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## **Correlation between Enviromental Knowledge and Behavior of Adiwiyata Students during the Covid-19 Pandemic**

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## Correlation between Environmental Knowledge and Behavior of Adiwiyata Students during the Covid-19 Pandemic

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### Article Info

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#### Keywords

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### Abstract

The State Elementary School of Bakalan Bantul Yogyakarta has received the Adiwiyata National Level award in 2018. Conducting environment-based learning in the Pandemic season is certainly a challenge, so knowledge insights and actions towards environmental friendliness are not known with certainty. This study aims to determine the relationship between knowledge about environmental pollution and environmentally friendly actions during the pandemic season. Research respondents are high's grade students at SD N Bakalan Bantul. This study uses a quantitative approach using a simple linear regression test. Data collection techniques used in the form of tests, questionnaires, and documentation. The conclusion of this study is that there is no relationship between knowledge of environmental pollution of SD N Bakalan Bantul students with a significant value of the calculation results of 0.572, but knowledge of environmental pollution possessed by students has a positive influence on environmentally friendly actions.

**Keywords: Adiwiyata school, knowledge of environmental pollution, environmentally friendly behavior, pandemic Season**

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### Introduction

Environmental issues are strategic issues in various interrelated fields. Extensive knowledge will be a tool to contribute to changing the environment for the better. Knowledge is all information obtained or possessed by humans (Mujib, 2019). The role of knowledge is very important because it serves as a competitive resource and those who have it will perform their role well (Ode & Ayavoo, 2020). A person who has knowledge of the environment and its problems as well as other actions towards the environment will consciously act with concern for the environment (Gifford & Nilsson, 2014). Its role is closely related to the behavior or character of a person that needs to be worked on earnestly through education. So that in character education there is an effort to develop oneself and the community (Indrawan, 2016).

Each institution is expected to contribute to a better environment. Schools have become one of the most important institutions in conducting environmental movements. Schools are able to open up insights into environmental management and increase environmental awareness to address broader environmental issues (Dasrita et al., 2015). The Indonesian government has awarded to schools that successfully implement the movement concerned about the environment. Schools that specialize in environmental management in the eight national standards of education (SNP) as a whole are directed environment -based. The movement to care for the environment is very easy to do before the pandemic season, Adiwiyata school designed many activities to prove that the school deserves the Adiwiyata award.

In 2018, Bakalan Bantul State Elementary School received the third ranked Adiwiyata award by the provincial government of the Special Region of Yogyakarta. In the pandemic school trouble for implementing a program based on the environment. Learning is almost entirely done online without any habits for students to directly care about the environment, so knowledge of environmental pollution is done online and environmental caring behavior is difficult to measure. Whereas the behavior of caring for the environment is very necessary for the environment to remain sustainable (Nurwidodo et al., 2020).

How the relationship of environmental pollution knowledge learned online to the environmental caring behavior of students of SD N Bakalan Bantul is the purpose of this study. This research is useful to be a material for the implementation of learning in schools that received the Adiwiyata award, as a government consideration in determining the assessment of Adiwiyata, and to inspire teachers to conduct active, innovative and meaningful environment -based learning.

## Method

This type of research is quantitative using a simple regression analysis that aims to collect information about the status associated with a symptom that is occurring at the time of the study. Simple regression analysis with independent sample t test with 95% confidence level aims to determine the relationship of environmental pollution knowledge (x) with environmentally friendly behavior (y). The application used in the analysis is SPSS version 22.

The population of this study is all high school students (grades 5 and 6) in SD N Bakalan Bantul Academic Year 2020/2021. The sample of this research is a saturated sample by using the entire population as a sample that is the whole of all high class students in SD N Bakalan Bantul with the assumption that the high class has fully gone through an environment -based learning process compared to the lower class.

