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## Comparison of Environmental Attitudes of Students Attending Adiwiyata Schools and Non-Adiwiyata Schools

Ravika Febriza Martias Putri<sup>1</sup>, Efni Cerya<sup>2</sup>  
Universitas Negeri Padang, Indonesia

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### ABSTRACT

Environmental issues have become an alarming global problem, this is motivated by the low environmental awareness of the community. To overcome this, the government made a policy in the form of implementing the adiwiyata program at various school levels. The implementation of the adiwiyata program aims to create a caring attitude towards the environment from an early age through formal education. This study aims to assess the effectiveness of the implementation of the adiwiyata policy in fostering an attitude of environmental care, as well as analyzing whether there are differences in the environmental care attitudes of students in adiwiyata schools and non-adiwiyata schools. This research is a quantitative research with a comparative approach. The research was conducted using a questionnaire consisting of positive and negative statements about environmental care attitudes, where each statement contains answers with Likert scale values of 1 to 4. The sampling technique in this study refers to the provisions of the sample size according to Abubakar (2021), with a total sample size in each school of 30 students. The data analysis technique used Paired Sample T-Test with the SPSS version 15. The research was conducted at SMPN 1 Luhak Nan Duo as an Adiwiyata School and SMPN 3 Luhak Nan Duo as a Non-Adiwiyata School. The results showed that the environmental care attitude of students in Adiwiyata School was classified as good with an average score of 82.81. The attitude of environmental care of students at SMPN 3 Luhak Nan Duo is also classified as good with an average score of 78.45. Although both schools get the title of a good caring attitude, the results of the comparison test show that there is a significant difference in the attitude of environmental care between students who attend Adiwiyata Schools and Non Adiwiyata Schools.



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### Corresponding Author:

Cerya, E.,  
Universitas Negeri Padang, Indonesia  
Email: [efnicerya@fe.unp.ac.id](mailto:efnicerya@fe.unp.ac.id)

## Introduction

Currently, environmental issues have become a concern of the world community and have become a global problem. To overcome environmental problems, the United Nations has gathered countries in the world to implement the SDGS (Sustainable Development Goals) program. The Indonesian government participates in supporting and implementing the SDGS program because it is in line with the mandate of Law No. 32 of 2009 concerning Environmental Protection and Management article 1 paragraph (2) which explains that the

government has the main task in overcoming environmental problems and fostering an attitude of concern for the environment in society. One way to realize this goal is through education, because education can change mindsets and behavior. Through education, people will understand the importance of protecting the environment. This is relevant to the BPS survey results regarding the level of education that affects the level of achievement of SDGS, as shown in Table 1.

**Table 1. Percentage of Education Completion Level and SDGS Achievement in Indonesia**

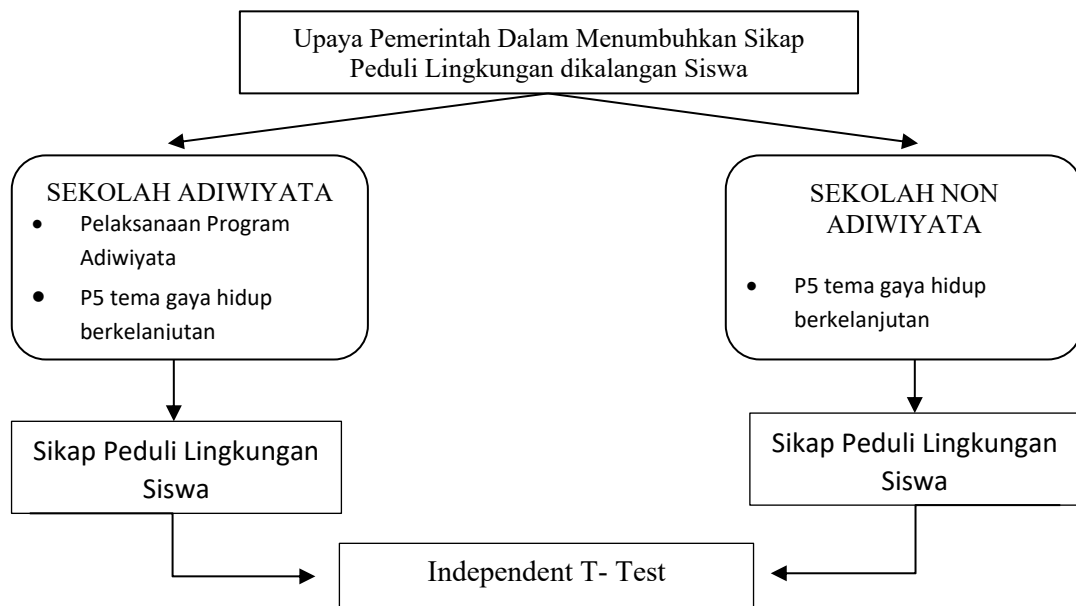
| Year | Education Completion Rate |       |       | Indonesia SDGS Achievement Score |
|------|---------------------------|-------|-------|----------------------------------|
|      | SD                        | SMP   | SMA   |                                  |
| 2020 | 96                        | 87,89 | 63,95 | 68,44                            |
| 2021 | 97,37                     | 88,88 | 65,94 | 68,95                            |
| 2022 | 97,82                     | 90,13 | 66,13 | 69,24                            |
| 2023 | 97,83                     | 90,44 | 66,79 | 69,92                            |
| 2024 | 97,84                     | 91,15 | 67,07 | 69,51                            |

