associated with increased mathematical creative thinking ability.

Keywords: Mathematical Creative Thinking Ability; Self-Esteem; Self-Control.

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A. Introduction

Developing students' potential to become creative human beings is one of the goals of national education, which is stated in the Law of the Republic of Indonesia Article 3 Number 20 of 2003 concerning the National Education System. Then it has been outlined in Ministerial Regulation Number 22 of 2006 so that students through learning mathematics can have the ability to think creatively. The ability to think creatively mathematically is also one of the cognitive components of students that can support their success in the learning process (Thoyibi & Sangco, 2023). The low ability to think creatively can also have implications for low student achievement. Apart from that, considering that some math problems cannot only be solved in one way, so that some of these things make creative thinking skills important to develop in schools.

Bishop (Sri Hastuti, 2018) reveals the importance of someone developing the ability to think creatively mathematically, that is, a person needs two mathematical thinking skills including creative thinking and analytical thinking. So that the ability to think creatively mathematically can be said as one part of the higher order thinking skills that can be achieved by students after going through the process of learning mathematics. By developing mathematical creative thinking skills, students will be able to face complex mathematical challenges more confidently and effectively. They can see problems from various perspectives, apply various strategies, and think innovatively in finding the right solution. This will help them develop critical thinking and analytical skills that are needed in many areas of work and everyday life (Amany & Nuha, 2023).

However, the reality on the ground shows that the ability to think creatively-mathematically is still not optimal in its development. This is in line with the results of an interview with one of the mathematics teachers at SMP Negeri 4 Purwokerto, that the aim of implementing mathematics learning is only to pursue the completeness target without considering students' creative thinking abilities. Teachers more often give questions that have a single and procedural answer. So that students are not used to answering questions that contain indicators of creative thinking. In addition, research conducted by (Intan, 2020) suggests that questions created by teachers that lead to the ability to think creatively mathematically have not received much space in learning mathematics. Of course, this is enough reason for researchers to conduct research related to students' mathematical creative thinking abilities.

In learning mathematics besides emphasizing cognitive abilities, it also develops students' affective abilities. This is in line with the many studies related to creative thinking skills which are linked to several students' affective abilities that are able to influence students' mathematical creative thinking abilities including Self Concept and Self Confidence (Asep & Adi, 2018; Nur Kamala, 2019; Pitria & Kurnia, 2022).

Based on several studies on affective abilities that affect the ability to think creatively in mathematics, researchers are interested in examining the effect of self-esteem and self-control on the ability to think creatively in mathematics. Because another fact was found from the interview results, namely that there were differences in students' self-esteem. There are students who feel that the lack of recognition from the teacher or classmates results in a lack of self-esteem, is not optimistic, is not confident, and is not brave in teaching and learning activities and expressing opinions. There are other students who tend to be afraid of facing the teacher's response, are unable to foster good communication so that they look more closed to the teacher and friends around them. The teacher also believes that if students can show confidence and sincerity in their ability to work on math problems, then they will be able to develop themselves to be more creative in answering them.

In learning mathematics, self-esteem is considered to have an important role because students with higher self-esteem will continue to try without giving up in solving all problems in learning mathematics or may be able to solve them creatively using various ways based on their own ideas. It's different if a student has low self-esteem, of course when dealing with math problems it will be easier to give up and think that he can't solve it before he tries his best. Of

course, such an attitude will have a negative influence on student development in the learning process (Eliza, 2017).

The next affective ability that is considered to be able to influence the ability to think creatively in mathematics is self control. According to (Sumarmo, 2012) the ability to think creatively has three aspects, including cognitive, affective, and metacognitive skills. The affective skills contained in creative thinking include feeling problems and opportunities, being open, building self-confidence, and controlling oneself. In addition, according to Marzano (Sumarmo, 2012) if someone wants to be a creative thinker, doing all tasks must be based on internal motives and not because of external motives, and be proactive. To be a proactive student means you need to know about ways and attitudes in controlling life or self-control.