Knowledge about the environment was measured using a test sheet instrument with multiple choice form, while environmentally friendly measures using a questionnaire instrument that has been adapted from the Central Statistics Agency (BPS) by taking six (6) indicators of environmentally friendly measures that include energy use, water use, use of transportation, waste management, and participation in environmental maintenance. The instrument before being tested was validated by an expert first. Expert opinion is very important in the development of instruments to know the relevance, truthfulness, and decide the extent to which items reflect the content domain (Z et al., 2020). To facilitate the distribution of instruments used online -based information technology by using google form. The use of this technology makes it easier for students to fill out instruments.

## Results and Discussion

Development of environmental pollution knowledge instruments and environmentally friendly action questionnaires have been validated by experts. The instrument was developed by utilizing online -based information technology using *google forms*. The use of internet technology is very important to find respondents who are difficult to find and easily accessible populations in different places, able to store data and automate the management of human efforts by paying attention to the environment (Paul & Jeyaraj, 2019; Rodham & Gavin, 2006). This is very appropriate because the pandemic condition is still declared level 4 by the government so that the learning process is declared online and it will be very difficult if researchers meet one by one the respondents in their respective places.

Based on the assessment of the instrument expert, input was obtained to improve the instrument. Input from experts for the improvement of knowledge test instruments on environmental pollution included: (1) eliminating the word "in your opinion" replaced with a direct question sentence, and (2) replacing scientific words with simple words appropriate to the student's level of development.

The environmentally friendly behavior questionnaire instrument was calculated using a Likert scale. The Likert scale is very useful for measuring respondents' responses in a tiered manner consisting of a series of statements about respondents' attitudes, values, internal circumstances, and assessments of their behavior or that of others in the study (Mellor & Moore, 2014). In using the Likert scale is not a choice of probability but the respondent must choose the appropriate one (Douven, 2018).

In Likert scale measurement, product quality levels are qualitatively on a scale of 5 (1 to 5) converted from the average score using ideal conversion guidelines (Widoyoko, 2016). Based on the assessment calculation results eco-friendly behavior questionnaire has good quality with an overall aspect score of 4.2 and is presented in Table 1. The expert input is descriptive for The improvement of the environmentally friendly behavior questionnaire consists of: (1) replacing the use of the word "You" with "I" (referring to students), (2) inserting components of indicators of environmentally friendly behavior that have been done in the school into the statement item, (3) replacing school -based action questions with statements of environmentally friendly actions in general, (4) the language used is simpler to make it easier for students, and (5) adding an indicator on natural disaster mitigation and changing some wording on the old indicators BPS indicators in 2014.

Table 1. Results of Quality Assessment of Environmentally Friendly Behavior Instrument

Aspects	Average	Quality
Energy utilization	4,2	Good
Water utilization	4,3	Very good
Transportation	4,1	Good
Waste management	4,3	Very good
Participation in environmental maintenance	4,3	Very good

The revised instrument will be used for research by contacting the school and asking the school to distribute the questionnaire to students. Questionnaire distribution was conducted in August 2021. Based on the results of instrument distribution, 45 students who have submitted instrument feedback have been distributed with details of 12 students in class 5A, 12 students in class 5B, 13 students in class 6A, and 8 students in class 6B.

The following hypotheses will be presented about the relationship between knowledge of environmental pollution and environmentally friendly actions:

H<sub>1</sub>: there is an effect of knowledge about environmental pollution (X) on environmentally friendly actions (Y).

H<sub>0</sub>: there is an influence of knowledge about environmental pollution (X) on environmentally friendly actions (Y).

Proof of hypothesis with simple linear regression used independent sample t test with the provision if the value of sig. <0.05 then there is the influence of variable X on variable Y and vice versa.

Linear regression analysis through *independent sample t test* using prerequisite test that needs to be done that is first to do the test of normality (Table 2) and homogeneity (Table 3).

