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# Analysis of the Effect of Climate Change Literacy on Climate Awareness of Students in MAN 1 Yogyakarta, Yogyakarta City

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**Abstract**

*Objective:* This study aims to investigate the influence of Climate Change Literacy on Climate Awareness among students at MAN 1 Yogyakarta.
*Methodology:* This research method is quantitative method, the research design used is simple linear regression test. The population of this study were all grade X students at MAN 1 Yogyakarta, totaling 170 students. The respondent sample was determined by sampling technique or saturated sample. The variables of this study are Climate Change Literacy and Climate Awareness variables. Climate Change Literacy variables include understanding, impacts, and causes of climate change, while Climate Awareness includes attitude, personal concern, knowledge, and awareness includes attitude, knowledge, personal concern, multiplicative action, and climate-friendly behavior. Data collection techniques were carried out by observation and questionnaires.
*Results:* The results showed that the level of Climate Change Literacy at MAN 1 Yogyakarta was dominated by the high category, which was 51% with an average value of 78 which was in the range of 70-89. The level of Climate Awareness of students at MAN 1 Yogyakarta is also dominated by the high category, which is 65% with a high average of 71. The simple linear regression test conducted also obtained positive results. Climate Change Literacy can affect the Climate Awareness of students at MAN 1 Yogyakarta by 5.8%.
*Application/Originality/Value:* Thus, this study concludes that there is an influence between Climate Change Literacy on Climate Awareness at MAN 1 Yogyakarta.

## Introduction

Climate change poses a significant threat globally, necessitating heightened awareness and action. The rapid pace of development harms the environment, so the risk of climate change at the local and international levels is also getting higher (Djalante, 2018). Since the end of the 1800 period, the earth has experienced an increase in temperature of 0.6 degrees Celsius, this has prompted scientists to further research the causes and consequences of the temperature increase. Situated on the equator, Indonesia's coordinates are 6°N-11°N and 95°E-141°E. As a result, Indonesia experiences two distinct seasons: arid and wet. As a consequence, climate change in Indonesia, specifically the increase in temperatures, has led to an extension of the dry season and the proliferation of diverse calamities, including drought. Conversely, the short rainy season but higher rainfall also results in various disasters such as floods. This phenomenon results in disasters including increasingly common crop failure. Not only does climate change impact the environment, but it also greatly impacts human health such as the emergence of various diseases such as eye lens damage, skin cancer, and even mutations in the human chromosome system due to implications of climate change (Zhong & Huang, 2019).

Climate change is a condition characterized by shifting global climate patterns, which may give rise to an assortment of unpredictable weather phenomena (Yuliantoro, 2019). Urban Heat Island (UHI) is a globally recognized phenomenon characterized by significantly elevated temperatures in urban areas relative to their environs (de Groot-Reichwein et al., 2018; Lee et al., 2020; Wang et al., 2019). Moreover, according to (Heaviside, Macintyre, & Vardoulakis, 2017), UHI is on the rise and is primarily defined by the air temperature difference between developed and undeveloped urban regions. This layer is also more noticeable during the night in urban regions, where air temperatures can reach 10°C in the case of major cities.

Additional information indicates that the Urban Heat Island (UHI) phenomenon, which manifests in significant cities worldwide, is one consequence of climate change. As defined in Law No. 31 of 2009, climate change refers to alterations in the natural climate variability and modifications in the composition of the atmosphere on a global scale that are induced by human activities, whether directly or indirectly, over a comparable time period (Susilawati et al., 2022). Human activities such as burning fossil fuels and land use change can also increase the greenhouse effect, which can increase global

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temperatures, melt polar ice caps, increase sea surface temperatures, and lead to changes in rainfall (Rahmayanti & Feryl Ilyasa, 2022).

Along with the development of the globalization era, human knowledge and attitudes are increasingly unbalanced. Thus, efforts to tackle climate change must start from a shared awareness, through a process of awareness of the formation of risk perceptions and the dissemination of knowledge. Climate change is not only emphasizes on older people but also the role of the younger generation. Youth play an important role in the issue of climate change that occurs (Luthfia, 2019). Youth are agents of change, many contributions can be made by youth to make movements of change (Sahendra et al., 2023). Youth, as defined in Article 1, Paragraph 1 of the Youth Law No. 40 of 2009, are Indonesian citizens aged between 16 and 30, undergoing a critical period of development and growth. Additionally, Article 16 of Chapter V explains that youth must act as a moral force, agent of change, and social catalyst (Zainuri, 2020).

One potential action to mitigate the consequences of climate change is to enhance climate change literacy and raise public awareness (Luthfia, 2019). As per the definition provided by the United Nations Educational, Scientific, and Cultural Organization (UNESCO), literacy pertains to an individual's capacity to comprehend and appraise environmental circumstances. By applying this comprehension and appraisal, one is able to make informed decisions regarding the most suitable courses of action to preserve, restore, and enhance environmental conditions (Adawiah & Norizan, 2013). Environmental literacy has a positive impact; for instance, students can be encouraged to be curious about environmental matters (Papilaya et al., 2023). Environmental literacy is also used to instill student character in preparing themselves to be aware of the environment so that they can overcome the problems that exist around them. A conscientious attitude towards the environment is another definition of this term. In addition to understanding the environment, environmental consciousness entails being receptive to and capable of delivering solutions to environmental problems. (Burchett, 2015).

