



## Data inventory, processing, and reporting on plant blindness among high school students in three schools in West Java

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### ABSTRACT

Plant blindness is a problem related to a person's inability to realize, recognize, and know the benefits and roles of plants. After some research, there was a shift in the term, from Plant Blindness to Plant Awareness Disparity. This study aims to find out the prevalence of Plant Blindness in three high schools in West Java. The method used in this study is descriptive Cross sectional. The results of this study revealed that there were differences in the level of plant awareness in the three schools studied. One of the schools in the city of Bandung showed the highest plant awareness rate. In addition, it was also found that students who had a high level of plant awareness had a high perception of plant awareness. As a follow-up, further research can be carried out to collect more data so that it becomes a whole population. In addition, researchers can then use additional instruments so that more things can be revealed about plant blindness.

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## INTRODUCTION

Plant blindness is defined as a person's inability to recognize the existence, beauty, uniqueness, and benefits of a plant (Achurra, 2022; Parsley, 2020; Wandersee & Schussler, 1999). This is a problem that occurs in various parts of the world, such as in Austria and Greece. In a study conducted in Austria, students showed a high attitude towards plants, but did not show interest in plants, either in whole plants or in studying plants (Dünser et al., 2024). Another study conducted in Greece revealed that students showed greater interest in animal topics compared to plant topics (Amprazis et al., 2021). Not only in students, but the problem of plant blindness is also found in young people. This is illustrated in a study conducted by Panitsa et al. (2021) which states that young people often underestimate plant wealth, plant communities, and the importance of plants to the ecosystem.

Not only in Austria and Greece, but the problem of plant blindness is also experienced by Indonesian students. This was found in a study conducted by Putriani et al. (2023) which revealed that students in one of the junior and senior high schools in Hulu Gurung, West Kalimantan, Indonesia have a high rate of plant blindness. Another study conducted Wulandari et al. (2023) revealed that students in one of the junior high schools have a high rate of plant blindness compared to one of the high schools in the Sindai area. These results show that the problem of plant blindness is one of the problems that needs to be further researched, especially in Indonesia, which is a country with high plant biodiversity (Sun et al., 2024). The high rate of plant blindness in students is certainly one of the problems in an effort to improve students' understanding of the basics of plant concepts (Uno, 2009). Reducing the rate of plant blindness also needs to be sought to make it easier for students to understand plant concepts and to increase students' awareness of biodiversity in Indonesia.

Although it is an urgent problem, research related to plant blindness in Indonesia has not been done much. The two studies mentioned earlier are only a small part of the results of research related to plant blindness, which is dominated by research conducted abroad. This can be caused by the lack of attention from teachers and researchers regarding the inequality of interest in animals and plants. This is reinforced by research conducted by Kletečki et al. (2023) which states that learning about botany is no longer interesting to discuss. The study also stated that teachers tend to look for other learning methods compared to using plants around them as learning materials.

Based on the background described, research is needed to analyze the level of plant blindness of students in Indonesia, especially in West Java. Data collection in West Java is determined by the lack of research showing the level of plant blindness of students in West Java. This research is expected to be used as a basis for decision-making on solutions that will be recommended to solve the problem of Plant Blindness. In response to this, this study needs to pay attention to the selection of data sources or populations and samples for research. In addition, this study also needs to consider data collection techniques and tools so that the data obtained can measure what is to be measured, in this case, the level of plant blindness of high school students. The purpose of this study is to analyze the difference in the level of plant blindness of students in three schools in West Java. To guide the research, the following research questions have been prepared.

1. What is the level of plant blindness in three schools in West Java?
2. What is the difference in the level of plant blindness between the three schools in West Java?
3. What is the relationship between the test results and the plant blindness questionnaire of students in three schools in West Java?
4. What are the reflections and follow-up plan in this study?

## METHODS

### Research Design

The research method applied in this study is a cross-sectional descriptive method, which is a research design that contains data collection from a population or sample that represents the population at a certain point in time. The design of this study is used to look at circumstances, habits, or phenomena that occur without intervention or manipulation of variables. Based on Creswell and Guetterman (2019), this research design was used to look at patterns, identify relationships, and describe the characteristics of a population based on data collected at that time alone.

