

The Effect of the Adiwiyata Program on Students' Environmental Awareness

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ABSTRACT

The Adiwiyata program at Junior High School 1 Adiluwih has been running with adequate support and has succeeded in forming an evenly distributed environmental awareness among students. This study aims to examine and analyze the effect of the implementation of the Adiwiyata program on students' environmental awareness at Junior High School 1 Adiluwih, Pringsewu Regency. This study used a quantitative approach with a correlational design on a sample of 194 students in grades VIII and IX. Data were collected through questionnaires and analyzed using simple linear regression techniques. The results showed that the implementation of the Adiwiyata program and the level of students' environmental awareness were in the "fairly good" category with a homogeneous data distribution. Statistical analysis confirmed a positive and significant effect of the Adiwiyata program on students' environmental awareness ($p < 0.001$) with a regression equation of $Y = 9.756 + 0.694X$. The coefficient of determination of 0.600 indicates that the Adiwiyata program provides a dominant contribution of 60% in forming students' environmental awareness. These findings provide empirical evidence that the quality of the Adiwiyata program implementation is a key factor in increasing ecological awareness and strengthening sustainable school culture practices.

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1. INTRODUCTION

The growing emphasis on sustainable living has positioned education as a critical driver in fostering environmentally conscious generations capable of addressing global challenges (Agbedahin, 2019; Yadav, 2023). Despite this mission, many educational institutions still face persistent environmental issues, characterized by a lack of student responsibility and a prevalence of habits such as littering (Ramadany et al., 2025). To address these gaps, schools leverage their strategic role through the Adiwiyata Program, a policy initiated by the Ministry of Environment in 2006 and further regulated in 2009 to provide structured guidelines for environmental management (Afla & Sugiarto, 2024;

Sianturi et al., 2024). This "Green School" initiative functions as a form of character education, integrating sustainable policies and curricula with the management of eco-friendly infrastructure in alignment with the Education for Sustainable Development (ESD) framework (Nada et al., 2021; Permata et al., 2025; Rozi et al., 2026).

The success of the Adiwiyata Program rests upon the dual principles of participation and sustainability, requiring the collective involvement of students, educators, and the broader community to ensure long-term impact (Anggela & Rina, 2024; Fedrya & Frinaldi, 2025). Active awareness within the school community is paramount, as the program's efficacy is deeply tied to the internal values and actions of its participants (Jalal et al., 2025). According to He et al. (2022), this environmental awareness is multi-dimensional, encompassing affective values, cognitive knowledge, and dispositional attitudes. By synthesizing these dimensions, the Adiwiyata Program seeks to internalize personal responsibility, ensuring that environmental stewardship becomes a consistent and participatory practice rather than a temporary academic exercise (Anggela & Rina, 2024; Santosa, 2024).

The relationship between the implementation of school programs and the formation of student awareness can be analyzed through Albert Bandura's Social Cognitive Theory (Mujahidah & Yusdiana, 2023; Widodo & Astuti, 2024). This framework posits that individual behaviour and awareness are formed through reciprocal interactions between the environment, cognitive factors, and actions, a concept known as 'reciprocal determinism' (Rumjaun & Narod, 2025). In this context, the school environment acts as a stimulus that influences students' cognitive and affective processes through observational learning and social reinforcement. Consequently, the Adiwiyata Program serves as a structured environmental intervention designed to shape students' awareness and responsibility for sustainability by internalizing core environmental values (Ambawono et al., 2025).

Despite the importance of these programs, existing literature on the direct impact of the Adiwiyata Program on junior high school students remains limited. While research by Aikowe and Mazancova (2022) confirms that sustainability literacy enhances environmental awareness and attitudes, their study focused on the university level and did not address the specific implementation of the Adiwiyata Program. Similarly, Mahendra and Khusna (2025) examined the program's relationship with student awareness but utilized multiple dependent variables, which diluted the depth of the awareness analysis. Furthermore, Ghozali et al. (2024) explored high school leadership and culture as mediating variables rather than focusing on direct program implementation. These gaps highlight a need for research that specifically measures the direct effects of structured Adiwiyata indicators on junior high school students.