When a student's self-control is assessed as lacking, this can result in behavior that is deviant and not in accordance with the norm. This will make it difficult to find the right solution in dealing with problems. So self control is considered to be able to influence the ability to think creatively mathematically. In line with the results of an interview with one of the mathematics teachers at SMP Negeri 4 Purwokerto, it was found that when students were given individual assignments there were still students who seemed to only copy their friend's work and delayed doing the task or commonly known as procrastination. The emergence of this attitude of procrastination is influenced by several factors, one of which is the low ability to self-control or self-control (Ika & Najlatun, 2019). Even though the assignment given by the teacher can be an asset for students to get used to solving mathematical problems independently using their own ideas, so that it will improve students' mathematical creative thinking skills.

Therefore the researcher suspects that self-esteem and self-control can have an influence on students' mathematical creative thinking abilities. So that researchers are interested in researching more deeply about the effect of self-esteem and self-control on students' mathematical creative thinking abilities at SMP Negeri 4 Purwokerto.

B. Methods

This research uses a quantitative approach. The research was carried out by collecting data using research instruments and statistical data analysis by testing hypotheses that had been previously set. The research method used is survey method. (Sugiyono, 2019) states that the survey research method is a quantitative research method used to collect data on the past or present and test several hypotheses from samples taken from certain populations.

The population in this study were all class IX students at SMP Negeri 4 Purwokerto which were divided into 8 classes with a total of 279 students. Because the number of population is known, then to determine the number of samples in this study using the Slovin formula and obtained as many as 165 students. Then the sampling technique used is Simple Random Sampling, which means that the sample is chosen randomly without regard to the existing strata. Thus, each element in the population has the same probability of being selected as the sample in this study. This technique is used because the members of the population in this study are considered homogeneous.

The data collection method in this study used self-esteem questionnaires and self-control questionnaires as well as mathematical creative thinking ability tests. Previously the

questionnaire and questions had been tested for validity using the Pearson product moment correlation validity test and were declared valid and reliable through a reliability test using Cronbach's Alpha. Apart from that, it has also been approved by experts in the field of psychology, to ensure that the questionnaire used in this study is in accordance with the indicators in the research variables and is suitable for use in data collection. After the data is obtained, then data analysis is carried out to test the research hypothesis. The analysis technique used is simple linear regression analysis along with the prerequisite analysis tests, namely normality, linearity, regression significance test, regression equation, and statistical t test. In addition, it also uses multiple regression analysis with the classic assumption test, namely normality, heteroscedasticity, autocorrelation, multicollinearity, and multiple determination coefficients as well as the F statistical test.

C. Results and Discussion

1. Result

a. Simple Linear Regression Analysis

1) Normality Test

This test is carried out to determine whether the distribution of data is normally distributed or not. The decision making criterion is if the significance value is ≥ 0.05 , it means that the data is normally distributed and further analysis can be carried out (Anwar, 2009). The test is not carried out per variable but is carried out on the residual value, using the Kolmogorov Smirnov method, with the following results:

**Table 1. Normality Test
One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual
N		165
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	8.16892823
Most Extreme Differences	Absolute	.045
	Positive	.024
	Negative	-.045
Test Statistic		.045
Asymp. Sig. (2-tailed)		.200 ^{c,d}

Based on the SPSS output, it is known that the significance value is $0.200 > 0.05$. So that according to the decision-making criteria, it can be concluded that the questionnaire data of self-esteem, self-control and tests of mathematical creative thinking abilities of class IX students of SMP Negeri 4 Purwokerto are normally distributed.