Climate change impacts due to global warming are getting worse, but there is still a literacy gap regarding climate change in society, especially among adolescents. Currently, there are still many young people who do not understand and know the impact of climate change that occurs. Shavina Nabila, (2022) stating that students in Indonesia have a low understanding of climate change. Therefore, the level of literacy and the level of climate awareness, especially the younger generation as the next generation of the nation must be improved. Which, knowledge is the initial stage of a perception which then gives birth to attitudes both actions and actions. Through good knowledge, it will encourage positive behavioral changes in a person. Understanding and awareness of the environment are essential components of the basic knowledge needed for everyone to comprehend various solutions to environmental problems.

Learners are one of the components of education that is expected to contribute in providing better changes for the environment. Learners must be educated to know and realize the various environmental problems that exist today to form the expected environmental problem solving skills. This knowledge can equip students with environmental literacy skills, including environmental insight and awareness of the importance of the environment, enabling them to solve various environmental problems.

Based on the explanation that has been stated, it is important to know how much influence Climate Literacy has on students' Climate Awareness. MAN 1 Yogyakarta is one of the schools included in the 100 best schools in Indonesia which is located on Jl. C. Simanjuntak No. 60, Yogyakarta, Yogyakarta, and is located in the area of major campuses in Indonesia such as Gajah Mada University (UGM), Yogyakarta State University (UNY), Indonesian Islamic University (UII), Muhammad University Yogyakarta (UMY) etc. Based on the description above, the researcher conducted research related to "The Effect of Climate Change Literacy on Climate Change Awareness of students at MAN 1 Yogyakarta, Yogyakarta City".

## Research Methods

This research is quantitative in nature and employs a straightforward linear regression test design. Students' Climate Change Literacy and Climate Awareness at MAN 1 Yogyakarta, one of the top 100 institutions in Indonesia, are the variables examined in this research. Students at MAN 1 Yogyakarta's comprehension of climate change, its impacts, its causes, attitudes, personal concern, knowledge, multiplicative actions, and climate-friendly behavior comprise the variable indicators examined in this research. The population used in this study were all grade 10 students at MAN 1 Yogyakarta, totaling 170 students. Respondents determined in this study used saturated samples, where all members of the population will become respondents. The data collection method employed in this research study was a questionnaire comprising several items that participants were required to complete (refer to Table 1). Table of questionnaire indicators.

In the research, inferential analysis and statistical analysis techniques are used to process data at the level of Climate Change Literacy and Climate Awareness of students at MAN 1 Yogyakarta in order to draw conclusions at the population level regarding the effect of Climate Change Literacy on Climate Awareness of students at MAN 1 Yogyakarta. Conducts a more comprehensive examination and is employed to derive conclusions on a population-wide scale. The statistical test used is a simple linear regression test, where calculations are carried out to determine the effect between two variables.

**Table 1.** Questionnaire Indicator Table

| Variabel | Indicator | No. Item |
|---|---|---|
| Climete Change Literacy | 1. Understanding Climate Change | 1, 2, 3, 4, 5, 6 |
| | 2. Climate Change Impacts. | 7, 8, 9, 10 |
| | 3. Causes Of Climate Change | 11, 12, 13, 14, 15, 16 |
| Climete Change Literacy | 1. Attitude | 17, 18, 19, 20, 21 |
| | 2. Personal Care | 22, 23, 24 |
| | 3. Knowledge | 25, 26, 27 |
| | 4. Multiplicative Action | 28, 29 |
| | 5. Climate Friendly Behavior | 30, 31, 32, 33, 34, 35 |

**Table 2.** Climete Change Literacy & Climete Awareness Level

| No. | Catogery | Mark |
|---|---|---|
| 1 | Very High | 90-100 |
| 2 | Height | 70-89 |
| 3 | Low | 30-69 |
| 4 | Very Low | 30-0 |

Source: Researcher, 2023

## Research Findings

Data collection on Climate Change Literacy on Climate Awareness of students at MAN 1 Yogyakarta is presented as follows. The Climate Change Literacy variable has three indicators, namely indicators of understanding, impact, and causes of climate change (Nayan et al., 2020). while the Climate Awareness variable has five indicators, namely indicators of attitude, knowledge, personal concern, multiplicative action, and climate-friendly behavior. The results can be seen below (Kuthe et al., 2019)

### *Level of Climate Change Literacy Among Students et MAN 1 Yogyakarta, Yogyakarta City*

The findings of the analysis conducted by scholars concerning the degree of climate change literacy among students enrolled at MAN 1 Yogyakarta are presented in Table 3.

**Table 3.** Statistical Analysis of the Distribution of Climate Change Literacy Values

| Max Score | Min Score | Mean | Std.Deviation | Number of Sample |
|---|---|---|---|---|
| 100 | 44 | 77 | 13,1048 | 170 |

Table 3 presents the results of a statistical analysis examining the distribution of climate change literacy among 170 students. The minimum score recorded was 44, and the maximum score recorded was 77. The standard deviation of the disaster experience score was 13,048.

