

# IMPLEMENTATION OF ECOPRINT IN P5 PROJECT AS AN EFFORT TO IMPROVE CIVIC SKILLS IN BINA JAYA BANGUNTAPAN JUNIOR HIGH SCHOOL STUDENTS

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## Abstract

This research aims to evaluate the effectiveness of the ECOPRINT program and PROJECT P5 in improving citizenship skills (CIVIC SKILLS) in Bina Jaya Banguntapan Middle School students. Data were collected and analyzed using various statistical techniques, including probability plot test, scatter plot test, ANOVA analysis, regression analysis, Spearman correlation, Kaiser-Meyer-Olkin (KMO) analysis and Bartlett's Test, anti-image matrix, communalities, total variance, components resulting from factor extraction, component matrices, and multicollinearity evaluation. The results of the analysis show that the probability plot test shows that the data follows a normal distribution pattern, while the scatter plot test does not show a clear pattern or trend between the ECOPRINT, PROJECT P5, and CIVIC SKILLS variables. ANOVA analysis revealed that the two independent variables, ECOPRINT and PROJECT P5, simultaneously had a significant effect on CIVIC SKILLS ( $F = 45.361$ ,  $p = 0.000$ ), while regression analysis showed that both ECOPRINT ( $\beta = 0.366$ ,  $p = 0.035$ ) and PROJECT P5 ( $\beta = 0.735$ ,  $p = 0.000$ ) has a significant influence on CIVIC SKILLS. Spearman correlation shows a positive and significant relationship between ECOPRINT and PROJECT P5 ( $\rho = 0.418$ ,  $p = 0.021$ ), as well as between ECOPRINT and CIVIC SKILLS ( $\rho = 0.529$ ,  $p = 0.003$ ). KMO analysis showed adequate sample quality (KMO = 0.611), and Bartlett's test showed a significant correlation between the variables ( $p = 0.000$ ). The anti-image matrix shows a significant correlation between the variables. The communalities value shows that most of the variance of each variable can be explained by the extracted factors. Total variance analysis revealed that the first component explained most of the variation in the data (76.030%). The component table shows the significant factor loading values for each variable in the first component. Multicollinearity evaluation shows multicollinearity problems in the second and third dimensions in the regression model. In conclusion, the ECOPRINT program and PROJECT P5 together have a significant effect on improving students' citizenship skills. These findings provide a basis for policy makers and educational practitioners to increase civic awareness and participation among junior high school students.

**Keywords:** Ecoprint, P5 Project, Civic Skills.

## INTRODUCTION

Education is very important for the development of civilization today. Education is one of the factors that is good enough to create better change in the current era of globalization because it can guarantee quality human resources (Rostini et al., 2024). This is because globalization is something that has quite an impact on aspects of human life (Murdiono & Wuryandani, 2021). Education with all its complexity is a conceptual thing that can change many arrangements in the world. Education is not just knowledge, but more than that definition, other things such as

manners, character, values and other things will be found, which are taught and become quite complex challenges and are even mentioned as things that have quite an impact on life (Coffey, 2014; Sunarso, 2006; Zai et al., 2024). Education is quite important for society to build the dynamics of life (Larsson & Bengt, 2023; Zai & Arpanudin, 2023). If we analyze the dynamics that occur in education, the reality that occurs during practice is sometimes quite worrying, this is because many unexpected problems occur. Teachers are a sector that is quite important in terms of guiding students, directing and being an example in terms of attitude, character and guiding students' skills. As mentioned Graham et al., (2020) that teachers with all the experience and teaching qualities are the basic capital that must be possessed.