*Source: official BPS website, accessed at <https://www.bps.go.id>*

Based on the table above, it is known that the higher the level of community education, the higher the achievement score of the SDGS program. This means that education can be used as a means to foster a caring attitude towards the environment, especially among students. In order to foster students' environmental awareness, the government developed a program called Adiwiyata. Adiwiyata is a program of the Ministry of Environment that aims to encourage the creation of schools that care and cultivate the environment in Indonesia. Schools that have earned the Adiwiyata charter are schools that are committed to maintaining the cleanliness, health, and beauty of the environment, as well as involving all school members in environmental conservation efforts. This program focuses on developing the character of students who care about the environment both inside and outside the school. As the results of research by Musdalifa et al. (2024) on the Analysis of Students' Environmental Care Attitudes Through the Adiwiyata Program at UPT SD Inpres Bisara, where the results showed that the Adiwiyata program succeeded in creating students' environmental care attitudes in the good category.

Based on data accessed on the official website of SIMP2SDM, by 2024 there will be 720 schools receiving Adiwiyata awards. Currently, the number of Adiwiyata schools in Indonesia has only reached 10% of the total schools. This means that there are still many schools in Indonesia that have not succeeded in creating school citizens who are environmentally cultured, so the government's task in fostering a caring attitude towards the environment is far from successful. In order to achieve an equitable understanding and attitude of environmental care for students throughout Indonesia, the government through the ministry of education and culture includes lessons to strengthen the appreciation and practice of Pancasila (P5) in the independent curriculum. Through P5, especially the theme of sustainable lifestyles, students are trained to develop character and skills based on Pancasila values, including concern for the environment. This expectation is in line with the results of research by Nurfadilah et al. (2022) which states that the implementation of P5 subjects with the theme of sustainable living has an impact on increasing students' environmental care attitudes.

The novelty of this research is that the research was conducted by assessing the environmental care attitudes of students who have both received P5 subjects with the theme of sustainable lifestyles. However, in addition to getting the theory in P5 subjects, students in adiwiyata schools also participate in the adiwiyata program, so that the measure of the success of the adiwiyata program in shaping students' environmental care attitudes is more real because the comparison has equally received environmental theory. To make it easier for readers to understand the research concept, the author summarizes the research concept in Figure 1 below:



Gambar 1. Kerangka Konseptual

The implementation of the adiwiyata program and the implementation of P5 subjects create the expectation that all students in Indonesia have the same environmental care attitude, both students who attend Adiwiyata Schools and Non Adiwiyata Schools. However, based on the researchers' initial observations in two schools, there was a mismatch between expectations and reality, where the researchers found that the environmental care attitudes of students in Adiwiyata Schools (SMPN 1 Luhak Nan Duo) were better than the environmental care attitudes of students in Non Adiwiyata Schools (SMPN 3 Luhak Nan Duo) when viewed from cleanliness, shade, environmentally based participatory activities, and student behavior patterns in preserving the environment. To test whether expectations are in line with reality, further research is needed.