The implementation of plant blindness data collection in one school in the city of Bandung was carried out in one meeting, namely on October 17, 2024. The data collection was carried out for 50 minutes to collect data using test instruments and questionnaires. During this time, students are directed to fill out the test instrument first for 30 minutes. In filling out the test, students are directed to

fill out the test according to their knowledge without looking at other references. After filling out the test, students are directed to fill out a questionnaire for 20 minutes. In filling out the questionnaire, students were directed to choose one of four options for each statement according to the perception possessed by the student.

Data collection at one school in West Bandung Regency was carried out in one meeting on October 18, 2024. Unlike previous schools, data collection in West Bandung Regency was only carried out for 40 minutes; the first 30 minutes were used to fill out the test, and the next 10 minutes were used to fill out questionnaires. Given that the number of students at this school is only 12, filling out the test is relatively faster. However, when filling out the questionnaire, students were constrained by the lack of mobile devices, this was because data collection was carried out in religion-based schools, so the use of mobile phones was limited. These obstacles are then overcome by using mobile devices that are available alternately so that all students can fill out the Plant Blindness questionnaire.

Similar to other schools, data collection at one school in Indramayu Regency, Indonesia, was carried out in one meeting, namely on October 25, 2024. However, data collection at this school takes longer than at other schools, which is as much as one hour. This is because data collection is carried out after break time, so students need more time to prepare. Nevertheless, data collection continued to run smoothly. In the first 40 minutes, students are directed to fill out the test without looking at references such as books or the internet. This is done to see the level of Plant Blindness in real time. In the next 20 minutes, students are given directions to fill out a questionnaire.

### **Population and Samples**

The population of this study is three schools in West Java, namely one school in the city of Bandung, one school in West Bandung Regency, and one school in Indramayu Regency. Of the three schools, one class was taken as a research sample using convenience sampling, or a sampling technique carried out based on sample availability (Rinaldi et al., 2020). Overall, the number of samples selected in this study is 83 students consisting of 36 students from one school in the city of Bandung with details of 30 female students and 6 male students, 12 students from one school in West Bandung Regency, Indonesia with details of 5 female students and 7 male students, and 35 students from one school in Indramayu Regency, Indonesia with details of 25 female students and 10 male students.

### **Instrument**

The instruments used in this study are non-test instruments in the form of questionnaires and test instruments in the form of question items. The questionnaire instrument was used to see students' perceptions of their awareness of plants. Meanwhile, the test item instrument was used to see the level of plant blindness of students. The scores on the test and questionnaire indicate the students' level of plant awareness (inversely proportional to plant blindness). High scores on the test and questionnaire indicate high student plant awareness and low plant blindness, while low scores indicate low plant awareness and high plant blindness.

The plant awareness test was prepared based on aspects of plant awareness, namely attention, attitude, knowledge, and relative interest. Each aspect has a different number of questions. In addition, the plants used in this test are plants that are easily found in the areas of Bandung City, West Bandung Regency, and Indramayu Regency, Indonesia. Although they are not native plants, the plants shown on the test can be found easily in these areas. The plant awareness test can be seen in full in the supplementary material.

The Plant Awareness questionnaire instrument used in this project is a questionnaire (Parsley et al., 2022) namely the Plant Awareness Disparity Index (PAD-I). This questionnaire contains 25 statements divided into four aspects and six indicators. The four aspects are Attention, Attitude, Knowledge, and Relative Interest. These four aspects are further specified into six indicators. In the aspect of Attention, Parsley et al. (2022) it is attention toward plants. The attitude aspect is specified into Positive Affect toward Plants and Caring for or Investment in Plants. In the aspect of knowledge, it is specified as the necessity of plants/importance of plants. Meanwhile, in the aspect of relative interest, it is specified as Plants Better than Animals and Animals Better than Plants (Parsley et al., 2022).

### **Procedure**

The project implementation stage includes the data collection process and the data inventory process. The data collection process is carried out once for each instrument in each school. This is

because the method used is descriptive-cross-sectional, namely, data collection without any variable manipulation. In this project, data collection was carried out in three schools in West Java, namely one school in the city of Bandung, one school in West Bandung Regency, and one school in Indramayu Regency, Indonesia. Each school is selected for one class using convenience sampling, or sampling according to the school's willingness.

In total, there are 83 students from three schools who are sampled in this project. These 83 students consist of 36 students from one school in the city of Bandung with details of 30 female students and 6 male students, 12 students from one school in West Bandung Regency with details of 5 female students and 7 male students, and 35 students from one school in Indramayu Regency, Indonesia with details of 25 female students and 10 male students.