The concept of education in theory and practice should work well. However, it is often found that many things are not in line between theory and desired practice. The problems that occur are not intentional by any party, but it is analyzed that one thing that needs to be taken into account is that the development of students' thought patterns and actions will be different. So, in school learning, teachers are instructors or leaders for students to shape thinking and behavior (Qizi, 2022). In the learning process, teachers and students are one unit who collaborate with each other in order to create good outcomes, namely improving thinking abilities, skills and even the character that must be created. Apart from that, teachers can provide teaching to students with interaction support (Sattarov et al., 2020). That the interaction between teachers and students is intended for student involvement and activeness (Munna & Kalam, 2021). However, teachers have universal similarities that the development of identity and performance in schools is influenced by changes in national education policy (Beijard, 2019).

Thinking ability is very necessary and in supporting successful learning. Critical thinking is something that is currently quite familiar and discussed by academics because it concerns the knowledge that will be used and disseminated. Critical thinking is not just how to think, but has relevance to knowledge, problem solving, collaborative communication, and problem solving in today's era (Barta et al., 2022). That thinking abilities that are relevant to students' skills are an integral part that must be developed by students. Skills or civic skills are quite important in public affairs. Skills abilities will be very useful because the public, especially students, will easily receive good information which will influence good decision making regarding public affairs (Maiello et al., 2003).

The P5 project or what is called the project to strengthen the profile of Pancasila students is a breakthrough and learning concept that can improve the skills of students who are also citizens which can be called civic skills. The P5 project is an implementation of differentiated learning that can be a forum for developing student skills (Sulistiyaningrum, 2023). That the p5 project implemented in the independent curriculum can become a forum and even a way to create renewal of students' civic skills. Skills abilities also have a good and positive impact on students' participation abilities where students are encouraged to participate in carrying out tasks together (Komalasari, 2012). It is stated that students also have the right to participate as social and political subjects who have rights and responsibilities (Dobozy & Dobozy, 2007).

This research meexplained about the entrepreneurship-based P5 Project, namely improving civic skills in students by utilizing the practice of the P5 Entrepreneurship Ecoprint Project which will be used as skills material that comes from natural resources, namely leaves. This stimulates the enthusiasm of students' skills and thinking abilities in terms of creating images on cloth and making use of the leaves that will be used. Activeness, mutual cooperation, and increasing knowledge are the most important things to create. Ecoprint is considered to be a very trendy activity that can utilize natural materials which will later encourage students to be active in creating a product or work that has values, including the value of mutual cooperation. The value of creativity and skills and economic value (Safitri et al., 2022). Ecoprint is considered to have economic value because ecoprint has a unique motif (Faridatun, 2022). The ecoprint that will be put into practice will produce fabric depicting leaves that will resemble batik with quite a variety of leaf motifs.

This research is based on the importance of students' skills as citizens, called Civic skills, which will be able to determine the skills and interests of each student, and if studied more specifically, this research has the latest regarding the implementation of the P5 Project for entrepreneurship studies which examines the use of ecology or leaves to become student practice materials that are used as scientific work for research. This means that several studies found by researchers tend to focus on P5 objects or ecoprint practices only. In this research, researchers more complexly examine students' skills as citizens who have rights and responsibilities in using education as a forum to develop and become more skilled and can even provide better and more enjoyable participation. In line with what was stated Ashtari & de Lange, 2019; Brunell, (2013) that student skills called civic skills must remain present with many methods to create participation and students can maximize their rights and responsibilities.

## **METHOD**

The method used in this research is quantitative research, where this research is studied scientifically, carried out with a number of samples based on the existing population, which is even referred to as a method that uses mathematical models, theories and hypotheses related to natural phenomena, and is a scientific method. which is because it meets concrete, objective, empirical, measurable, rational and systematic scientific principles (Ahyar et al., 2020).