The results of this study can be used as a benchmark for the success of government programs in fostering an attitude of environmental concern, especially in areas where the level of environmental concern is relatively low and needs to be improved. The purpose of this study was to determine and analyze: (1) Students' environmental awareness attitude in Adiwiyata School (2) Students' environmental awareness attitude in Non Adiwiyata School (3) Comparison of environmental awareness attitude of students who attend Adiwiyata School and Non Adiwiyata School.

## Method

The research type is quantitative with a comparative approach. The aim of study was to obtain information on students' environmental awareness at Adiwiyata and Non-Adiwiyata Schools in West Pasaman and to analyze whether there are differences in the level of environmental awareness of students at the two schools. The population of this study was students who had taken the P5 subject with a sustainable lifestyle theme. At the Adiwiyata school, the study was conducted at SMP N 1 Luhak Nan Duo, with a population of 7th-grade students, while at the non-Adiwiyata school, the study was conducted at SMPN 3 Luhak Nan Duo, with a population of 8th-grade students. The researcher chose populations from different grade levels because both grade levels had taken the P5 subject with a sustainable lifestyle theme. Therefore, it was assumed that both grade levels had a similar understanding of environmental conservation. The sampling technique used random sampling, adhering to the sample size requirements according to Abubakar (2021), as shown in Table 1.

Table 1. Research Sample

| School               | Population | Sample Terms     | Number of Samples |
|----------------------|------------|------------------|-------------------|
| SMAN 1 Luhak Nan Duo | 300        | 10% x Population | 30                |
| SMAN 3 Luhak Nan Duo | 120        | 25% x Population | 30                |

Source: Administration SMP N 1 Luhak Nan Duo and SMP N 3 Luhak Nan Duo (processed data)

Based on the sample size requirements listed in Table 2, the sample size used in this study was 30 students from each school. This study relied on secondary data obtained through school administration and primary data

from a questionnaire regarding students' environmental attitudes. The environmental attitude questionnaire was developed based on the environmental attitude indicators according to Irfianti et al. (2016), which are summarized in Table 2 below:

**Table 2. Environmental Attitude Indicators**

| Attitude                        | Indicator                 | Meaning                                                                                                                                               |
|---------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Attitude in Prevention          | Environmental Care        | Students' views on keeping the environment still clean                                                                                                |
|                                 | Reducing Plastic Use      | Students' views on how to reduce plastic waste                                                                                                        |
|                                 | Reducing Plastic Use      | Students' views on the importance to sorting waste and Throw garbage in the right place                                                               |
|                                 | Carbon Emission Reduction | Students' views on efforts to reduce activities that can increase greenhouse gases                                                                    |
|                                 | Energy Saving             | Students' views on efforts to maintain the availability of clean water and the efficient use of electricity to prevent increasing global temperatures |
| Attitude in Repairing of Damage | Tree Planting             | Students' views on the importance of planting trees to reduce carbon emissions                                                                        |
|                                 | Recycling Used Goods      | Students' views on the importance of processing used goods and plastic waste into useful items                                                        |

Source: Irfianti et.al (2016)

Before conducting the attitude assessment, the research instrument must be tested to assess the validity and reliability measured using the Cronbach's Alpha value parameter. If all questions are declared valid and reliable, then the research can be carried out. The data obtained from the research results must meet the prerequisite tests of normality and homogeneity, then categorized and analyzed using the attitude assessment formula according to Campbell (1999).

$$A = \frac{\sum x}{N} \times 100$$

Information:

A = environmentally caring attitude

$\sum x$  = Total score of respondents' answers

N = Maximum Score

With the criteria for environmental care attitudes as in the following table 4.