After data collection, an inventory of data is carried out. Data inventory is carried out by categorizing the results of questionnaires and tests based on the school of origin. This is done to facilitate data processing. The first data processing was to convert scores into scores on each questionnaire and test result for each student. This value will then be processed using descriptive and inferential statistics. This is done so that conclusions can be drawn from the data that has been obtained.

### **Data Analysis Techniques**

The reporting stage in this project includes data processing activities. Based on the research question, the main data processing carried out is the processing using the mean difference test. This was done to see if there was a significant difference in the level of Plant Blindness between the three schools. This average difference test was also carried out to see if there was a difference between male and female students in each school.

The type of average difference test used depends on the data conditions. If it meets the prerequisite test, then the test used to see the difference between the three schools and male and female students is the two-way ANOVA. However, if it does not meet the prerequisite test, the Kruskal-Wallis test is used to see the difference between the three schools. To see the difference in the level of Plant Blindness between male and female students, the Mann-Whitney test was carried out as a continuation of the Kruskal-Wallis test.

The next data processing is a correlational test. This correlational test was carried out to see the relationship between the test results and the Plant Blindness questionnaire. This is to find out whether students who have high test scores will also have high questionnaire results. The test carried out is the Pearson test if the data meets the prerequisite test, but if it does not meet the test, the test carried out is the Spearman test. These two tests measure the strength or weakness of the relationship and the direction of the relationship, respectively.

## **RESULTS AND DISCUSSION**

### **Implementation of Plant Blindness Data Collection**

Plant Blindness data for high school students was taken from three schools in West Java. Each of the schools took one class as a research sample. This is done to facilitate during plant blindness data collection. One school in the city of Bandung was represented by 36 students, consisting of 30 female students and 6 male students. In addition, one school in West Bandung Regency was represented by 12 students, consisting of 5 female students and 7 male students. Meanwhile, one school in Indramayu Regency, Indonesia, is represented by 35 students, divided into 25 female students and 10 male students. Each student who participated in the study took two types of instruments, namely tests and non-tests. As previously described, the test was structured based on aspects of plant awareness, while the questionnaire used was the result of the PAD-I translation compiled by Parsley et al. (2022). In its implementation, several data points at one time, by the research design.

### **RQ 1: What is the level of plant blindness in three schools in West Java?**

After the Plant Awareness data was obtained, a descriptive analysis was carried out. This analysis is carried out on scores that have been converted into grades. The analysis was carried out using the SPSS program to facilitate the analysis process. Some of the analyses carried out are looking at the mean, maximum and minimum values, standard deviations, and medians of test and questionnaire data. The following are the results of a descriptive analysis using SPSS.

#### **Table 1.**

Descriptive Statistical Analysis of Plant Awareness Test Data and Questionnaire

	Plant Awareness Test			Plant Awareness Questionnaire		
	Bandung City	West Bandung Regency	Indramayu Regency	Bandung City	West Bandung Regency	Indramayu Regency
Mean	63.69	44.33	44.74	76.89	69.20	73.09
Median	60.00	43.50	40.00	77.50	77.00	77.00
SD	16.04	11.07	17.09	7.39	7.41	12.14
Min	33.00	20.00	7.00	59.00	62.00	35.00
Max	93.00	60.00	73.00	95.00	86.00	91.00

Based on the results of the descriptive analysis, there is a difference between the levels of Plant Awareness of high school students in three schools in West Java. Judging from the test results, students in one of the schools in the city of Bandung had the highest level of Plant Awareness compared to the other two schools. The average test score of students in the city of Bandung shows a score of 63.69. In addition, students in West Bandung Regency showed an average score of 44.33 while students in Indramayu Regency had an average score of 44.74. These results show that students in the city of Bandung have high plant awareness, while the other two schools still have low levels of plant awareness. The high rate of plant awareness can certainly provide benefits for students. The high level of plant awareness can make it easier for students to understand biological concepts, especially in plant-related concepts (Uno, 2009).