2) Linearity Test

The linearity test is used to evaluate whether the distribution of the data obtained has a linear pattern or not, because this test is related to the use of simple linear regression. The decision making criterion is if the Deviation from Linearity ≥ 0.05 then the

relationship between variables is linear. In addition, it can also be seen in the significance value (linearity) <0.05 , so the two variables can be said to have a linear relationship (Anwar, 2009). Following are the results of the linearity test on the data obtained in this study:

Table 2. Self Esteem Linearity Test and Mathematical Creative Thinking Ability

ANOVA Table			Sum of Squares	df	Mean Square	F	Sig.
Kemampuan Berpikir Kreatif * Self Esteem	Between Groups	(Combined)	8155.338	31	263.075	3.468	.000
		Linearity	6090.205	1	6090.205	80.280	.000
		Deviation from Linearity	2065.133	30	68.838	.907	.608
	Within Groups		10089.630	133	75.862		
	Total		18244.969	164			

Based on the output of SPSS version 25, it is known that the deviation from linearity value is $0.608 > 0.05$ and a significant value (linearity) is $0.000 < 0.05$. So based on the decision-making criteria, it can be concluded that the relationship between self-esteem and the ability to think creatively mathematically is linear.

Table 3. Self-Control Linearity Test and Mathematical Creative Thinking Ability

ANOVA Table			Sum of Squares	df	Mean Square	F	Sig.
Kemampuan Berpikir Kreatif * Self Control	Between Groups	(Combined)	8430.434	32	263.451	3.543	.000
		Linearity	6718.133	1	6718.133	90.355	.000
		Deviation from Linearity	1712.301	31	55.236	.743	.831
	Within Groups		9814.535	132	74.353		
	Total		18244.969	164			

Based on the output of SPSS version 25, it is known that the Deviation from Linearity value is $0.831 > 0.05$, and the significance value (linearity) is $0.000 < 0.05$. So based on the decision-making criteria it can be concluded that the relationship between self-control and the ability to think creatively mathematically is linear..

3) Regression Significance Test

Regression significance test was conducted to determine whether the relationship between the independent variable and the dependent variable is significant or not. The regression significance test is examined through hypothesis testing as follows:

H_0 : The regression direction coefficient is not significant

H_1 : The coefficients mean

The H_0 test criteria are accepted if the value of Sig. > 0.05 , the regression is meaningless, and H_0 is rejected if the Sig. ≤ 0.05 , the regression means (Indra Jaya, 2010). The following are the results of the regression significance test on the data obtained in this study:

Table 4. Significance Test of Self Esteem Regression and Mathematical Creative Thinking Ability

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6090.205	1	6090.205	81.672	.000 ^b
	Residual	12154.763	163	74.569		
	Total	18244.969	164			

a. Dependent Variable: Kemampuan Berpikir Kreatif

b. Predictors: (Constant), Self Esteem

Based on the output of SPSS version 25, it is known that the significance value is $0.000 < 0.05$. Based on the decision making criteria, H_0 is rejected. So it can be concluded that the regression between self-esteem and students' mathematical creative thinking ability is significant. Thus, the self-esteem coefficient can be used to predict students' mathematical creative thinking abilities.

Table 5. Significance Test of Self Control Regression and Mathematical Creative Thinking Ability

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6718.133	1	6718.133	95.001	.000 ^b
	Residual	11526.835	163	70.717		
	Total	18244.969	164			

a. Dependent Variable: Kemampuan Berpikir Kreatif

b. Predictors: (Constant), Self Control

Based on the output of SPSS version 25, it is known that the significance value is 0.000. Because the value of Sig. $0.000 < 0.05$ then based on the decision making criteria H_0 is rejected. This means that the regression between self-control and students' mathematical creative thinking ability is significant. Therefore the self-control coefficient can also be used to predict students' mathematical creative thinking abilities.

4) Regression Test

This simple linear regression test is used to determine the relationship of self-esteem and self-control individually to the ability to think creatively mathematically. To find out this, researchers used the help of the SPSS program version 25 with the following results:

Table 6. Regression Test of Self Esteem and Mathematical Creative Thinking Ability Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.173	6.742		.916	.361
	Self Esteem	.846	.094	.578	9.037	.000

Based on the output of SPSS version 25 above, the value $a = 6,173$ and the value $b = 0.846$ is obtained, so that the regression equation is:

$$\hat{Y} = 6,173 + 0,846X_1$$

This equation can be interpreted that between the self-esteem variable (X_1) and the ability to think creatively mathematically (Y) has a positive correlation because $b = 0.846 > 0$. So if the value of X_1 is increased by 1 unit, then the value of Y will increase by 0.846 units and if the value of $X_1 = 0$ then the value of $Y = 6.173$.