Junior High School 1 Adiluwih in Pringsewu Regency, Lampung, provides a significant case study, having earned the 2024 National Adiwiyata award and currently pursuing Adiwiyata Mandiri status. The school's vision focuses on creating an environmentally conscious institution that excels in achievement and character, serving as the foundation for its green culture. This commitment is realized through integrated activities such as the plastic-free movement, waste banks, "Clean Friday" initiatives,

composting, and a zoning-based duty system centered on the 3R principles (reduce, reuse, recycle). These sustainable practices are intended to move beyond simple infrastructure toward a deeply rooted environmental habitus within the student body.

Insights from the school's leadership suggest that although the Adiwiyata Program seeks to cultivate environmental consciousness, student engagement is inconsistently distributed. Discussions with the principal and vice principal regarding the curriculum indicate that certain children continue to exhibit erratic hygiene practices, requiring ongoing teacher supervision. This study seeks to objectively assess the impact of the Adiwiyata Program on students' environmental consciousness at Junior High School 1 Adiluwih. The study posits a positive and significant correlation between the program and student awareness, aiming to furnish empirical data to bolster the implementation of sustainable school initiatives.

2. METHOD

This research employs a quantitative correlational methodology to investigate the impact of the Adiwiyata Program on students' environmental consciousness at Junior High School 1 Adiluwih in the Pringsewu Regency of Lampung. This methodology seeks to ascertain the strength and direction of the association between structured environmental interventions and students' awareness of sustainability.

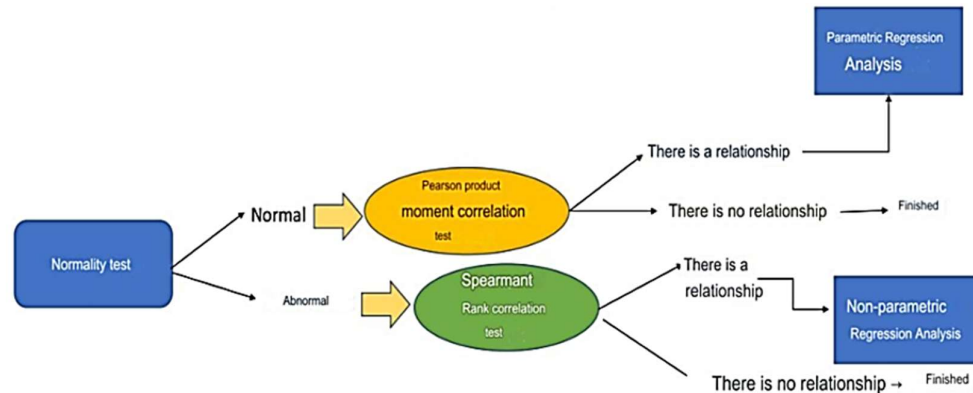


Figure 1. Quantitative Correlational Design

The research population comprises 376 students from 12 separate classes within grades VIII and IX. To ensure statistical validity, the sample size was determined using the Slovin formula with a 5% margin of error, resulting in a target group of 194 students. Furthermore, a cluster sampling technique was implemented to maintain balanced representation from each participating class, the specific distribution of which is formally documented in Table 1.

Table 1. Distribution of Sample Research

Grade	Number of Students
VIII	98
IX	96
Total	194

The study encompasses two principal variables: the Adiwiyata Program as the independent variable (X) and Environmental Awareness as the dependent variable (Y). The Adiwiyata Program is implemented through four principal indicators: eco-centric policies, an environment-focused curriculum, participatory initiatives, and the administration of sustainable facilities. Environmental awareness is evaluated through three independent dimensions: affective (values and concern), cognitive (environmental knowledge), and dispositional (attitudes and personal responsibilities).

Data collection was performed using a closed questionnaire employing a 4-point Likert scale to guarantee accurate participant replies. Before the main investigation, the instrument was subjected to thorough testing on a pilot group of 31 students outside the primary sample to verify its technical quality. The instrument's validity was established via the Pearson Product Moment correlation, and its internal consistency and reliability were assessed using Cronbach's Alpha, with a criterion of $\alpha > 0.70$.