The results of this study show that students who live in urban environments (Bandung City) have a higher rate of plant awareness. These results are inversely proportional to some studies, that students living in rural environments interact more with plants compared to students living in urban environments (et al., 2018) , so they have better plant knowledge (Eyssartier et al., 2017). However, these results show alignment with research conducted by Frick et al. (1995) which stated that students living in rural environments have lower knowledge compared to urban students. This result can certainly be influenced by several factors, including the social life of students. Students with a good social life and easy access to knowledge can increase students' interest in plant diversity (Stahl et al., 2021).

Like the test results, the results of the Plant Awareness questionnaire also show different results in each school. In the results of the questionnaire, students in the city of Bandung showed the highest score, which was 76.89. The results of the questionnaire on students in West Bandung Regency showed a result of 69.20, and students in Indramayu Regency showed a result of 73.09. Based on these results, the level of Plant Awareness seen through the questionnaire was not too different. However, it was found that students in the city of Bandung had the highest level of Plant Awareness compared to the other two schools.

The median of both the test and questionnaire data show different values. The test results of Bandung City students showed a score of 60, Bandung Regency students showed a score of 43.50, while Indramayu Regency students showed a score of 40. Meanwhile, the median of the questionnaire results shows some similarities. In Bandung city, students, the median score is 77.50, while students in West Bandung Regency and Indramayu Regency show a median score of 77. This shows that the questionnaire values have a similar distribution.

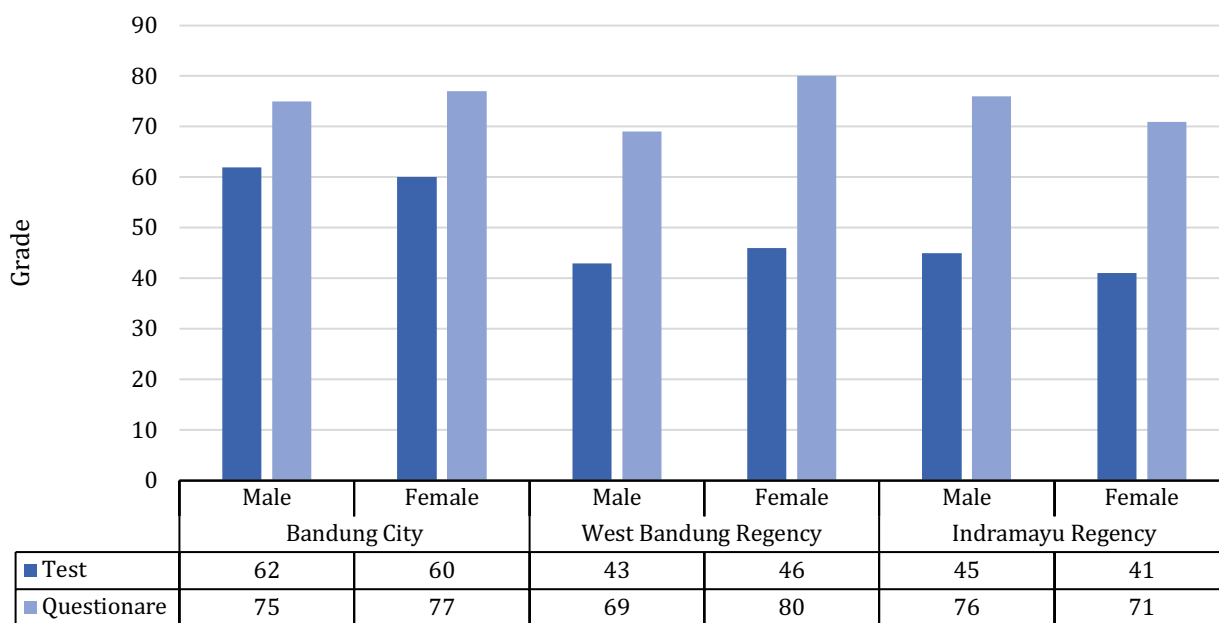
Standard deviation describes the large or small variation in the distribution of data in a data set. The standard deviation results in the Bandung City student test were 16.04, and the mean was 63.69. These results show that the data have considerable variation around the mean value of 63. In West Bandung Regency, the standard deviation of the test is 11.07 with a mean of 44.33, so it is interpreted that the distribution of data is quite large. Meanwhile, Indramayu Regency students have a standard deviation value of 17.09 with a mean of 44.74, so it can be concluded that the test data of Indramayu Regency students has the largest distribution compared to other data distributions.