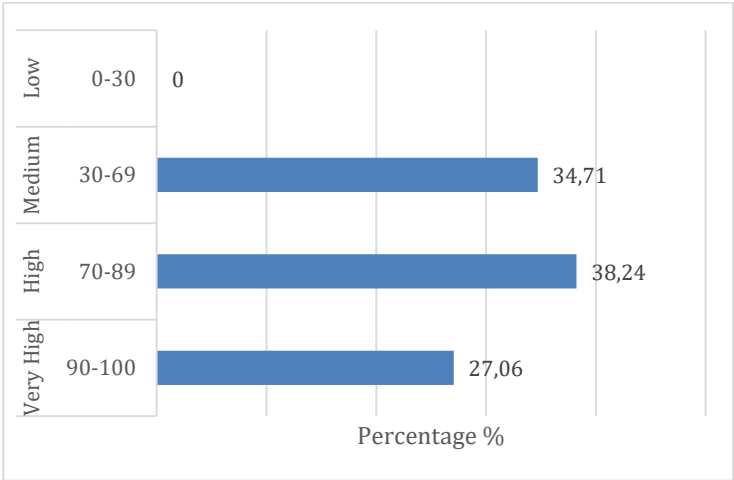


**Figure 1**. Understanding of Climate Change

In the Climate Change Literacy indicator Figure 1 shows the level of understanding of climate change of students at MAN 1 Yogyakarta. There are 27% of 170 students who are in the very high category, 38% of 170 students who are in the high category, and 34% of 170 students who are in the medium category.

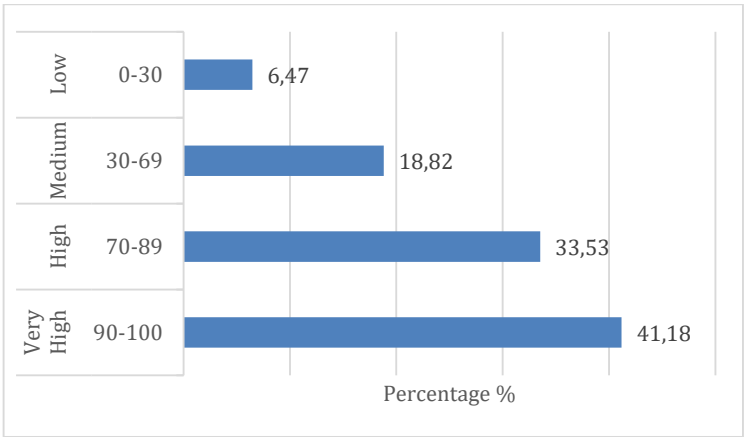


**Figure 2.** Climate Change Impacts

Figure 2 shows the impact of climate change on students at MAN 1 Yogyakarta. There are 41% of 170 students in the very high category, 33% of 170 students in the high category, 18% of 170 students in the medium category, and 6% of 170 students in the low category.

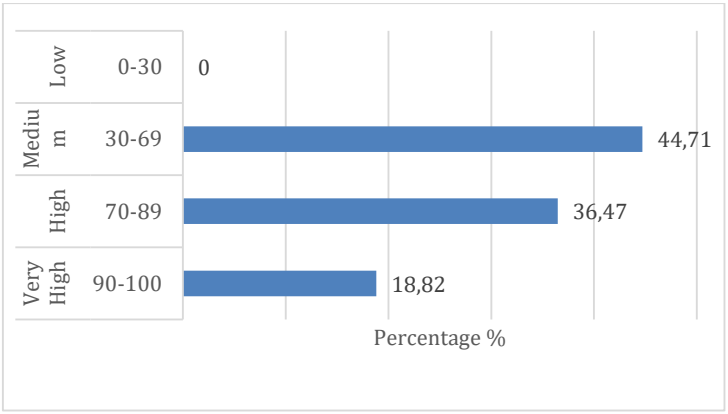


**Figure 3.** Causes of climate change

Figure 3 above shows the indicators of the causes of climate change in students at MAN 1 Yogyakarta. There are 18% of 170 students in the very high category, 36% of 170 students in the high category, and 44% of 170 students in the medium category.

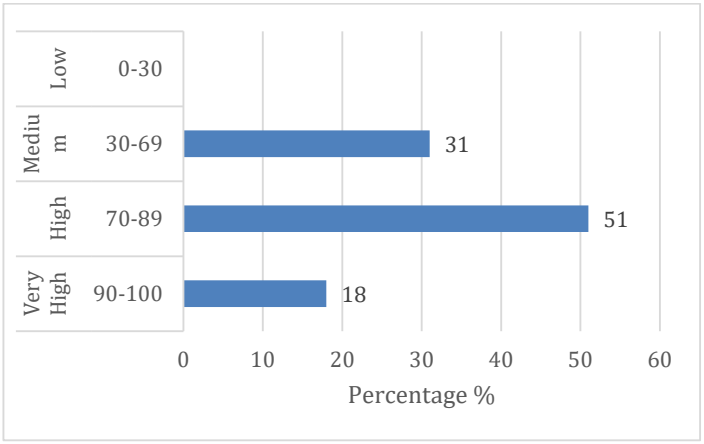


**Figure 4.** The Level Of Climate Change Literacy Of Students In Man 1 Yogyakarta

Figure 4 above shows the level of climate change literacy among students at MAN 1 Yogyakarta. There are 18% of 170 students in the very high category, 51% of 170 students in the high category, and 31% of 170 students in the medium category.