Table 7. Regression Test of Self Control and Mathematical Creative Thinking Ability Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.518	6.423		.703	.483
	Self Control	.891	.091	.607	9.747	.000

Based on the output of SPSS version 25 above, the value $a = 4.518$ and the value $b = 0.891$ is obtained, so that the regression equation is obtained as follows:

$$\hat{Y} = 4,518 + 0,891X_2$$

This equation means that the self-control variable (X_2) and the ability to think creatively mathematically (Y) have a positive correlation because $b = 0.891 > 0$. So if the value of X_2 is increased by 1 unit, then the value of Y will increase by 0.891 units and if the value of $X_2 = 0$ then the value of $Y = 4.518$.

b. Multiple Regression Analysis

1) Heteroscedasticity Test

Heteroscedasticity testing was carried out to determine whether there was an inequality of variance from the residuals for all observations in the regression model. The decision-making criterion in the heteroscedasticity test is that if the correlation between the independent variables, namely self-esteem and self-control with residuals, a significance value of > 0.05 is obtained, then there is no heteroscedasticity problem in the regression model (Agus Widarjono, 2018). Heteroscedasticity testing in this study was carried out with the Spearman's rho correlation coefficient test using SPSS version 25, with the following results:

Table 8. Heteroscedasticity Test

Correlations			Self Esteem	Self Control	Unstandardized Residual
Spearman's rho	Self Esteem	Correlation Coefficient	1.000	.746**	.021
		Sig. (2-tailed)		.000	.789
		N	165	165	165
	Self Control	Correlation Coefficient	.746**	1.000	-.004
		Sig. (2-tailed)	.000		.958
		N	165	165	165
	Unstandardized Residual	Correlation Coefficient	.021	-.004	1.000
		Sig. (2-tailed)	.789	.958	
		N	165	165	165

** Correlation is significant at the 0.01 level (2-tailed).

Based on the SPSS output, a significance value was obtained for the self-esteem variable of $0.789 > 0.05$. Meanwhile, the self-control variable obtained a significance value of $0.958 > 0.05$. So based on the decision making criteria, it can be concluded that in the regression model there is no heteroscedasticity problem.

2) Multicollinearity Test

Multicollinearity testing is used to determine whether there is a relationship or correlation between the independent variables. So a good regression model should not have multicollinearity. This can be seen from the VIF (Variance Inflation Factor) and tolerance, with decision criteria if the VIF value is < 10 and the tolerance value is > 0.10 then the regression model is free from multicollinearity (Purnomo, 2016). Multicollinearity testing in this study was carried out using the help of the SPSS version 25 program as follows:

Table 8. Multicollinearity Test

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-2.872	6.763		-.425	.672		
	Self Esteem	.403	.137	.276	2.937	.004	.421	2.376
	Self Control	.583	.138	.397	4.234	.000	.421	2.376

Based on the SPSS output, a VIF value of $2.376 < 10$ was obtained and a tolerance value of $0.421 > 0.10$. So based on the decision-making criteria, it can be concluded that the regression model in this study is free from multicollinearity.

3) Autocorrelation Test

Autocorrelation testing in this research is used to determine whether or not there is a relationship or correlation between research data or sample members sorted by time, so that the appearance of a data is influenced by pre-existing data. Autocorrelation testing in this study will use the Durbin Waston test. The decision making criterion is that if the du value $< d < (4 - dl)$, then there is no autocorrelation between sample members or research data (Wiwik & Cindy, 2017). In this case the number of samples (N) is 165 students and the number of independent variables (k) is 2, then based on the Durbin

Watson table, the value $du = 1.7700$ and the value $dl = 1.7209$ is obtained. Testing was carried out using the help of the SPSS version 25 program, with the following results:

**Table 9. Autocorrelation Test
Model Summary^a**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.633 ^a	.400	.393	8.219	2.078

a. Predictors: (Constant), Self Control, Self Esteem

b. Dependent Variable: Kemampuan Berpikir Kreatif

Based on the output of SPSS version 25, it is known that the Durbin Waston value is 2.078. Based on the decision-making criteria with a value of $du = 1.7700$ and $dl = 1.7209$, then $du < d < (4 - dl)$ is $1.7700 < 2.078 < (4 - 1.7209)$ which means there is no autocorrelation. So it can be concluded that the data obtained in this study does not have autocorrelation problems.

