

## **Relationship between Emotional Intelligence and Self-Efficacy with Mathematics Learning Outcomes of MAN Model 1 Manado Students**

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### ***Abstract***

This study investigates the association between emotional intelligence and self-efficacy in relation to student learning outcomes at MAN Model 1 Manado. This type of study is correlational in nature. The population was comprised of 240 students, and the sample size was 36. The instruments utilized were self-efficacy and emotional intelligence questionnaires. The technique employed for data analysis is partial and multiple correlation analysis. (1) There is a positive and significant relationship between emotional intelligence and student mathematics learning outcomes, equaling 0.468; (2) There is a positive and significant relationship between self-efficacy and student mathematics learning outcomes, equaling 0.467; and (3) There is a relationship between emotional intelligence and self-efficacy simultaneously with students' mathematics learning outcomes.

**Keywords:** Emotional Intelligence, Self-Efficacy, Student Learning Outcomes

### **Abstrak**

Penelitian ini menyelidiki hubungan antara kecerdasan emosional dan efikasi diri dalam hubungannya dengan hasil belajar siswa di MAN Model 1 Manado. Jenis penelitian ini bersifat korelasional. Populasi terdiri dari 240 siswa, dan jumlah sampel adalah 36. Instrumen yang digunakan adalah kuesioner self-efficacy dan kecerdasan emosional. Teknik analisis data yang digunakan adalah analisis korelasi parsial dan ganda. (1) Terdapat hubungan yang positif dan signifikan antara kecerdasan emosional dengan hasil belajar matematika siswa sebesar 0,468; (2) Terdapat hubungan yang positif dan signifikan antara efikasi diri dengan hasil belajar matematika siswa sebesar 0,467; dan (3) Terdapat hubungan antara kecerdasan emosional dan efikasi diri secara simultan dengan hasil belajar matematika siswa.

**Kata Kunci:** Kecerdasan Emosional, Efikasi Diri, Hasil Belajar Siswa

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## **INTRODUCTION**

Mathematics is a compulsory subject in elementary to middle school and even to advanced levels; we cannot be separated from the name mathematics in our daily lives. Mathematics is a subject that is disliked and considered difficult by students (Afidah, 2014). This is probably due to the abstract nature of mathematics, requiring practice and is full of numbers and formulas (Sulastri, 2017; Andoko, 2018). Students dislike of mathematics can impact learning outcomes (Wagetama, 2017; Aswin et al., 2019).

Learning outcomes are changes in a person's behaviour or behaviour after experiencing the learning process. Firmansya said that learning outcomes are a final assessment of the process and introduction that has been done repeatedly (Hamzah, 2016). Mathematics learning outcomes are not easy to obtain because apart from mathematics is a subject that is considered difficult by students, and

learning outcomes are also influenced by two factors, namely external factors (originating from outside the student) and internal factors (originating from within the student) (Hasratudin, 2013).

One of the factors that can affect student learning outcomes is Intelligence Quotient (IQ) because students with high IQ make it easier for them to achieve high learning outcomes (Lasmita, 2018). Furthermore, Goleman said that the maximum IQ only contributes 20% to the factors to achieve success and 80% to other strengths, one of which is Emotional Quotient (EQ) (Lestari, 2012).

EQ or emotional intelligence is a person's ability to motivate himself, control himself, recognize his own emotions, recognize the emotions of others (empathy) and build social relationships. Emotional intelligence has an essential role in the teaching and learning process (Lestari, 2015). Without emotional intelligence, students cannot control, motivate, and control themselves and focus on learning even though these students can follow ongoing lessons, which results in low learning outcomes (Lolombulan, 2017).

In addition to emotional intelligence, one's belief in one's abilities is also a factor in achieving good learning outcomes. This statement aligns with Scarpello's opinion, which states that many students get low achievement in mathematics because they have little confidence in their ability to do mathematics (M Nur, 2013). This belief in one's abilities is called self-efficacy or self-efficacy (Nana, 2015).