**Table 4.** Climate Change Literacy Level

| Climate Change Literacy Level | | | |
|---|---|---|---|
| **Indicator** | **Interval** | **Average** | **Categorization** |
| Understanding | 70-89 | 80 | High |
| Impact | 70-89 | 77 | High |
| Causes | 70-89 | 76 | High |
| Average | 70-89 | 78 | High |

From the three indicators of Climate Change Literacy which include indicators of understanding, impacts, and causes of climate change, the average level of Climate Change Literacy of students at MAN 1 Yogyakarta is 78 and is included in the high category, which is in the range of 70-89.

### *Level of Climate Awareness Among Students et MAN 1 Yogyakarta, Yogyakarta City*

The findings of the conducted analysis pertaining to the level of climate awareness among students enrolled at MAN 1 Yogyakarta are presented in Table 5.

**Table 5.** Statistical Analysis of the Distribution of Climate Awareness Values

| Max Score | Min Score | Mean | Std.Deviation | Number of Sample |
|---|---|---|---|---|
| 95 | 51 | 73 | 8,9653 | 170 |

Table 5 presents the statistical analysis of the distribution of climate awareness. The sample consists of 170 students, and the disaster experience score has a mean of 73, a maximum of 95, and a minimum of 51. The standard deviation of the disaster experience score is 8.9653.

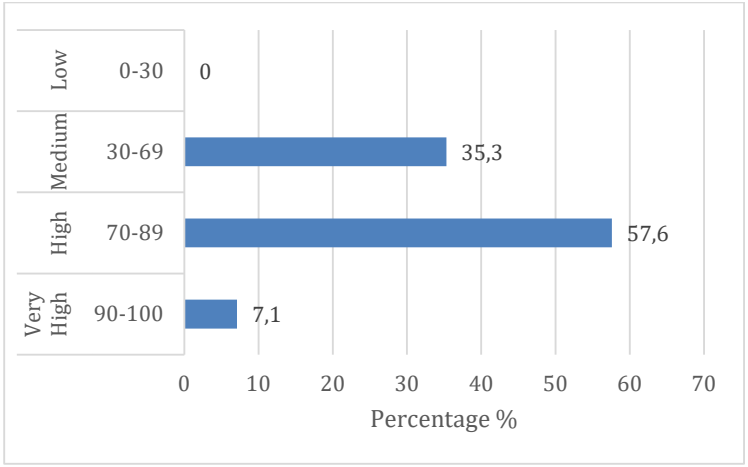


**Figure 5.** Learners' Attitudes Toward Climate Change

Figure 5 (Students' Attitude towards Climate Change) shows the attitude of students towards climate change at MAN 1 Yogyakarta. There are 7% of 170 students in the very high category, 57% of 170 students in the high category, and 36% of 170 students in the medium category.

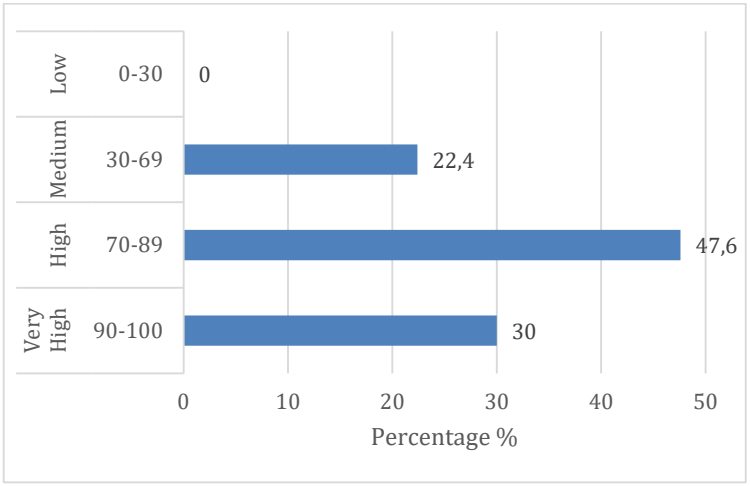


**Figure 6**. Learners' Personal Concern for Climate Change

Figure 6 (Personal concern) shows students' personal concern for climate change at MAN 1 Yogyakarta. There are 30 % of 170 students in the very high category, 47 % of 170 students in the high category, and 22% of 170 students in the medium category..

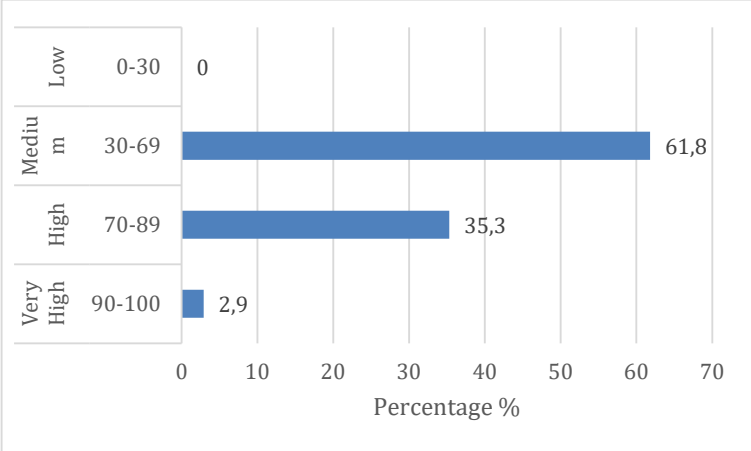


**Figure 7**. Learners' Knowledge of Climate Change

Figure 7 (Learners' Knowledge of Climate Change) shows that students' knowledge of climate change at MAN 1 Yogyakarta. There are 3 % of 170 students in the very high category, 35 % of 170 students in the high category, and 61 % of 170 students in the medium category.