4) Multiple Linear Regression Equations

The multiple linear regression equation in this study was used to see the relationship between self-esteem (X1) and self-control (X2) variables with students' mathematical creative thinking ability (Y). To find out this, researchers used the help of the SPSS program version 25 with the following results:

**Table 10. Multiple Regression Coefficients
Coefficients^a**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.872	6.763		-.425	.672
	Self Esteem	.403	.137	.276	2.937	.004
	Self Control	.583	.138	.397	4.234	.000

Based on the output of SPSS version 25 above, a value = -2.872, $b_1 = 0.403$ and $b_2 = 0.583$. are obtained. So the regression equation is obtained as follows:

$$\hat{Y} = -2,872 + 0,403X_1 + 0,583X_2$$

Based on these equations, the following results are obtained:

- The relationship between the self-esteem variable (X_1) and the mathematical creative thinking ability variable (Y) means that if the constant self-esteem variable (X_1) is positively correlated ($b_1 = 0.403 > 0$), which means that if the X_1 value is increased by 1 unit, then the Y value will increase by 0.403 units.
- The relationship between the self-control variable (X_2) and the mathematical creative thinking ability variable (Y) means that if the constant self-control variable is positively correlated ($b_2 = 0.583 > 0$), which means that if the value of X_2 is increased by 1 unit, then the value of Y will increased by 0.583 units.

- c) The relationship between self-esteem and self-control variables with constant mathematical creative thinking ability variables is positively correlated, because $b_1 = 0.403 > 0$ and $b_2 = 0.583 > 0$. In this equation, the constant value is -2.872. According to (Dougherty, 2002), sometimes constant values have a clear meaning but sometimes they don't. In this case it is impossible for students not to have self-esteem and self-control, so that extrapolating to zero will cause problems. This also means that the variables of self-esteem and self-control have a very positive and significant effect on the ability to think creatively mathematically. In addition, it can be interpreted that apart from self-esteem and self-control, there are also other factors that also influence students' mathematical creative thinking abilities. So that these other factors must also be considered in developing students' mathematical creative thinking abilities.

5) Coefficient of Multiple Determination

The coefficient of multiple determination in this study is used to measure the magnitude of the contribution of self-esteem and self-control variables to the mathematical creative thinking ability variable in relation to the equation of multiple linear regression lines. The calculation of the value of the coefficient of multiple determination was carried out using SPSS version 25 with the following results:

Table 11. Coefficient of Multiple Determination

Model Summary^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.633 ^a	.400	.393	8.219	2.078
a. Predictors: (Constant), Self Control, Self Esteem					
b. Dependent Variable: Kemampuan Berpikir Kreatif					

Based on the output of SPSS version 25, it is found that the coefficient of multiple determination is R Square = 0.400 or 40%. So it can be concluded that the magnitude of the contribution of self-esteem and self-control variables to the ability to think creatively mathematically is 40%.

c. Hypothesis test

1) Statistical Test t

The t statistical test is also called individual hypothesis testing, namely testing the coefficient hypothesis in the multiple regression model with only one X (X_1 or X_2) affecting Y. The decision making criteria in the t statistical test is using t test statistics and t tables. H_0 is accepted, meaning that individual self-esteem and self-control have no effect on the ability to think creatively mathematically in class IX students of SMP Negeri 4 Purwokerto, that is, if the t test statistic is $< t$ table or the significance value is $>$ significant level (α). Then H_0 is rejected, meaning that self-esteem and self-control individually affect the ability to think creatively mathematically in class IX students of