This research method applies a quantitative approach with a survey design to detail data from 30 students at Bina Jaya Banguntapan Junior High School. Respondents were selected as representatives of the relevant population, with an emphasis on aspects of Ecoprint Implementation in the P5 Project as an Effort to Improve Civic Skills in Bina Jaya Banguntapan Middle School Students. In this research, various analyzes have been carried out to evaluate the relationship between the independent variable, namely participation in the Ecoprint program and the P5 Project, with the dependent variable, namely civic skills, as well as to evaluate the suitability of the data and possible problems in the regression model. The normality test is carried out to ensure that the data used follows a normal distribution pattern. The scatter plot test results show that there is no clear pattern or trend in the relationship

between the independent and dependent variables. ANOVA analysis shows that the two independent variables simultaneously have a significant influence on the dependent variable.

Regression analysis shows that both participation in the Ecoprint program and the P5 Project have a significant influence on the development of citizenship skills. Spearman correlation analysis confirmed the existence of a significant relationship between participation in the Ecoprint program and the P5 Project and citizenship skills. The Kaiser-Meyer-Olkin test and Bartlett's Test of Sphericity show that the data is suitable for factor analysis. The anti-image matrix provides an overview of the relationship between observed variables and the underlying latent variables. Communalities analysis reveals how much variance of each variable can be explained by the extracted factors. Total Variance Explained shows how much variation in the data can be explained by the components resulting from factor extraction. The Component Matrix table describes how strong the relationship is between the observed variables and the components resulting from factor analysis. Finally, the Collinearity Diagnostics Table was used to evaluate the level of multicollinearity between the independent variables in the regression model.

The aim of this research is to use quantitative methods, namely as stated Priadana & Sunarsi, (2014) discover, prove and develop the practice of print as an effort to improve civic skills or citizenship skills of Bina Jaya Banguntapan junior high school students in order to create a work resulting from student participation and activity. That from grade 7 students at Bina Jaya Banguntapan Middle School, researchers were guided to find new data by proving temporary assumptions to developing new information from the results to expand knowledge from the resulting research data.

### Sample and Population

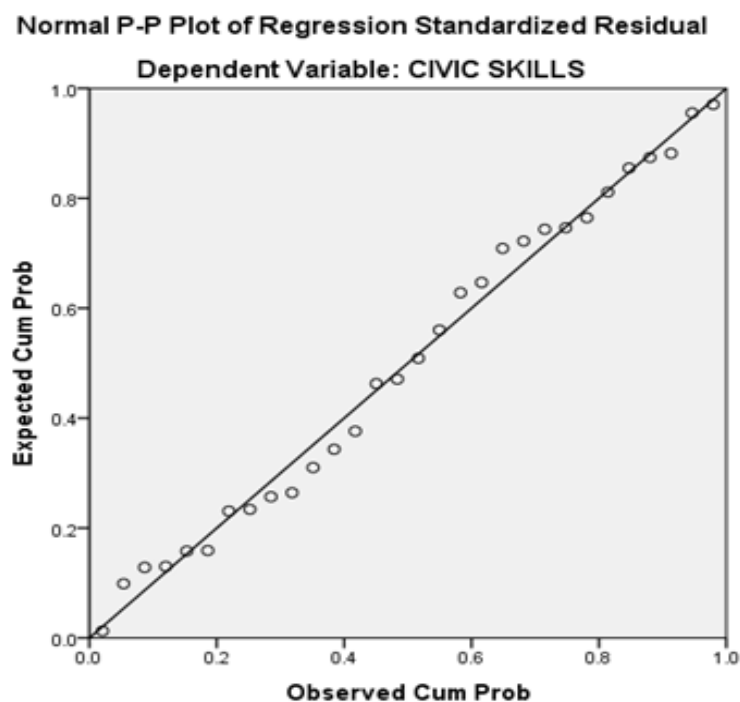
This research was conducted at Bina Jaya Banguntapan Middle School, which is a representation of the research context. This research involved 30 respondents with diverse demographic distributions. In terms of age, two main groups were identified. Of the total respondents, 12 people or 40% were 12 years old, while 18 other people or 60% were 13 years old. In the context of gender, the majority of respondents were male, covering 20 people or around 66.7% of the total sample. Meanwhile, the number of women who participated was 10 people, which made up around 33.3% of all respondents. This data provides a clear picture of the demographics of the respondents involved in this research, allowing for a more in-depth analysis of the research findings and results that may result.