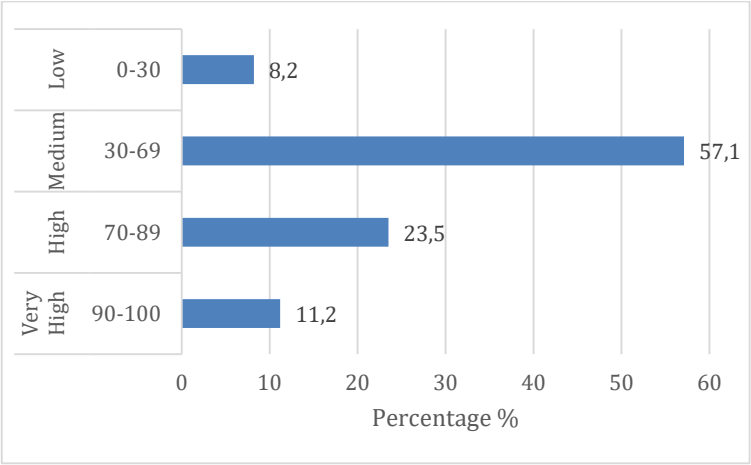


**Figure 8.** Multiplicative Actions

Figure 8 (Multiplicative Actions) above shows the multiplicative actions of students regarding climate change at MAN 1 Yogyakarta. There are 11% of 170 students in the very high category, 23% of 170 students in the high category, 57% of 170 students in the medium category, and 8% of 170 students in the low category.

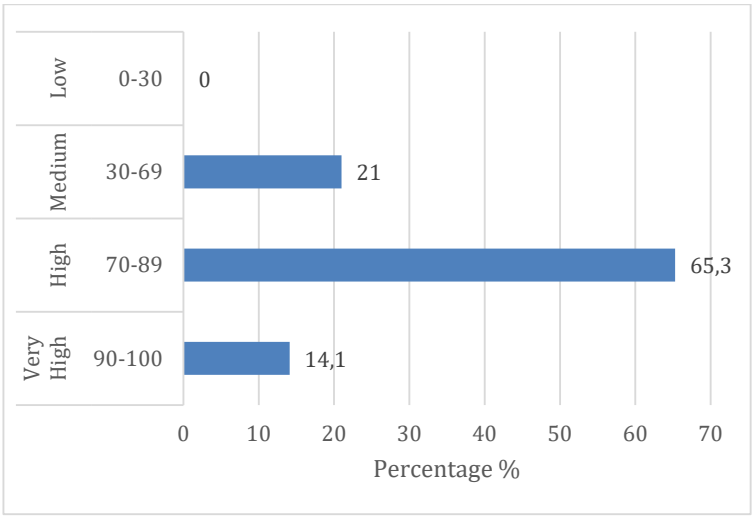


**Figure 9.** Climate Friendly Behavior

Figure 9 (Environmentally Friendly Behavior) above shows the environmentally friendly behavior of students at MAN 1 Yogyakarta. There are 14% of 170 students in the very high category, 65% of 170 students in the high category, and 21% of 170 students in the medium category.

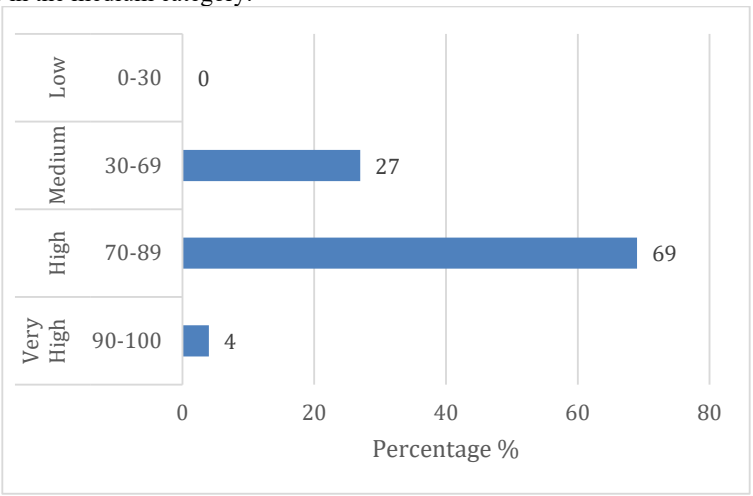


**Figure 10.** The Level Of Climate Awareness Of Students In Man 1 Yogyakarta

Figure 10 Climate awareness level of MAN 1 Yogyakarta students at MAN 1 Yogyakarta. There are 4% of 170 students in the very high category, 69% of 170 students in the high category, and 27% of 170 students in the medium category

**Table 6.** Climate Awareness Level

| Climate Change Literacy Level | | | |
|---|---|---|---|
| **Indicator** | **Average** | **Interval** | **Categorization** |
| Attitude | 73 | 70-89 | High |
| Personal Care | 80 | 70-89 | High |
| Knowledge | 66 | 30-69 | Medium |
| Multiplicative Action | 60 | 30-69 | Medium |
| Climate Friendly Behavior | 74 | 70-89 | High |
| **Average** | **71** | **70-89** | **High** |

From Table 6 (Level of Climate Awareness) the five indicators of Climate Awareness which include indicators of attitude, personal concern, knowledge, multiplicative action and environmentally friendly behavior, the average level of Climate Awareness of students at MAN 1 Yogyakarta is 71 and is included in the high category, which is in the range of 70-89.