SMP Negeri 4 Purwokerto, that is, if the t test statistic $\geq t$ table or significance value $\leq$ significant level (α) (Anwar, 2009). In this case, for $db = n - k = 165 - 2 = 163$ and $\alpha = 5\%$ so t table = 1.9746. Furthermore, this test was carried out using the help of the SPSS version 25 program, with the following results:

Table 12. Statistical Test t

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	-2.872	6.763		
	Self Esteem	.403	.137	.276	2.937
	Self Control	.583	.138	.397	4.234

a. Dependent Variable: Kemampuan Berpikir Kreatif

The output of SPSS version 25 gives the result that for the self-esteem variable the t test statistic value is $2.937 > 1.9746$ (t table) and the Sig. $0.004 < 0.05$, while the self-control variable obtained a t test statistic value of $4.234 > 1.9746$ (t table) and a Sig. $0 < 0.05$ then H_0 is rejected. So it can be concluded that self-esteem and self-control individually affect the ability to think creatively.

2) Statistical Test F

Statistical test F is also called simultaneous hypothesis testing, namely testing the hypothesis of multiple regression coefficients with X_1 and X_2 simultaneously or simultaneously can affect Y . In this study the F statistical test was carried out to test the effect of self-esteem (X_1) and self control (X_2) on students' mathematical creative thinking ability (Y). The decision-making criterion used, namely H_0 , is accepted, meaning that self-esteem and self-control together have no effect on the ability to think creatively mathematically in class IX students of SMP Negeri 4 Purwokerto, if the F test statistic is $< F$ table or significance value $>$ significant level (α). Then H_0 is rejected, meaning that self-esteem and self-control simultaneously affect the ability to think creatively mathematically in class IX students of SMP Negeri 4 Purwokerto, if the F test statistic $\geq F$ table or significance value $\leq$ significant level (α) (Anwar, 2009). In this case, $df_1 = k - 1 = 3 - 1 = 2$, while $df_2 = n - k = 165 - 3 = 162$ and $\alpha = 5\%$, so that the value of F table = 3.051 is obtained. Furthermore, this test was carried out using the help of the SPSS version 25 program, with the following results:

Table 13. Statistical Test F

ANOVA ^a					
Model		Sum of Squares	df	Mean Square	F
1	Regression	7301.021	2	3650.511	54.037
	Residual	10943.948	162	67.555	
	Total	18244.969	164		

a. Dependent Variable: Kemampuan Berpikir Kreatif

b. Predictors: (Constant), Self Control, Self Esteem

Based on the output of SPSS version 25, it is known that the F value of the test statistic = $54.037 > 3.051$ (F table) and the Sig. $0.000 < 0.05$, then H_0 is rejected based on

the decision-making criteria. So it can be concluded that self-esteem and self-control simultaneously influence the ability to think creatively mathematically in class IX students of SMP Negeri 4 Purwokerto. So the higher the level of self-esteem and self-control, the higher the students' mathematical creative thinking ability, and vice versa.

D. Discussion

Based on the first hypothesis test, using the t statistical test, the value of the t statistic test for the self-esteem variable is $2.937 > 1.974$ (t table). It can be concluded that self-esteem influences the ability to think creatively mathematically in class IX students of SMP Negeri 4 Purwokerto. In addition, the regression equation $\hat{Y} = 6,173 + 0,846X_1$ is obtained. This means that the level of self-esteem on students' mathematical creative thinking abilities has a positive correlation. If the value of X_1 (self-esteem) is increased by 1 unit, then the value of Y (mathematical creative thinking ability) will increase by 0.846 units. So that the higher the level of self-esteem of a student, the higher the ability to think creatively mathematically. This is in line with the results of research conducted by (Alifiani, 2020), namely students with high self-esteem in solving problems can fulfill all indicators of the ability to think creatively mathematically including originality, flexibility, detail and fluency. (Eliza, 2017) Eliza in her research also stated that students who have high self-esteem will continue to try to solve all mathematical problems and even use various methods based on their own ideas. Based on the example of applying Skinner's theory, it was also revealed that if the teacher praises students for their success in solving problems using their own ideas, students will feel confident in their abilities, resulting in a response to learning the next material. Based on this assessment, it can be concluded that self-esteem has a significant influence on the achievement of students' mathematical creative thinking abilities.