There is a difference between the standard deviation of the test and the questionnaire. In Bandung City, the standard deviation from the questionnaire data is 7.39 with a mean of 76.89, so it is concluded that the data tends to be concentrated around the average. In addition, students in West Bandung Regency have a standard deviation of 7.41 with a mean of 69.20, so the conclusion obtained is like that of Bandung City students, namely, the data is more concentrated around the average. Meanwhile, students in Indramayu Regency have the highest standard deviation compared to the other two schools, namely 12.14 with a mean of 73.09. The results show that the distribution of student questionnaire data

in Indramayu Regency has a large distribution of data.

In addition to mean, median, and standard deviation, minimum and maximum value analysis is also carried out. Bandung City students have a minimum score of 33 and a maximum of 93 on the test data and a minimum of 59 and a maximum of 95 on the questionnaire. In addition, it was also found that West Bandung Regency students had a minimum score of 20 and a maximum score of 60 on the test and a minimum of 62 and a maximum of 86 on the questionnaire, while Indramayu Regency students had a minimum score of 7 and a maximum of 73 on the test and a minimum of 35 and a maximum of 91 on the questionnaire results. The minimum and maximum scores have a considerable distance, which shows that the level of Plant Awareness of students in each school is different.

In addition to analyzing the overall results, an analysis of the results was also carried out by gender separation per school. This was done to see if there was a difference between the results of female students and male students. The analysis of the results was also carried out to see if the learning carried out in the classroom by the teachers at each school had an equal effect on both female and male students. The separation of gender analysis is based on research that states that women have a more positive and active perception of plants compared to men. This can be due to evolutionary pressures that have encouraged the role of women in the collection of fruits or plants since prehistoric times (Krasnowa et al., 2009). The following are the results of the per-gender analysis.



**Figure 1.** The results of the tests and surveys of students in three schools in West Java by gender.

Based on the results of the analysis, there was a difference between the average results of the test and questionnaire in female and male students. Although there are differences, the difference is not too far or called significant. For example, the test results of male and female students in the city of Bandung differ by only 2 points. The same thing happened to students in West Bandung Regency who only differed by 3 points in the test results. There is a considerable difference in the test results of female and male students in Indramayu Regency, which is 4 points.

In addition to the test results, the questionnaire results also showed a not-too-big difference. In students in the city of Bandung, male students and female students are only 2 points apart. Meanwhile, students in Indramayu Regency have a 5-point gap between female students and male students. In contrast to the two, students in West Bandung Regency have a considerable difference, which is 11 points. On average, female students had a higher perception of their plant awareness and a lower perception of their Plant Blindness level.

**RQ 2: What is the difference in the level of plant awareness between the three schools in West Java?**

After the descriptive analysis, the next analysis is the mean difference test. The mean difference test is carried out to see the difference between the averages in the data. Given that the data obtained has no relationship or stands alone, the mean difference test used is an independent mean difference

test. To find out the differences in the three schools and between male and female students, a two-way test of ANOVA was carried out. However, to carry out the test, it is necessary to carry out a prerequisite test first. The following are the prerequisite tests from the plant awareness test data and questionnaire.

**Table 2**

Test Data Prerequisites: Test and Questionnaire

Prerequisite Test	Test			Questionnaire		
	Bandung	West Bandung Regency	Indramayu Regency	Bandung	West Bandung Regency	Indramayu Regency
Normality Test (Shapiro-Wilk)	0.186	0.228	0.056	1.000	0.417	0.000
Homogeneity Test (Levene Test)		0.116			0.276	

The normality test and homogeneity test were carried out as prerequisite tests. Data is said to have a normal distribution if the significance value is more than 0.05 ( $p > 0.05$ ). Like the normality test, data is said to have a homogeneous variance if it has a significance value of more than 0.05 ( $p > 0.05$ ). Based on the normality test, it was found that the three schools had a normal distribution of data on the test data. Meanwhile, in the questionnaire data, it was found that the data of students in Indramayu Regency was less than 0.05 ( $0.000 < 0.05$ ,  $p < 0.05$ ) so it was declared not normally distributed. In the homogeneity test, it was found that the significance value for the test data was 0.116 ( $p > 0.05$ ), and in the questionnaire data, the significance value was 0.276 ( $p > 0.05$ ). The results show that the variances of the two data are homogeneous. Due to the existence of one abnormal data point, a nonparametric test is used, or a test that does not require a prerequisite test.