### *The Effect of Climate Change Literacy on the Level of Climate Awareness Among Students et MAN 1 Yogyakarta, Yogyakarta City*

### *Correlation Test*

**Table 7.** Correlation Test Results

| | | Climate_Change_Literacy | Climate_Awareness |
|---|---|---|---|
| Climate_Change_Literacy | Pearson Correlation | 1 | .241** |
| | Sig. (2-tailed) | | .002 |
| | N | 170 | 170 |
| Climate_Awareness | Pearson Correlation | .241** | 1 |
| | Sig. (2-tailed) | .002 | |
| | N | 170 | 170 |

From the results in table 7. The results of the Correlation Test, we can know that the Pearson correlation coefficient shows a value of 0.241 and is significantly correlated because the Sig (2-tailed) value shows 0.002 which is less than 0.05. This can also be seen from the sign below the figure which states that the correlation is significant at the 0.01 level. Ratner (2009) and Pratama (2019) state that if the correlation coefficient is between 0-0.3, it can be categorized as having a weak relationship between variables. The correlation coefficient in the research results shows 0.241 which can be concluded that the relationship between Climate Change Literacy and Climate Awareness is positive but quite weak because the p value is 0.002, so the relationship is significant. Therefore, the alternative hypothesis (Ha) is accepted. It can be concluded that the higher the level of Climate Change Literacy in students, the Climate Awareness will also increase.

### *Normality and Linearity Test*

**Table 8**. Normality Test Results

| | | | Unstandardized Residual |
|---|---|---|---|
| N | | | **170** |
| Normal Parameters | Mean | | .0000000 |
| Most Extreme Differences | Std. Deviation | | 8.26707174 |
| | Absolute | | .051 |
| | Positive | | .034 |
| | Negative | | .051 |
| Test Statistic | | | .051 |
| Asymp Statistic (2-tailed) | | | .200c.d |
| Monts Carto Sig. (2-tailed) | Sig. | | .745e |
| | 99% Confildence interval | Lower Bound | .733 |
| | | Lower Bound | .756 |

The K-S/Kolmogorov-Smirnov Normality test indicates that the two-tailed Asymp. Sig. variables X (0.200) and Y (0.745) both exceed the significance level of 0.05. As a result, the variables X and Y can be described as having a normal distribution.

**Table 9**. Linearity Test Results

**ANOVA Table**

| | | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|---|
| Climate_Awareness* | Between Groups | (Combined) | 1282.561 | 9 | 142.507 | 2.077 | .034 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Climate Change_Literacy | | Linearity | 709.107 | 1 | 709.107 | 10.336 | .002 |
| | | Deviation from Linearity | 573.454 | 8 | 71.682 | 1.045 | .405 |
| | Within Groups | | 10976.762 | 160 | 68.605 | | |
| | Total | | 12259.324 | 169 | | | |

The significance level deviation from linearity is 0.405, which is greater than 0.05, as determined by the Linearity test results. Thus, it can be concluded that a linear relationship exists between the independent variable (X) and the dependent variable (Y).

### *Regression Test*

**Table 10.** Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .241[a] | .058 | .052 | 8.292 |

Based on the Regression Test results in table 10. Model Summary there are three tables. The first table shows a summary of the model which contains the R and R Square (R) values. The R value shows the correlation coefficient between variables. It can be seen that the correlation value is 0.241. Then R Square shows how much the independent variable (Climate Change Literacy) can explain or predict the dependent variable (Climate Awareness). In finding the percentage of prediction, it is necessary to multiply it to 100%. Therefore, in this case 0.058 x 100% = 5.8%. This means that Climate Change Literacy can affect students' Climate Awareness by 5.8%. In other words, Climate Change Literacy can affect Climate Awareness by 5.8%, while the rest, 100% -5.8% = 94.2% may be influenced by other variables.

**Table 11.** Anova Test Results

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 709.107 | 1 | 709.107 | 10.314 | .002[b] |
| | Residual | 11550.216 | 168 | 68.751 | | |
| | Total | 12259.324 | 169 | | | |

Table 11 presents the outcomes of the regression analysis. The table of Aova Test Results indicates that there is a significant relationship between the dependent variable (Climate Awareness) and the independent variable (Climate Change Literacy). The p value is 0.002, which indicates that p is less than 0.05; therefore, Ha is accepted.

**Table 12**. Coefficients data

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | sig |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 57.027 | 3.827 | | 14.901 | .000 |
| | Climate_Change_LiteracyY | .977 | .304 | .241 | 3.212 | .002 |

Based on the Regression Test results in table 12. Coefficients, the table shows that Climate Change Literacy can significantly influence Climate Awareness because the Sig. column shows a value of 0.002 which is less than 0.05 ($p < 0.05$).