Self-efficacy is important in learning because a student must have confidence in his abilities so that students can follow the lesson well, master the material and answer the questions given. If students have low self-efficacy, it will impact their learning outcomes (Raudhatul, 2018). This aligns with Ormrod's opinion that individuals tend to learn more and achieve more if they have high self-efficacy than those with low self-confidence (Siagian, 2016). Individuals with high self-efficacy make it possible to exert all their energy when trying something that feels new and will be more persistent and never give up when facing various challenges (Sriningsih, 2018).

Based on the results of an interview with one of the mathematics teachers at MAN Model 1 Manado, information was found that the mathematics learning outcomes of Grade VIII students at the SMP were still relatively low. The teacher also said many students were unprepared and lacked focus when studying mathematics. In working on questions, most students tend to give up and only expect answers from their friends. Also, not all students dare to work on the questions before each meeting.

This can be due to the students' low self-efficacy and emotional intelligence. Students with high emotional intelligence and self-efficacy will be able to control themselves to stay focused on learning, have the motivation to learn, have passion and perseverance to learn and have confidence in their cognitive skills to use these skills to the fullest (Sudaryono, 2012). However, students with low emotional intelligence and self-efficacy will tend to give up easily and despair, do not be motivated, enthusiasm and perseverance in learning, are not good at focusing on lessons and do not have confidence in their skills, so they have low learning outcomes (Sujarweni, 2014).

Scientifically, it has also been proven that emotional intelligence and self-efficacy play a role in one's success, one of which is Aswin's research (2019: 181), which states that emotional intelligence and self-efficacy positively influence learning outcomes in mathematics. Based on the description above, this article will discuss the results of a research study entitled *The Relationship of Emotional Intelligence and Self-Efficacy on Mathematics Learning Outcomes of MAN Model 1 Manado students*.

## **METHOD**

This research is a correlational study in which the data were collected from samples selected from a population. The population is the entire subject or observation that is the research target by researchers. At the same time, the sample is part of the population, where the sample must always be smaller than the population. In this study, the population was all students of class XI MIPA MAN Model 1 Manado, totaling 240 students, and the research sample was class XI MIPA 1, totaling 36 students. This research was conducted in the even semester of the 2023/2024 school year at MAN Model 1 Manado. The instruments used in this study are emotional intelligence and self-efficacy questionnaires. Both questionnaires with a Lickert scale. In each statement, there are four alternative answers, namely strongly agree (ss), agree (s), disagree (ts), and strongly disagree (ss).

The emotional intelligence and self-efficacy questionnaires have been tested beforehand and are feasible. The emotional intelligence and self-efficacy questionnaire grids are included in the appendix. The data collection technique in this study was emotional intelligence and self-efficacy data obtained from emotional intelligence and self-efficacy questionnaires given to the research sample and student learning outcomes data obtained from tests given by the teacher. The data analysis technique used in this study is partial and multiple correlation analysis. The calculation uses SPSS ver. 26. to find out whether there is a relationship between emotional intelligence ( $X_1$ ) and self-efficacy ( $X_2$ ) with students' mathematics learning outcomes (Y). Partial correlation aims to see the relationship between one of the variables ( $X_1$  or  $X_2$ ) with the dependent variable (Y) but does not ignore other variables.

## **RESULT AND DISCUSSION**

The data in this study was obtained from emotional intelligence and self-efficacy questionnaires and documents on students' mathematics learning outcomes obtained from even semester test scores for the 2023/2024 academic year.

### ***Emotional Intelligence Variable ( $X_1$ )***

Based on data collection results through an emotional intelligence questionnaire to 36 respondents (students), the lowest score was 70, and the highest score was 93. The measure of data concentration through the average emotional intelligence score data was 80.31, the median was 80,

and the mode was 70. Meanwhile, the size of the data spread through the data variance is 39.47, the standard deviation is 6.28, and the range is 23.