As mentioned earlier, a two-way test of ANOVA is carried out if the data meets the prerequisite tests. However, after the prerequisite test was carried out, there was one abnormal data so a nonparametric test was used. The nonparametric test used to see the difference in the level of plant awareness from the three schools was the Kruskal-Wallis test. Meanwhile, to compare the level of Plant awareness between male and female students, the Mann-Whitney test was carried out.

The hypothesis and results of the Kruskal-Wallis test are as follows:

- H0 : There was no significant difference in the level of plant awareness in the three schools in West Java  
H1 : There was a significant difference in the level of plant awareness in three schools in West Java

**Table 3.**

Kruskal Wallis Test

Data	Significance Value
Plant Awareness Test	0,000
Plant Awareness Questionnaire	0,464

Based on the results of the Kruskal-Wallis mean difference test, it was found that the test data had a significance value of 0.000 ( $p < 0.05$ ). The significance value of less than 0.05 shows that there is a significant difference between the three schools in the test data. This result can be caused by differences in teaching and learning methods in each school. In contrast to the test results, the significance value in the questionnaire data showed a result of 0.464 or greater than 0.05 ( $p > 0.05$ ). The results showed that students had relatively similar perceptions of Plant Blindness. This result strengthens the results of descriptive statistical analysis, which is found to be an average value that is not too far away.

Based on the results of interviews with teachers, it was found that each school has its way of teaching the topic of plants. In one school in the city of Bandung, the teacher stated that learning, especially diverse material, was carried out by learning outside the classroom while analyzing vegetation. The learning that was compiled also showed that the learning process was carried out with a constructivist approach. The complexity of the learning process provides good results, as evidenced by the highest level of plant awareness measured through test results and questionnaires.

The other two schools carry out a learning process that combines learning outside the classroom and inside the classroom. However, unlike schools in the city of Bandung, these two schools only conduct learning by observing biodiversity in the surrounding environment without measuring diversity through vegetation analysis. The existence of different learning processes prepared by teachers in each

school can affect the level of plant blindness of students. These results show that there is a harmony with research conducted by Nazar (2024) learning and habituation provided by teachers can affect students' attitudes toward plants.

In addition to the Kruskal-Wallis average difference test, the Mann-Whitney test was also carried out. This test was carried out to see the difference between female and male students in the test results and the questionnaire. The results of this test can be an overview of the distribution of plant awareness levels in the same sample. The following are the hypotheses and results of Mann-Whitney's test for each school.

H0 : There was no significant difference in the level of plant awareness in female and male students in three schools in West Java

H1 : There is a significant difference in the level of plant awareness between female and male students in three schools in West Java.

**Table 4.**  
Mann-Whitney Test Results, Test Data, and Questionnaire

	Bandung	Significance Value	
		West Bandung Regency	Indramayu Regency
Test	0,799	0,684	0,476
Questionnaire Data	0,671	0,008	0,044

In the Mann-Whitney test, data is said to be significantly different if the significance value is less than 0.05 ( $p < 0.05$ ). Based on the results of the Mann-Whitney test, it was found that there was no difference between female students and male students in the test and questionnaire data in one school in the city of Bandung. This result was stated by a significance value of 0.799 ( $p > 0.05$ ) in the test data and 0.671 ( $p > 0.05$ ) in the questionnaire data. Similar to students in the city of Bandung, students in Indramayu Regency and West Bandung Regency showed no significant difference between female students and male students in the test data. This result is shown by a significance value of 0.684 ( $p > 0.05$ ) in West Bandung Regency and 0.476 ( $p > 0.05$ ) in Indramayu Regency. These results show that there is an alignment with the research of Putriningtyas et al. (2022), which revealed that students' thinking skills are not influenced by gender. The results of other studies revealed that gender and student learning outcomes were not significantly related (Amintarti et al., 2018).

In contrast to the test data results, the questionnaire data of female and male students in West Bandung Regency and Indramayu Regency showed significant differences. The results were expressed through the significance value, which was 0.044 ( $p < 0.05$ ) in Indramayu Regency and 0.008 ( $p < 0.05$ ) in students in West Bandung Regency. The existence of these differences is in line with the findings stated through a descriptive analysis of female and male student data in three schools in West Java. This result is inversely proportional to the research conducted Zubaidah et al. (2018) which states that gender does not affect students' thinking ability. Although it is not directly related in terms of topic, the results of this study can still be used to compare research results.