## Discussion

### *Level of Climate Change Literacy Among Students et MAN 1 Yogyakarta, Yogyakarta City*

Literacy is not only about the ability to read and write but has a very broad context. Literacy is the ability and knowledge that a person has in adjusting to the development and needs of the times (Nugraha & Octavianah, 2019). Which, literacy skills a very important for students to have in facing the times at this time. A person's literacy skills will support success in learning at school, influence success, and can improve the quality of human resources in dealing with life (Rahmah et al., 2019). Climate Change literacy or what is often called environmental literacy is a conscious attitude to maintain environmental balance and participate in dealing with environmental issues that occur (Kusumaningrum, 2018). According to (Minnesota Office of Enviromental Assistance in Rahmah et al (Rahmah et al., 2019) also states that Climate Change literacy is an understanding of aspects that support the environment, environmental principles, and attitudes to

always maintain environmental conditions that are applied in daily activities. Thus, Climate change literacy or environmental literacy is an understanding and awareness of a person to maintain and maintain environmental balance, especially in efforts to prevent and deal with current climate change.

The climate change literacy instrument was adapted and developed from pretest and posttest questions made by Kuthe et al., (2019) which contained conceptual knowledge questions to determine students' understanding of concepts related to climate change. The literacy of comprehending climate change is assessed through the comprehension of climate change itself, its consequences, and its origins.

In the Climate Change Literacy indicator, Figure 1 shows that the understanding of climate change of students at MAN 1 Yogyakarta is dominated by the high category, which is 38.24% with an average score of 80 and is in the high category, namely in the range of 70-89. In the Climate Change Impact indicator, Figure 2 shows that the impact of climate change on students at MAN 1 Yogyakarta is dominated by a very high category, namely 41% with an average score of 77 and is in the high category, namely in the range of 70-89. Figure 3 shows that the indicator of the causes of climate change in students at MAN 1 Yogyakarta is dominated by a moderate category, namely 44% with an average score of 77 and is in the high category, namely in the range 70-89. Therefore, it can be concluded from the three indicators in Figure 4 that the level of climate change literacy of students at MAN 1 Yogyakarta is in the high category, namely 51% with an average score of 78 (high) of the three indicators of understanding, impact, and causes of climate change.

### *Level of Climate Awareness Among Students et MAN 1 Yogyakarta, Yogyakarta City*

Climate Awareness or awareness is a state of a person who has in-depth knowledge and can be seen from behavior and attitudes. Awareness is the relationship between individuals and their environment. Which, awareness means a self-relationship in observing, knowing, and reflecting on the environment. From this awareness causes humans to make a change or self-transformation, where environmental awareness that has been embedded in a person plays an important role in the formation of positive attitudes and actions towards good environmental management (Mkumbachi et al., 2020). Climate Awareness is a curiosity and awareness that is reflected in Neolakan's actions (Munawar et al., 2019). Thus Climate Awareness has a very important role in building awareness of the environment and real action in paying attention to environmental problems and being able to act appropriately in overcoming various environmental problems. Environmental awareness also has the potential to build real action in environmental awareness to always maintain the sustainability of further life (Gabriella & Sugiarto, 2020).

Climate change awareness is a condition of understanding the things felt and experienced by students related to the causes and consequences of climate change so that it will create an awareness both in terms of conceptual, experience, and desire to be able to adapt. Indicators of climate change awareness are measured using non-test instruments in the form of questionnaires adapted and developed from previous research (Sen et al, 2021).

In the Climate awareness indicator, Figure 5 shows that the attitude of students at MAN 1 Yogyakarta towards climate change is dominated by the high category, namely 57% with an average score of 73 and is in the high category, namely in the range of 70-89. In the Climate Change Impact indicator, Figure 6 shows that the personal concern of students at MAN 1 Yogyakarta is dominated by the high category, namely 47% with an average score of 80 and is in the high category, namely in the range 70-89. Figure 7 shows that the climate knowledge indicator of students at MAN 1 Yogyakarta is dominated by the moderate category, namely 61% with an average score of 66 and is in the moderate category, namely in the range 30-69. Figure 8 shows that the multiplicative action indicator of students at MAN 1 Yogyakarta is dominated by the moderate category, namely 57% with an average score of 60 and is in the moderate category, namely in the range 30-69. Figure 9 shows that the indicator of environmentally friendly behavior of students at MAN 1 Yogyakarta is dominated by the high category, namely 65% with an average score of 74 and is in the high category, namely in the range of 70-89.

Hence, drawing from the data presented in Figure 10, it can be inferred that the students enrolled at MAN 1 Yogyakarta possess a considerable degree of climate consciousness, as 69% do so, as measured by an average score of 71 (high) across the five aforementioned indicators (attitude, personal concern, knowledge, multiplicative action, and environmentally friendly behavior).

### *The Effect of Climate Change Literacy on the Level of Climate Awareness Among Students et MAN 1 Yogyakarta, Yogyakarta City*

Y represents the dependent variable that is predicted, X denotes the independent variable. The intercept, denoted as a, signifies the value of Y at X = 0, and the slope, denoted as b, signifies the average change in Y with respect to alterations in X. The regression coefficients a and b are regression coefficients, and their values are determined by the subsequent equation:

$$Y = a + bX \quad (1).$$

Y represents the dependent variable that is predicted, X denotes the independent variable. The intercept, denoted as a, signifies the value of Y at X = 0, and the slope, denoted as b, signifies the average change in Y with respect to alterations in X. The regression coefficients a and b are regression coefficients, and their values are determined by the subsequent equation:

$$Y = a + bX \quad (1)$$

$$b = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{n(\Sigma x^2) - (\Sigma x)^2} \quad (2)$$

$$a = \frac{\Sigma y - b(\Sigma x)}{n} \quad (3)$$

The value of a is the slope, while the value of b is the intercept and n is the amount of data used in the calculation of the analysis performed.