Table 2. Data Normality Test Using One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		45
Normal Parameters <sup>a</sup>	Mean	.0000000
	Std. Deviation	12.60057677
Most Extreme Differences	Absolute	.111
	Positive	.111
	Negative	-.092
Kolmogorov-Smirnov Z		.746
Asymp. Sig. (2-tailed)		.635

a. Test distribution is Normal.

Table 2 shows that the significance value of the calculation result is  $0.635 > 0.05$  which means that the residual value is normally distributed so that it can be done using further analysis with linear regression

Table 3. Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
7.865	1	88	.006

Homogeneity test by levene method is shown in Table 3 and a significance value of  $0.006 < 0.005$  is obtained so that it is known that the data variance is not the same (not homogeneous). The provisions of the prerequisite test are: (1) if the data are normally distributed and homogeneous, then the *independent sample t test* used equal variance assumed. Meanwhile, if the data is normally distributed but not homogeneous, then the *independent sample t test* used equal variance non assumed, and (2) if there is one of the data that is not normally distributed, then used non-parametric tests such as *mann-whitney u test* or *wilcoxon rank sum test*. Based on these provisions, it can be concluded that further analysis to determine the relationship between knowledge about environmental pollution with environmentally friendly actions of students of SD N Bakalan used *independent sample t test* by using equal variance non assumed.

Table 4. Test results of independent sample t test

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	52.720	1	52.720	.324	.572a
	Residual	6986.080	43	162.467		
	Total	7038.800	44			

a. Predictors: (Constant), Environmental Knowledge

b. Dependent Variable: Environmentally Friendly Actions

Table 4 shows the significance value of test results of  $0.572 > 0.05$ , so it is concluded that there is no significant effect between the knowledge of environmental pollution possessed by students with environmentally friendly actions of students.

Tabel 5. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	63.304	6.090		10.395	.000
	Environmental Knowledge	.056	.098	.087	.570	.572

a. Dependent Variable: Environmentally Friendly Actions

The regression equation is made from a constant value of 63,304 and the environmental pollution knowledge value of 0.56:

$$y = a + bx$$

$$y = 63.304 + 0.56x$$

The meaning of the above equation is:

1. A constant of 63,304 means that the consistent value of the friendly action variable the neighborhood is 63,304.
2. The coefficient of X regression of 0.56 states that for each addition of 1% of the knowledge value of environmental pollution, the value of environmentally friendly measures increases by 0.56. The regression coefficient shows the direction of the influence of variable X on Y. This is because the value of the regression coefficient is positive. The

knowledge that students have should be directly proportional to the environmentally friendly actions. Environmentally friendly measures need to be stimulated in various ways both internally and externally. Internal stimuli are closely related to knowledge, attitudes, and values, while external factors are related to the norms and traditions of the family and social environment. Pandemic conditions have affected the internal and external conditions of students. The role of more learning done online and the lack of flexibility in social activities are factors that are likely to affect students' knowledge and actions. Learning in pandemic season is not only related to technological capabilities but also related to the increasing workload of students (Yani Supriani et al., 2020). Online learning makes students' energy more limited to do the tasks given by the teacher. The covid-19 pandemic condition increases students' anxiety to interact socially (Manurung & Siagian, 2020). The learning atmosphere when the pandemic is very different and the increased anxiety is even severe then it will affect the internal and external factors of the students.

## Conclusion

Conclusion of this study is that there is no relationship between the knowledge of environmental pollution of students of SD N Bakalan Bantul which is the 3rd provincial level Adiwiyata school in 2018 with the significance value of the results calculation of 0.572, but the knowledge of environmental pollution possessed by students has a positive direction of influence on environmentally friendly actions.

## Recommendations

Some of the suggestions proposed in this study are:

1. There is a need for more intense action to increase knowledge and familiarity with various efforts so that an environmentally friendly culture, especially pandemics can be developed.
2. There is a need for curriculum adaptation efforts that are able to deliver schools maintain and improve the status of adiwiyata.
3. There is a need for further research to examine how adiwiyata schools adapt to pandemic conditions.

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