Data analysis was performed utilizing IBM SPSS 27, incorporating an extensive array of statistical methods to guarantee the reliability of the results. The procedure commenced with descriptive statistics to encapsulate the data, succeeded by essential normality and linearity assessments to verify that the dataset adhered to the requisite assumptions for parametric analysis. These foundational stages guaranteed that the ensuing inferential models accurately and reliably depicted the relationship between the variables.

The analysis employed simple linear regression at a significance threshold of 0.05 to assess the effect of the independent variable. A t-test was utilized to assess the statistical significance of the effect, and the coefficient of determination (R^2) was computed to evaluate the Adiwiyata Program's impact on students' environmental awareness. These methodologies jointly established a definitive empirical foundation for evaluating the program's efficacy inside the educational setting.

3. RESULTS AND DISCUSSION

Results

Descriptive Analysis Test

A descriptive analysis was conducted to offer a thorough summary of the research data, specifically determining the minimum and maximum values, mean, and standard deviation for both the Adiwiyata Program and Environmental Awareness variables. The comprehensive results of this statistical summary, which delineate the distribution and central tendency of the gathered data, are explicitly exhibited in Table 2.

Table 2. Descriptive Analysis Test Results

Variable	Minimum	Maximum	Mean	Std. Deviation
Adiwiyata Program	56	80	67.16	5.814
Environmental Awareness	45	67	56.6	5.208

The descriptive analysis indicates that the Adiwiyata Program variable (X) achieved a minimum score of 56 and a maximum score of 80, with a mean score of 67.16 and a standard deviation of 5.814. The Environmental Awareness variable (Y) exhibited a

score range of 45 to 67, with a mean of 56.60 and a standard deviation of 5.208. These data establish a definitive quantitative baseline for assessing the present condition of the school's environmental initiatives and the corresponding awareness among pupils.

Building upon these findings, the average values for both variables are classified within the "fairly good" category, suggesting a solid foundational level of program implementation and student awareness. Furthermore, the relatively low standard deviation across both datasets indicates a homogeneous distribution of data. This consistency implies that the environmental values and program activities have been disseminated with relative uniformity among the student population at Junior High School 1 Adiluwih.

Prerequisite Tests

Prior to conducting the simple linear regression analysis, prerequisite tests—specifically normality and linearity tests—are administered to ensure the dataset adheres to the fundamental assumptions of regression modeling. The normality of the data is rigorously assessed using the One-Sample Kolmogorov-Smirnov method, which determines whether the residual distribution follows a normal pattern, thereby establishing the statistical validity necessary for further inferential analysis.

Table 3. Normal Test Results

Variable	N	Asymp. Sig. (2-tailed)	Description
Residual	194	0,200	Normal

The statistical assessment of the research data verifies that the necessary assumptions for regression analysis have been completely met. The Asymp. Sig. (2-tailed) value derived from the normality test, as indicated in Table 3, is 0.200. As this value surpasses the predetermined significance threshold of 0.05 ($0.200 > 0.05$), it is conclusively determined that the residual data adheres to a normal distribution, thereby satisfying the criterion for normality.

In addition to the normality findings, the linearity test yielded a significant deviation from the linearity value of 0.234, which similarly surpasses the 0.05 benchmark ($0.234 > 0.05$). This result indicates that there is no significant deviation from a linear pattern, confirming a valid linear relationship between the Adiwiyata Program and Environmental Awareness variables. With both the normality and linearity assumptions rigorously met, the dataset is deemed appropriate for the subsequent hypothesis testing phase utilizing simple linear regression analysis.

Simple Regression Test

Hypothesis testing was performed with simple linear regression to assess the impact of the Adiwiyata Program on pupils' environmental awareness. Prior to interpreting the regression coefficients, an F-test was performed to evaluate the model's overall validity.