**Table 3. Provisions for Criteria of Environmentally Concerned Attitudes**

| No | Category Attitudes towards the Environment | Range Score  |
|----|--------------------------------------------|--------------|
| 1. | Apathetic/Indifferent                      | < 31,25      |
| 2. | Low                                        | 31,25- 62,5  |
| 3. | Good                                       | 63,5 – 93,75 |
| 4. | Very Good                                  | > 94         |

Source: Campbell, 1999

The use of Campbell's formula will identify students' environmental care attitudes in two types of schools, but to test a significant difference between the two schools, the researcher's hypothesis was tested using the Independent T-Test by SPSS 15. The basis for decision making in the T-test is if the sig. value >  $\alpha$  (0.05), then H0 is accepted. Conversely, if the sig. value <  $\alpha$  (0.05) then H0 is rejected. The research hypothesis is as follows.

H0 = There is no significant difference between the environmental awareness attitudes of students attending Adiwiyata Schools and Non-Adiwiyata Schools.

H1 = There is a significant difference between the environmental awareness attitudes of students attending Adiwiyata Schools and Non-Adiwiyata Schools.

## Results and Discussions

This research has one independent variable, its students' environmental awareness. The study was conducted at two different locations: SMP N 1 Luhak Nan Duo and SMP N 3 Luhak Nan Duo. The results are presented as follows:

### Descriptive Data Results

The following are descriptive data results, explaining the sample size, mean, standard deviation, and standard error.

**Table 4. Results of Data Description**

|                                       | School                           | N  | Mean   | Std. Deviation | Std. Error Mean |
|---------------------------------------|----------------------------------|----|--------|----------------|-----------------|
| Students' Environmental Care Attitude | Adiwiyata School (SMPN 1 LND)    | 30 | 115,93 | 7,825          | 1,429           |
|                                       | Non Adiwiyata School (SMPN 3LND) | 30 | 109,83 | 9,366          | 1,710           |

Source: Primary Data Processed, 2025

Based on the data above, it is known that the research was conducted in two schools with each sample of 30 students, so that the total sample in this study was 60 students. The sample was obtained randomly from the population, where the sample provisions were students who had received P5 subjects, the theme of sustainable lifestyles. The average score obtained by SMP N 1 Luhak Nan Duo was higher with a value of 115.93 compared to the average value of SMP N 3 Luhak Nan Duo of 109.83. This means that students in Adiwiyata schools (SMP N 1 Luhak Nan Duo) are more concerned about environmental sustainability.

### Results of the Analysis of Environmental Attitudes Using Campbell's Formula

In analyzing students' environmental attitudes, the researchers adopted Campbell's formula (1999), as follows:

$$A = \frac{\sum S}{N} \times 100$$

Information:

A = environmentally caring attitude

$\sum S$  = Total score of respondents' answers

N = Maximum Score

With the criteria for environmental care attitudes as in the following table 4 before. After the student scores are converted into value units, they are then interpreted with the results as shown in Table 6 below.

**Table 5. Comparison of General Environmental Attitude Criteria**

| Criteria     | SMP N 1 Luhak Nan Duo |            | SMP N 3 Luhak Nan Duo |            |
|--------------|-----------------------|------------|-----------------------|------------|
|              | Jumlah Siswa          | Persentase | Jumlah Siswa          | Persentase |
| Apathy       | -                     | -          | -                     | -          |
| Low          | -                     | -          | -                     | -          |
| Good         | 29                    | 97%        | 30                    | 100%       |
| Very Good    | 1                     | 3%         | -                     | -          |
| <b>Total</b> | 30                    | 100%       | 30                    | 100%       |

Source: Primary Data Processed, 2025

Based on the calculation of student scores using Campbell's formula, the categorization of environmental care attitudes is obtained as shown in table 5. It can be concluded that, of the 30 students of SMP N 1 Luhak Nan Duo (Adiwiyata School) who became the research sample, there was 1 person whose environmental care attitude was very good, while 29 other people had a good environmental care attitude. All students of SMP N 3 Luhak Nan Duo (Non Adiwiyata School) who became the research sample had a good environmental care attitude. In addition, using the same formula, the average value of students' environmental care attitude in each school was obtained. The average environmental care attitude of students at SMP N 1 Luhak Nan Duo is higher, worth 82.81. The average value of students' environmental care attitude at SMP N 3 Luhak Nan Duo is smaller, which is 78.54 as listed in Table 6 below:

**Table 6. Differences in Average Values of Students' Environmental Awareness Attitudes**

| No | School                     | Average |
|----|----------------------------|---------|
| 1. | SMP Negeri 1 Luhak Nan Duo | 82,81   |
| 2. | SMP Negeri 3 Luhak Nan Duo | 78,45   |

Source: Primary Data Processed, 2025

Although the average value of students' environmental care attitude in both schools is in the good category, there is a fairly large difference between adiwiyata schools and non-adiwiyata schools. This means that students in Adiwiyata schools are more concerned about the environment, and have a better understanding of the obligation to protect the environment.