**Table 1: Respondent Demographics**

Demographic Variables	Age	Gender
Number of Respondents	30	30
Respondent's Age		
- 12 years old	40% (12 people)	
- 13 years old	60% (18 people)	
Respondent's Gender		
- Man		66.7% (20 people)
- Woman		33.3% (10 people)

## RESULTS AND DISCUSSION

### Results

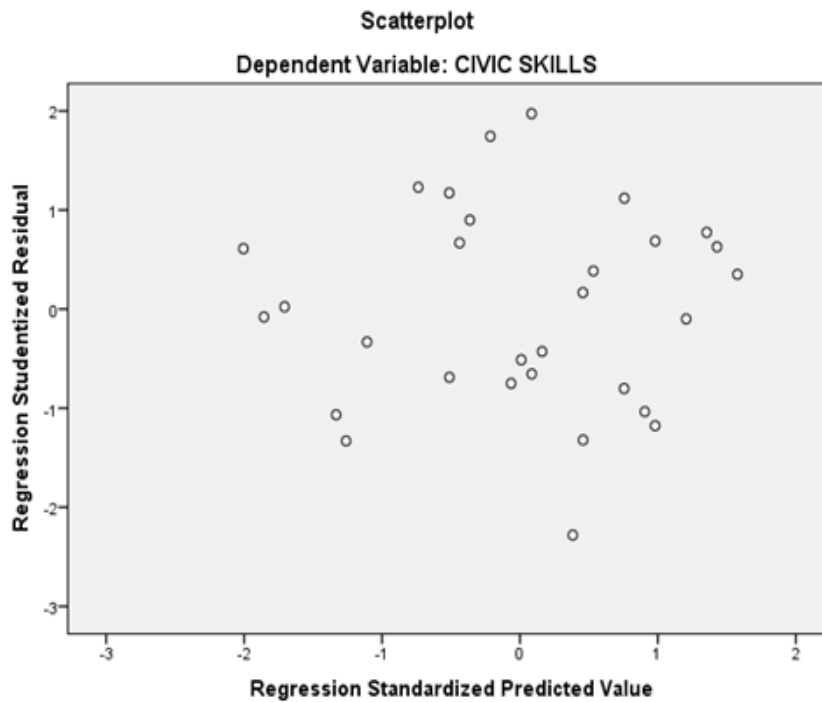


**Figure 1: Probability Plot Test**

After conducting a probability plot normality test on the collected data, it was found that the data distribution consistently followed a normal distribution pattern. The results of this analysis show that the data used in implementing ecoprint in the P5 project to improve civic skills in Bina Jaya Banguntapan Middle School students have fulfilled the statistical assumptions underlying the analysis carried out.

The principle of the probability plot test confirms that data points tend to lie close to the diagonal line on a normal probability plot, which indicates the conformity of the data to a normal distribution. These findings provide strong empirical support for the validity and reliability of the data used in the implementation of this ecoprint. Thus, this conclusion provides a solid foundation for the analysis carried out in implementing ecoprint to improve civic skills in Bina Jaya Banguntapan Middle School students.

By fulfilling these statistical assumptions, this implementation can be relied upon to provide a deeper understanding of the effectiveness of ecoprint in improving environmental citizenship skills in middle school students, which can provide valuable insights for curriculum development and learning practices that focus on social and environmental empowerment.



**Figure 2: Top of Form Scatter Plot Test**

After conducting a scatter plot test on data collected from the implementation of ecoprint in the P5 project to improve civic skills in Bina Jaya Banguntapan Middle School students, the results of the analysis showed that there was no clear or regular pattern that could be identified in the graph. The data points are randomly distributed along the Y-axis range, both above and below 0, with no discernible trend.