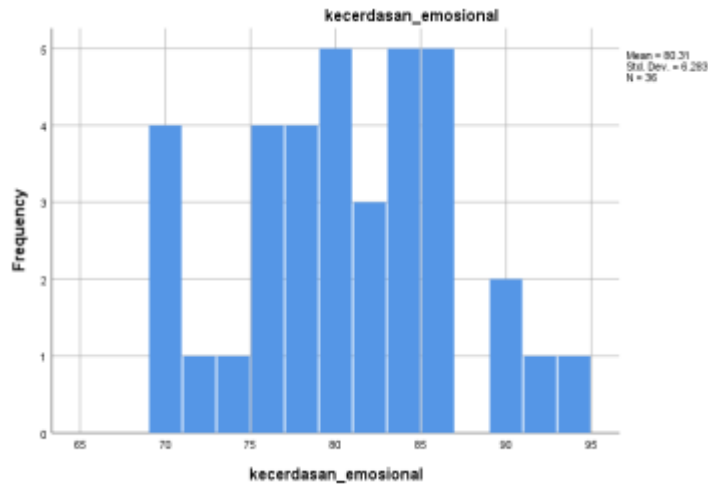


Figure 1. Emotional Intelligence Score Histogram

**Self-Efficacy Variable ( $X_2$ )**

Based on data collection results through self-efficacy questionnaires to 36 respondents (students), the lowest score was 68, and the highest score was 90. The measure of data concentration through the average self-efficacy score data was 75.89, the median was 75, and the mode was 70. Meanwhile, the size of the data spread through the data variance is 34.67, the standard deviation is 5.88, and the range is 22.

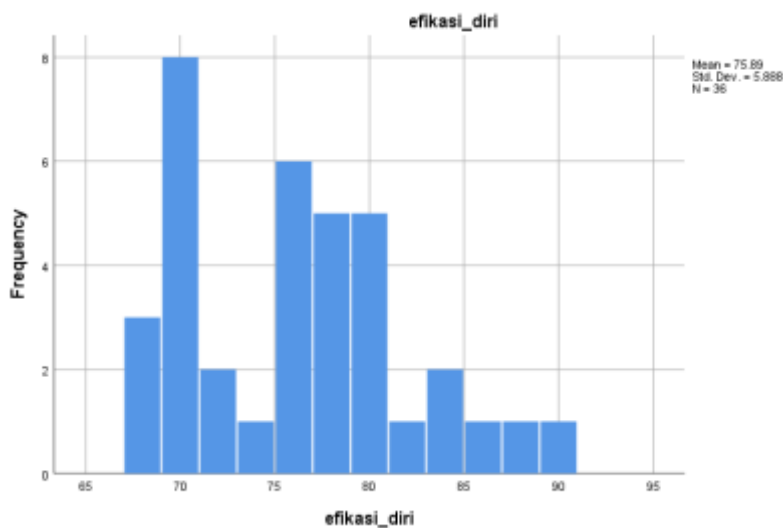


Figure 2. Self-Efficacy Score Histogram

**Student Mathematics Learning Outcome Variable ( $Y$ )**

Based on data collection results through the documentation of mathematics learning outcomes for 36 students, the lowest score was 75, and the highest was 97. The size of the data centre, the average was 83.11, the median was 84, and the mode was 75. Meanwhile, the size of the data distribution, the data variance is 41.36, the standard deviation is 6.43, and the range is 22.