From the results of the validity and reliability tests of Climate Change Literacy and Climate Awareness data conducted by researchers to students of MAN 1 Yogyakarta. Obtained 35 valid and reliable question items. The criterion for making decisions is that the data is considered consistent if alpha is greater than r.table (alpha> r.tebel), and inconsistent if alpha is less than r.table (alpha< r.table). According to the aforementioned findings regarding the validity and dependability of the Climate Change Literacy data, the questionnaire's validity and dependability test results are deemed consistent or reliable when alpha is greater than or equal to r.table for consistency (0.598 > 0.4332). While the Climate Awareness questionnaire reliability test decision is also reliable or consistent, namely alpha rtebel = consistent 0.791> 0.4332. After going through the validity test process and the questionnaire reliability test is said to be good because the two variables obtained valid and consistent test results.

The results in table 7 (Correlation Results) show that the Pearson correlation coefficient shows a value of 0.241 and is significantly correlated because the Sig (2-tailed) value shows 0.002 which is less than 0.05. This can also be seen from the sign below the table which states that the correlation is significant at the 0.01 level. Ratner (2009) and Pratama (2019) state that if the correlation coefficient is between 0-0.3, it can be categorized as having a weak relationship between variables. The correlation coefficient in the research results shows 0.241 which can be concluded that the relationship between Climate Change Literacy and Climate Awareness is positive but quite weak because the p value is 0.002, so the relationship is significant. Therefore, the alternative hypothesis (Ha) is accepted. It can be concluded that the higher the level of Climate Change Literacy in students, the Climate Awareness will also increase.

The purpose of the normality test is to determine whether the distribution of the data utilized in the study is normal or aberrant. The normality test is also a component of the data analysis requirements test or classical assumption test, which means that the research data must be examined for normality of distribution prior to regression analysis. The decision-making foundation of the Kolmogorov-Smirnov normality test When the significance value (Sig) exceeds 0.05, it indicates that the research data follows a normal distribution. On the contrary, research data lacking a significance value (Sig.) below 0.05 can be characterized as non-normally distributed. It is evident from the outcomes of the Kolmogorov-Smirnov normality test (Table 8; Normality test results) that the two-tailed Asymp. Sig variables X 0.200 and Y 0.745 are both greater than 0.05. As a result, the variables X and Y can be described as having a normal distribution.

The purpose of conducting the linearity test is to ascertain the relationship between the dependent variable (Y) and the independent variable (X). This relationship serves as the foundation for the test's decision-making process: if the significance value of the Deviation from linearity is greater than or equal to 0.05, it can be concluded that a linear relationship exists between the two variables (X and Y); conversely, if the significance value is less than or equal to 0.05, it can be concluded that there is no linear relationship between the independent variables (X and Y). According to the findings presented in the Table Linearity Test Results, the significance value for the deviation from linearity is 0.405, which is greater than the threshold of 0.05. Thus, it can be concluded that a linear relationship exists between the independent variable (X) and the dependent variable (Y).

From Table 10. (Model Summary) the first table shows a summary of the model which contains the R and R Square (R) values. The R value shows the correlation coefficient between variables. It can be seen that the correlation value is 0.241. Then R Square shows how much the independent variable (Climate Change Literacy) can explain or predict the dependent variable (Climate Awareness). In finding the percentage of prediction, it needs to be multiplied by 100%. Therefore, in this case 0.058 x 100% = 5.8%. This means that Climate Change Literacy can influence students' Climate Awareness by 5.8%. In other words, Climate Change Literacy can affect Climate Awareness by 5.8%, while the rest, 100% - 5.8% = 94.2% can be influenced by other variables.

The second table in table 11 (Anova Test Results) is the ANOVA table. The table shows that the independent variable (Climate Change Literacy) significantly affects the dependent variable (Climate Awareness). It can be seen that the p value is 0.002 which means $p < 0.05$. Therefore, Ha is accepted. Then, in table 12. (Coefficients) shows that Climate Change Literacy can significantly affect Climate Awareness because it can be seen in the Sig. column shows a value of 0.002 which is less than 0.05 ($p < 0.05$).

## Conclusion

Based on the results of research conducted on the effect of Climate Change Literacy on Climate Awareness of students at MAN 1 Yogyakarta, students gave a positive response to the indicators in this study. Which is where the level of literacy and the level of climate awareness of students is in the high category. The results of the simple linear regression test conducted to analyze the effect of Climate Change Literacy on Student Climate Awareness at MAN 1 Yogyakarta also obtained positive results, namely Climate Change Literacy can affect student Climate Awareness at MAN 1 Yogyakarta by 5.8%. In other words, Climate Change Literacy affects Climate Awareness by 5.8%, while 94.2% can be influenced by other variables. Thus, this study concludes that there is an influence of Climate Change Literacy on Climate Awareness of MAN 1 Yogyakarta Students.

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