### Hypothesis Testing

To test whether there is a difference between the environmental awareness of students attending Adiwiyata and non-Adiwiyata Schools, the researchers used the Independent T-test as a research tool. To conduct the T-test, a prerequisite test is needed. Prerequisite tests that will be used in this study are normality test and homogeneity test. Normality test is a statistical procedure used to evaluate whether a data set follows a normal distribution. data can be said to be normally distributed if the Saphiro-Wilk and Kolmogorov-Smirnov values are greater than 0.05 ( $p\text{-value} > 0.05$ ). The results of the normality test of the research data can be seen in Table 7 below:

**Table 7. Hasil Uji Normalitas**

| School                                |                                   | Kolmogorov-Smirnov(a) |    |         | Shapiro-Wilk |    |      |
|---------------------------------------|-----------------------------------|-----------------------|----|---------|--------------|----|------|
|                                       |                                   | Statistic             | Df | Sig.    | Statistic    | Df | Sig. |
| Students' Environmental Care Attitude | Adiwiyata School (SMPN 1 LND)     | ,078                  | 30 | ,200(*) | ,989         | 30 | ,988 |
|                                       | Non Adiwiyata School (SMPN 3 LND) | ,150                  | 30 | ,085    | ,938         | 30 | ,081 |

\* This is a lower bound of the true significance.

a Lilliefors Significance Correction

Based on the calculation results above, it is known that the Sig. values for both schools are both greater than 0.05 using the Kolmogorov-Smirnov and Shapiro-Wilk parameters. It can be concluded that all data are normally distributed and suitable for further parametric statistical tests. After the data is declared normally distributed, the next step in the statistical prerequisite test is to conduct a homogeneity test. The homogeneity test aims to ensure that the variances of the data groups being compared are the same. If the data is not homogeneous, then the results of parametric statistical tests such as the t-test may not be valid. in this study the homogeneity test was carried out using Levene's Test by considering the Cronbach's Alpha value. Homogeneity test results can be seen in Table 8 below:

**Table 8. Hasil Uji Homogenitas**

| Levene Statistic | df1 | df2 | Sig. |
|------------------|-----|-----|------|
| 1,962            | 1   | 58  | ,167 |

Source: Primary Data Processed, 2025

Based on the table above, it is known that the Sig. value of 0.167 is  $> \alpha$  (0.05), so it can be concluded that the data is homogeneous. Normality and homogeneity are requirements for conducting the Independent T-test parametric test. The values of both prerequisites have met the qualifications so that the research can continue to further tests. To measure whether there is a significant difference between the environmental care attitudes of students in adiwiyata schools and non-adiwiyata schools, the authors used the independent t-test as a research tool. The independent t-test, also known as the two-sample t-test or independent sample t-test, is a statistical method for comparing the means of two unrelated (independent) groups. This test aims to determine whether there is a statistically significant difference between the means of the two groups. The basis for decision making in the T-test is if the sig. value  $> \alpha$  (0.05), then  $H_0$  is accepted. Conversely, if the sig. value  $< \alpha$  (0.05) then  $H_0$  is rejected. The research hypothesis is as follows.

H0 = There is no significant difference between the environmental awareness attitudes of students attending Adiwiyata Schools and Non-Adiwiyata Schools.

H1 = There is a significant difference between the environmental awareness attitudes of students attending Adiwiyata Schools and Non-Adiwiyata Schools.