### **RQ 3: What is the relationship between the test results and the plant awareness questionnaire of students in three schools in West Java?**

In addition to analyzing the average test results and student questionnaires in three schools, an analysis of the relationship between test results and student questionnaires in three schools was also carried out. This analysis was carried out to see if students who had a high level of plant awareness also had a high perception of plant awareness. This relationship analysis was carried out using the Spearman Test, given that the data did not meet the prerequisite tests. The following are the hypotheses and results of the Spearman test.

H0: There was no significant association between plant awareness test results and questionnaires in three schools in West Java

H1: There was a significant association between plant awareness test results and questionnaires in three schools in West Java

Data is said to be related to other data if the significance value is less than 0.05 ( $p < 0.05$ ). Based on the results of the analysis, it was found that there was a significant relationship between the test results and the plant blindness questionnaire. The relationship found had a value of 0.288, which was

included in the sufficient category. Based on the analysis, it was stated that hypothesis H0 was rejected and H1 was accepted, or there was a relationship between the test results and the plant awareness questionnaire of students in three schools in West Java. This result means that students who have a high level of plant awareness have a perception of a high level of plant awareness, and vice versa.

**Table 5.**

Correlation Test Results and Questionnaire Results of Three Schools in West Java

Data	Test	Questionnaire
<b>Test</b>	Correlation Coefficient	1.000
	Sig. (2-tailed)	-
<b>Questionnaire</b>	Correlation Coefficient	0.288**
	Sig. (2-tailed)	0.008

The results of this relationship analysis show alignment with the results of research conducted by Pany et al. (2022). In the study, it was stated that students who have a high interest in plants have knowledge of plants as well. These results illustrate similarities with the results of relationship analysis. In the results of this analysis, students who have a low level of plant blindness also have a low perception of plant blindness. These results also show alignment with research conducted by Kubiato et al. (2021) which states that students who have a positive attitude towards plants have factual knowledge of plants. Not only towards plants, but this positive attitude is also related to disciplines closely related to plants, such as zoology, ecology, and evolution.

#### **RQ4: What are the reflections and follow-up plan on this study?**

In this project, several things need to be reflected during data collection and data processing. In the data collection or implementation stage, the selected population is one school in three different cities. This is what makes this project a shortcoming. The lack of similarity from the population obtained means the discussion can only be carried out separately, limiting the range of generalizations. As a follow-up plan, it is necessary to collect more data in each district and city in West Java so that it becomes one population of high school students in West Java. As an option, data collection can be carried out focused on one city, such as the city of Bandung, so that it becomes one population of high school students in Bandung City.

Another follow-up plan is the use of more diverse research instruments. In this project, two main instruments were used, namely a test instrument prepared based on the plant awareness indicator and a PAD-I questionnaire, both of which were compiled by Parsley et al. (2022). The test instrument acts as a measure of the level of plant awareness, while the questionnaire acts as a tool to see students' perception of the plant awareness they have. In advanced research, the research instrument can be varied more. For example, further research can use the plant awareness questionnaire instrument with plant literacy instruments. Another option is that researchers can use a Plant awareness test instrument with a knowledge test about invasive plants. The use of two or more instruments is expected to reveal the relationships between the many factors that cause plant blindness.

#### **CONCLUSION**

The results of the analysis revealed several findings. The results of the test and questionnaire showed that students from one of the schools in the city of Bandung had the highest level of plant awareness compared to students in one school in West Bandung Regency and Indramayu Regency. Based on the analysis of the average difference, it was found that there was a significant difference in the results of the plant awareness test between three schools in West Java. However, the results of the plant awareness questionnaire did not find a significant difference. The results of the correlational analysis revealed that a relationship was found between the test results and the plant awareness questionnaire, meaning that students who had a low level of plant awareness had a low perception of plant awareness as well. This research is expected to be a reference for teachers in designing learning, such as designing teaching modules, learning materials, to choosing learning models. In the next study, the addition of research samples can be done, considering that the samples in this study are limited so the addition of samples will provide a broader generalization. In addition, further research can expand the scope of the research location, such as in other cities in West Java and other provinces in Indonesia so that the results of research related to plant blindness in Indonesia are increasingly abundant. In

addition, other instruments can be used as an addition such as plant literacy instruments and so on so that the relationship can be seen.

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