Table 4. F-Test Results

Model	F	df	Sig.
Regression	288,165	1;192	<0,001

The F-test findings indicate an F-value of 288.165 with a significance level of $p < 0.001$, significantly lower than the 0.05 criterion. Thus, the regression model is deemed statistically significant and exceptionally appropriate for predictive analysis. The findings suggest that the Adiwiyata Program, viewed as a holistic framework, significantly impacts students' environmental consciousness in the examined population.

Upon confirming the feasibility and robustness of the model, a subsequent t-test was performed to evaluate the specific impact of the independent variable. This stage of the analysis was designed to isolate and determine the partial effect of the Adiwiyata Program on Environmental Awareness. By assessing the individual significance of the program's implementation, the study establishes a precise empirical link between the school's environmental interventions and the resulting levels of student consciousness.

Table 5. T-Test Results

Variable	B	Std.Error	Beta	t	Sig.
Constant	9,756	2,756	-	3,540	<0,001
Program Adiwiyata (X)	0,694	0,041	0,775	16,975	<0,001

The t-test results indicate that the Adiwiyata Program has a positive and statistically significant effect on environmental consciousness ($B = 0.694$; $t = 16.975$; $p < 0.001$), resulting in the regression equation $Y = 9.756 + 0.694X$. This model demonstrates that each one-unit enhancement in the execution of the Adiwiyata Program results in a 0.694-unit increase in students' environmental awareness. A coefficient of determination test was conducted to evaluate the extent to which the Adiwiyata Program explains the overall variation in student environmental consciousness.

Table 6. Results of the Coefficient of Determination Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,775	0,600	0,598	3.302

The analysis yields an R^2 value of 0.600, indicating that 60% of the variance in environmental awareness is directly attributable to the implementation of the Adiwiyata Program. This suggests that the structured environmental interventions provided by the program serve as a primary driver in shaping student consciousness. The remaining 40% of the variation is influenced by external factors not captured within the current regression model, such as individual home environments or broader social influences.

Ultimately, these findings confirm that the Adiwiyata Program makes a strong and statistically significant contribution to enhancing students' Environmental Awareness. The high degree of explanatory power provided by the model underscores the program's effectiveness as a strategic tool for fostering sustainability. Consequently, the results provide a robust empirical foundation for the continued integration and optimization of "Green School" policies to achieve long-term environmental education goals.

Discussion

This study seeks to assess the impact of the Adiwiyata Program on students' environmental consciousness at Junior High School 1 Adiluwih. The statistical study indicated a substantial positive correlation between the two variables. The descriptive analysis indicates that the Adiwiyata Program (X) was categorized as "sufficient" with an average score of 67.16, while students' environmental awareness (Y) was similarly categorized as "sufficient" with a score of 56.60. The minimal standard deviation values for both variables signify data homogeneity, indicating that the internalization of environmental values and program activities has been uniformly and consistently disseminated throughout the school's student body.

These findings align with environmental education theory, which states that an ecologically structured school environment can function as a hidden curriculum in shaping students' character (Brooks et al., 2022; Suarlin, 2023). This reinforces previous studies that assert that school-based environmental intervention programs, such as Adiwiyata, play a crucial role in transforming cognitive knowledge into affective awareness (Maghfiroh & Kartijono, 2024; Notrilauvia et al., 2022). The consistency of data distribution in this study also supports the argument that the success of character education is highly dependent on the creation of a collective school culture, so that the resulting behavioral changes do not only occur in a small number of individuals, but become social norms that apply throughout the educational environment.

Before hypothesis testing, the study data underwent a set of formal prerequisite assessments to assure the validity and reliability of the statistical analysis outcomes. The normality test indicated a significance value of 0.200 (>0.05), demonstrating that the model residuals were normally distributed and satisfying the fundamental criteria of parametric analysis. The linearity test revealed a significant departure from the linearity value of 0.234 (>0.05), indicating a valid linear link between the intensity of program implementation and student awareness levels.

The feasibility of this regression model was further validated by an F-test, producing an F-value of 288.165 with a significance level of $p < 0.001$, in addition to satisfying the fundamental assumptions. This figure validates the study model's substantial resilience in precisely forecasting the impact of the independent factors on the dependent variable. The substantial F-value statistically demonstrates that variations in student environmental awareness are significantly accounted for by the regression model, with the Adiwiyata Program as the principal predictor.