Based on the second hypothesis test, using the t statistical test, the t value of the self-control variable test statistic is $4.234 > 1.974$ (t table). It can be concluded that self-control affects the ability to think creatively mathematically in class IX students of SMP Negeri 4 Purwokerto. In addition, the regression equation $\hat{Y} = 4,518 + 0,891X_2$ is obtained. This means that there is a positive correlation between the self-control variable and the ability to think creatively mathematically. If the value of X_2 (self control) is increased by 1 unit, then the value of Y (mathematical creative thinking ability) will increase by 0.891 units. So that the higher the level of self-control of students, the higher the ability of students to think creatively mathematically. This is supported in their research, which revealed that students with high self-control have the ability to regulate themselves to learn effectively so that they can follow and contribute well to every process of learning mathematics. So that for students with low self-control it can result in the emergence of deviant behavior in mathematics learning activities. In this case it can allow students to find it difficult to solve mathematical problems in various ways of solving using their own ideas. In addition, Marzano in (Sumarmo, 2012) also stated that if someone wants to be a creative thinker, then in carrying out all their tasks they must be proactive. To be a proactive person means you have to know how to control yourself or self control.

Based on the third hypothesis test, using the F statistic test, the F value of the test statistic was $54.037 > 3.051$ (F table). It can be concluded that self-esteem and self-control

simultaneously affect the ability to think creatively mathematically in class IX students of SMP Negeri 4 Purwokerto. In addition, the regression equation $\hat{Y} = -2,872 + 0,403X_1 + 0,583X_2$ is obtained. This means that between self-esteem and self-control variables on students' mathematical creative thinking abilities have a positive correlation, and both have a very positive and significant effect. Or it can also be interpreted that apart from self-esteem and self-control there are many other factors that can affect students' mathematical creative thinking abilities. So that the higher the level of self-esteem and self-control, the higher the students' mathematical creative thinking ability, and vice versa. In addition, the value of the coefficient of multiple determination of 40% is obtained. This means that the contribution of self-esteem and self-control to the ability to think creatively mathematically in class IX students of SMP Negeri 4 Purwokerto is 40%. Meanwhile, 60% of students' mathematical creative thinking ability is influenced or determined by other factors. Through a deeper understanding of the relationship between self-esteem, self-control, and students' mathematical creative thinking abilities, this research is expected to provide new insights in the development of more effective approaches to learning mathematics and strengthen understanding of the psychological factors that play a role in creative thinking abilities. student mathematics.

E. Conclusion

Based on the results of the research that has been done, it can be concluded that there is an influence between self-esteem and self-control individually on the mathematical creative thinking abilities of class IX students at SMP Negeri 4 Purwokerto. This is indicated by the results of the t statistical test on the variable self-esteem and the ability to think creatively mathematically, the t test statistic value is $0.293 > 1.974$ (t table) and the regression equation $\hat{Y} = 6,173 + 0,846X_1$. Then in the second t statistic test, the self control variable and mathematical creative thinking ability obtained a t test statistic value of $4.234 > 1.974$ (t table), with the regression equation $\hat{Y} = 4,518 + 0,891X_2$. In addition, self-esteem and self-control together can also influence the ability to think creatively mathematically in class IX students at SMP Negeri 4 Purwokerto. This is indicated by the results of the F statistical test, the F value of the test statistic is $54.037 > 3.051$ (F table), with the regression equation $\hat{Y} = -2,872 + 0,403X_1 + 0,583X_2$.

The magnitude of the influence of self-esteem and self-control simultaneously on the ability to think creatively mathematically in class IX students of SMP Negeri 4 was obtained based on the value of the coefficient of multiple determination, which is equal to 40%. So that 60% of students' mathematical creative thinking ability is influenced by other factors. Several other factors that may influence the ability to think creatively mathematically are the social environment, motivation and interest in learning, as well as experience in solving mathematical problems. Therefore these other factors must also be considered in developing students' mathematical creative thinking abilities.

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