**Table 9. Hasil Uji Independent T-test**

|                                       |                             | F     |       | Sig.  |       | T     |       | Df    |       | Sig. (2-tailed) |       | Mean Difference |       | Std. Error Difference |       | 95% Confidence Interval of the Difference |       |
|---------------------------------------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|-------|-----------------|-------|-----------------------|-------|-------------------------------------------|-------|
|                                       |                             | Lower | Upper | Lower | Upper | Lower | Upper | Lower | Upper | Lower           | Upper | Lower           | Upper | Lower                 | Upper | Lower                                     | Upper |
| Students' Environmental Care Attitude | Equal variances assumed     | 1,962 | ,167  | 2,737 | 58    | ,008  | 6,10  | 2,228 | 1,639 | 10,561          |       |                 |       |                       |       |                                           |       |
|                                       | Equal variances not assumed |       |       | 2,737 | 56,22 | ,008  | 6,100 | 2,228 | 1,636 | 10,564          |       |                 |       |                       |       |                                           |       |

Based on the results of the Independent T-test, the Sig. value is 0.008, which is less than  $\alpha$  (0.05). Therefore, it can be concluded that H0 is rejected and H1 is accepted, indicating a significant difference between the environmental attitudes of students attending Adiwiyata Schools and non-Adiwiyata Schools. The results of this study conclude that the theory or expectation that students attending Adiwiyata Schools and non-Adiwiyata Schools will have equal environmental attitudes has not been realized. The government is expected to find solutions to achieve its goal of fostering equitable environmental awareness among all students. This is because environmental issues have become a priority and must be addressed immediately. The results of this study are also relevant to previous research conducted by Athallah et al. (2024), which examined students' perspectives on the environment at Adiwiyata Schools and non-Adiwiyata Schools. Their results showed a significant difference in environmental perceptions between the two schools, with students at Adiwiyata Schools having a greater understanding of environmental preservation than students at non-Adiwiyata Schools. The update in this study is that the research was conducted on a population of students who had received P5 material with the theme of sustainable lifestyle, so that the research population had both received environmental education at both Adiwiyata and Non-Adiwiyata Schools.

Based on the researcher's observations during the observation process and the results of interviews from several related parties, the researcher concluded that the adiwiyata program can create a better attitude of environmental care for students than students in non-adiwiyata schools, because the adiwiyata program forms positive habits of students in preserving nature, preventing damage and handling waste that can pollute the environment. Some activities that support environmental conservation activities are the procurement of greenhouses, nursery houses, and gardening which are carried out regularly. In preventing damage to the environment, adiwiyata schools are equipped with more adequate facilities such as garbage cans on each side of the school, a place for processing plastic waste and a place for processing organic waste into compost. schools also routinely invite students to learn to recycle waste so that it is not wasted and becomes a buildup of waste. The advantage of implementing the adiwiyata program is that activities are carried out routinely at each grade level of students, so that all students are accustomed to living regularly and a culture of environmental care begins to form both inside and outside the school. in contrast to non-adiwiyata schools that carry out environmental education programs only at certain grade levels of students for several specified semesters and are not carried out continuously.

## Conclusions

Based on the results of the study, it can be concluded that students' environmental awareness in SMP N 1 Luhak Nan Duo and SMP N 3 Luhak Nan Duo is categorized as good, but the average value of their environmental awareness is significantly different. The implementation of P5 subjects and the Adiwiyata program have the same goal, which is to foster the same environmental awareness among students, regardless of school status. but the results show that Adiwiyata schools are superior in creating environmentally cultured

students. this is motivated by the vision and mission, as well as participatory activities that are routinely carried out by Adiwiyata schools in accordance with government objectives. The implications of this research can be an input for the development of more effective environmental education policies in Indonesia. This can be a benchmark for assessing the effectiveness of government policies in fostering environmental awareness, so that the government can implement the right policies in achieving sustainable development goals through the formation of students' environmental care attitudes.

For schools, this research can serve as a guideline for implementing environment-based activities. Although non-Adiwiyata schools do not implement the Adiwiyata program, they can emulate the program in developing activities and fostering student interest. Examples of such activities include the provision of greenhouses, recycling used goods, and other activities that can increase environmental awareness and attitudes. Environmental care attitude is not formed based on rules alone, but can be formed due to habits that are carried out continuously.

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