These findings theoretically strengthen the argument in Ajzen's Planned Behavior model, where structured institutional interventions can shape subjective norms and individual behavioral control (Ajzen & Schmidt, 2020). The results of this study also align with previous studies on the efficacy of environmental education, which suggest that robust regression models often emerge when school programs encompass not only cognitive but also affective experiences (Murzyn et al., 2025; Van De Wetering et al., 2022). The linear validity and significance of this model demonstrate that strengthening environmental policies in schools consistently correlates positively with increased environmental awareness among students.

The basic linear regression analysis produced the equation $Y = 9.756 + 0.694X$, signifying that each one-unit enhancement in the Adiwiyata Program's implementation corresponds to a 0.694-unit rise in students' environmental awareness scores. A partial t-test yielded a t-value of 16.975 with a significance level of $p < 0.001$, indicating robust empirical support for the assertion that structured environmental program interventions in schools substantially enhance students' ecological mindsets. This finding validates the efficacy of the Adiwiyata Program as a transformative educational tool in altering students' value orientations regarding environmental protection.

The coefficient of determination (R^2) test results demonstrate that the Adiwiyata Program accounted for 60% of the variation in students' environmental awareness, positioning the "Green School" idea as the principal catalyst in fostering environmentally sensitive character. Nonetheless, an additional 40% of the variation was affected by extrinsic factors beyond the study's parameters, including familial history, social dynamics, and media exposure intensity. This suggests that while schools are crucial, environmental awareness arises from a combination between formal education and external social forces.

This finding aligns with Bronfenbrenner's ecological systems theory, which states that individual development is influenced by various environmental layers, with schools (the microsystem) having a direct influence on internalizing new values (El Zaatari & Maalouf, 2022; Lee et al., 2025). Furthermore, this research confirms previous studies that emphasize that the success of environmental education is highly dependent on program consistency (Stern et al., 2014), as the 60% contribution in this study reflects the successful implementation of the Adiwiyata policy. Consistent with Bandura's Social Learning theory, the existence of a structured program provides behavioral models and environmental reinforcement crucial for students to adopt sustainable pro-environmental attitudes (Morse et al., 2019; Zhang & Cao, 2025).

The findings of this study offer a robust empirical basis for educational institutions to persist in incorporating and enhancing the Adiwiyata policy within their curricula. The notable efficacy seen substantiates that the integration of organized environmental education is not simply an ancillary initiative but an essential and successful approach for attaining enduring educational objectives.

Optimizing this program is expected to establish an educational ecosystem that consistently supports the achievement of environmental sustainability. By strengthening sustainable policies, schools can fulfill their strategic role in developing a generation with an ecological mindset and a moral responsibility towards environmental conservation in the future.

4. CONCLUSION

The implementation of the Adiwiyata Program and the level of environmental awareness of students at Junior High School 1 Adiluwih are in the fairly good category, with a homogeneous data distribution, indicating that the internalization of environmental values has been evenly distributed across the student population. The analysis results show a positive and significant effect of the Adiwiyata Program on

students' environmental awareness ($p < 0.001$), where each one-unit increase in program implementation is predicted to increase environmental awareness by 0.694 units, according to the regression equation $Y = 9.756 + 0.694X$. Furthermore, the coefficient of determination of 0.600 confirms that the Adiwiyata Program contributes a dominant 60% to shaping students' environmental awareness, making it a key strategic instrument in promoting sustainability in the school environment.

Building upon the findings that the Adiwiyata Program provides a significant contribution of 60% to students' environmental awareness, Junior High School 1 Adiluwih is advised to continue optimizing the "Green School" policy through sustainable activity innovation, while teachers and staff need to consistently integrate environmental values in learning to maintain the homogeneity of the distribution of awareness that has been formed. In addition, the role of parents is highly expected in getting used to environmentally friendly lifestyles at home to complement students' formal education, while for further researchers, it is recommended to explore the other 40% of external factors not covered in this model, such as the influence of the family environment and social interactions..

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