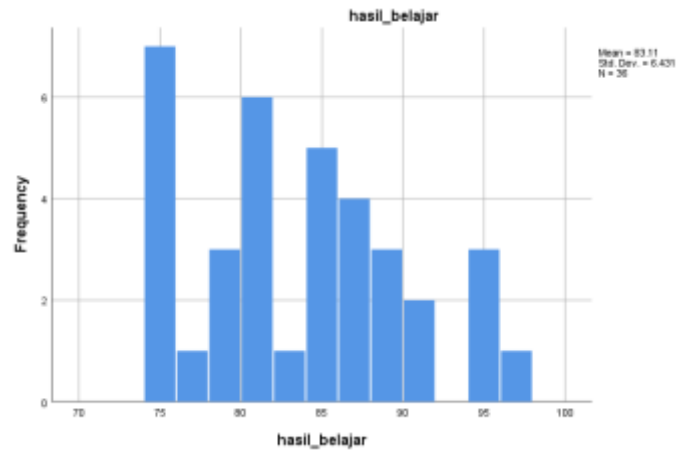


Figure 3. Histogram of mathematics learning outcomes

### **Prerequisite Analysis Test**

The prerequisite Analysis in research is data normality. The test used to test the normality of the data is the Kolmogorov-Sminorv test, which is calculated with the help of SPSS ver 26. The statistical hypothesis used in testing the normality of the data for each variable is

$H_0$  : Sample data come from a normally distributed population

$H_a$  : Sample data comes from a population that is not normally distributed

the decision-making criterion is if the significance value is  $< 0.05$ , then reject  $H_0$ , which means that the sample data comes from a population that is not normally distributed, and conversely, if the significance value is  $> 0.05$ , then  $H_0$  cannot be rejected, which means that the sample data comes from a population that is typically distributed.

### **Hypothesis testing**

The research hypothesis states that

1. There is a positive and significant relationship between emotional intelligence and students' mathematics learning outcomes
2. There is a positive and insignificant relationship between self-efficacy and students' mathematics learning outcomes
3. A positive and significant relationship exists between emotional intelligence and self-efficacy with students' mathematics learning outcomes

tested using partial and multiple correlation analysis. Partial correlation analysis was used to test hypotheses 1 and 2, while hypothesis 3 was tested using multiple correlation analysis.

### **Relationship between ( $X_1$ ) and ( $Y$ )**

To find out the relationship between the variable emotional intelligence ( $X_1$ ) and the variable student mathematics learning outcomes ( $Y$ ) when the self-efficacy variable is still used partial correlation. The statistical hypothesis used is

$H_0$  :  $\rho_{x_1y} = 0$

$H_a$  :  $\rho_{x_1y} \neq 0$

with the decision-making criterion, that is, if the significance value is  $<0.05$ , then reject  $H_0$ , which means a positive and significant relationship exists between emotional intelligence and student mathematics learning outcomes. Vice versa, if the significance value is  $> 0.05$ , then  $H_0$  cannot be rejected, which means that there is no relationship between intelligence emotional with positive and significant student mathematics learning outcomes.

Based on the data processing results, the Correlation and Significance values (2-tailed) were obtained at the significance level  $\alpha = 0,05$ , as shown in Table 1 below.

Table 1. The results of the  $X_1$  Variable Relationship Test with Y

<i>Correlation</i>	<i>Significance (2-tailed)</i>	<b>Decision</b>
0,468	0,005 (0,005 < 0,05)	There is a positive and significant relationship between emotional intelligence and students' mathematics learning outcomes

Based on Table 1, it was decided that there was a positive and significant relationship between emotional intelligence and students' mathematics learning outcomes, amounting to 0.468.

***Relationship between ( $X_2$ ) and (Y)***

To find out the relationship between the self-efficacy variable ( $X_2$ ) and student mathematics learning outcomes variable (Y) when the emotional intelligence variable is still used partial correlation. The statistical hypothesis used is

$$H_0 : \rho_{x_2y} = 0$$

$$H_a : \rho_{x_2y} \neq 0$$

with the decision-making criterion, if the significance value is  $<0.05$ , then reject  $H_0$ , which means a positive and significant relationship exists between self-efficacy and student mathematics learning outcomes. If the significance value is  $> 0.05$ , then  $H_0$  cannot be rejected, meaning there is no relationship between efficacy and positive and significant student mathematics learning outcomes. Based on the data processing results, the Correlation and Significance (2-tailed) values were obtained at the significance level  $\alpha = 0,05$ , as shown in Table 2 below.

Table 2. Results of the  $X_2$  Variable Relationship Test with Y

<i>Correlation</i>	<i>Significance (2-tailed)</i>	<b>Decision</b>
0,467	0,005 (0,005 < 0,05)	There is a positive and significant relationship between self-efficacy and students' mathematics learning outcomes

Based on Table 2, it was decided that there was a positive and significant relationship between self-efficacy and student mathematics learning outcomes, amounting to 0.467.

***Relationship between ( $X_1$ ) and ( $X_2$ ) relationship with (Y)***

To determine the relationship between emotional intelligence ( $X_1$ ) and self-efficacy ( $X_2$ ) with the variable student mathematics learning outcomes (Y), multiple correlations were used. The statistical hypothesis used is

$$H_0 : \rho_{x_1x_2y} = 0$$

$$H_a : \rho_{x_1x_2y} \neq 0$$

with the decision-making, the criteria are if the sig. F change  $< 0.05$ , then reject  $H_0$ , which means a positive and significant relationship exists between emotional intelligence and self-efficacy with students' mathematics learning outcomes, and vice versa if the value is sig. F change  $> 0.05$  than cannot reject  $H_0$ , which means no positive and significant relationship exists between emotional intelligence and self-efficacy with students' mathematics learning outcomes. Based on the results of data processing, the correlation and sig. F change at the significance level  $\alpha = 0,05$ , as shown in Table 3 below.

Table 3. Relationship Test Results for Variables  $X_2$  and Y

<b>Correlation (r)</b>	<b>sig. F change</b>	<b>Decision</b>
0,848	0,000 (0,000 < 0,05)	There is a positive and significant relationship between self-efficacy and students' mathematics learning outcomes

Based on Table 3, it was decided that there was a positive and significant relationship between self-efficacy and student mathematics learning outcomes, amounting to 0.848.

This study aims to determine the relationship between emotional intelligence and self-efficacy partially and together with the mathematics learning outcomes of MAN Model 1 Manado students. Based on Table 1, it is known that the correlation coefficient of emotional intelligence with students' mathematics learning outcomes is 0.468 with a significance value of  $0.005 < 0.05$ , which states that there is a positive and significant relationship between emotional intelligence and students' mathematics learning outcomes. This means that if students' emotional intelligence increases, students' mathematics learning outcomes will also increase. This is because emotional intelligence includes self-control, passion and perseverance, and the ability to motivate oneself in dealing with something, in this case, mathematics. Students who can control their emotions in lessons will positively impact their mathematics learning outcomes.

Based on Table 2, it is known that the correlation coefficient of self-efficacy and student mathematics learning outcomes is 0.467 with a significance value of  $0.005 < 0.05$ , which states that there is a positive and significant relationship between self-efficacy and student mathematics learning outcomes. If a student's self-efficacy increases, his learning outcomes will also increase. This is because self-efficacy is a strong belief in one's abilities. Students with high self-efficacy will be able to push themselves to achieve the desired goals and be able to complete assignments from various fields.

Based on Table 3, the magnitude of the relationship between emotional intelligence and self-efficacy with student mathematics learning outcomes is calculated with a correlation coefficient of 0.848, with a significance value of  $0.000 < 0.05$ . There is a relationship between emotional intelligence and self-efficacy simultaneously with mathematics learning outcomes positive and

significant for students. This correlation value indicates a very strong relationship because the correlation coefficient value is 0.71-0.90.

Emotional intelligence and self-efficacy contribute to students' mathematics learning outcomes of 0.72, or it can be said to be 72%, while other variables determine 28%. This means that when emotional intelligence and self-efficacy increase, students' mathematics learning outcomes will also increase. This shows that students with high emotional intelligence and self-efficacy will have high learning outcomes because students who can control their emotions and have confidence in their abilities can control themselves during the lesson and are enthusiastic and diligent in learning.

## **CONCLUSION**

Based on the research results obtained, it can be concluded that:

1. There is a positive and significant relationship between emotional intelligence and students' mathematics learning outcomes, amounting to 0.468.
2. There is a positive and significant relationship between self-efficacy and student mathematics learning outcomes, amounting to 0.467
3. There is a relationship between emotional intelligence and self-efficacy simultaneously with positive and significant student mathematics learning outcomes, amounting to 0.848.

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