In the context of this implementation, the scatter plot test results provide an important picture of the data structure used. A clear pattern or trend in the scatter plot will indicate a consistent relationship between the independent (Ecoprint, Project P5) and dependent (Civic Skills) variables. However, in the absence of a discernible pattern, this indicates that the variation in the data is not related to specific values of the ecoprint variable. In other words, the data tends to be spread evenly along the Y-axis, without being significantly influenced by certain factors.

These findings have important implications for the interpretation of implementation results. In the absence of evidence of heteroscedasticity, the statistical analysis used can be considered more reliable and valid, because the assumption of homoscedasticity can be maintained. This allows this implementation to produce stronger and more reliable conclusions in the context of improving civic skills through ecoprint exploitation.

Thus, the results of this scatter plot test not only provide insight into the characteristics of the data used, but also provide additional confidence in the validity of the analysis carried out in this implementation.

**Table 2: ANOVA analysis of the simultaneous influence of ECOPRINT and PROJECT P5 on Citizenship Skills (CIVIC SKILLS)**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	701,800	2	350,900	45,361	,000b
	Residual	208,867	27	7,736		
	Total	910.667	29			
a. Dependent Variable: CIVIC SKILLS						
b. Predictors: (Constant), PROJECT P5, ECOPRINT						

ANOVA (Analysis of Variance) analysis has been carried out to evaluate the simultaneous influence of the independent variables, namely "ECOPRINT" and "PROJECT P5", on the dependent variable "CIVIC SKILLS". The results of the analysis show that the overall regression model is significant, with a calculated F value of 45,361 and a significance value (Sig.) of 0.000. This indicates that there is at least one independent variable that significantly influences the dependent variable. However, to make it clearer whether the two independent variables simultaneously have a significant influence on the dependent variable, attention is drawn to the significance value (Sig.) of the ANOVA results. In this context, the Sig value. less than 0.05, indicating that simultaneously the two independent variables, namely "ECOPRINT" and "PROJECT P5", have a significant influence on the dependent variable "CIVIC SKILLS". In other words, participation in the ECOPRINT program and PROJECT P5 together contribute significantly to the development of citizenship skills. In making decisions, a significance value lower than the predetermined threshold (0.05) indicates that we have sufficient evidence to reject the null hypothesis which states that there is no influence of the independent variable on the dependent variable. Thus, based on this analysis, it can be concluded that the two independent variables, namely participation in the ECOPRINT program and PROJECT P5, together have a significant influence on the development of citizenship skills as measured by the dependent variable "CIVIC SKILLS". These findings provide valuable insights for policy designers and educational practitioners to emphasize the importance of such programs in promoting active civic awareness and participation among individuals.

**Table 3: Regression Coefficient and Significance of the Effect of ECOPRINT and PROJECT P5 on Citizenship Skills (CIVIC SKILLS)**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	-3,023	5,781		-.523	,605
	ECOPRINT	,366	,164	,232	2,226	,035
	PROJECT P5	,735	.103	,746	7,158	,000
a. Dependent Variable: CIVIC SKILLS						

Regression analysis has been carried out to evaluate the influence of the independent variables, namely "ECOPRINT" and "PROJECT P5", on the dependent variable "CIVIC SKILLS". The results of the analysis show that these two independent variables have a significant influence on "CIVIC SKILLS". The variable "ECOPRINT" has a regression coefficient of 0.366, with a calculated t value of 2.226, and a significance value (Sig.) of 0.035. These results indicate that participation in the ECOPRINT program has a significant influence on the development of

citizenship skills. A significance value of less than 0.05 confirms that the relationship between the variables "ECOPRINT" and "CIVIC SKILLS" is strong enough to be accepted statistically. Furthermore, the variable "PROJECT P5" also shows a significant influence on "CIVIC SKILLS", with a regression coefficient of 0.735 and a calculated t value of 7.158, as well as a significance value (Sig.) of 0.000 which is very small. This indicates that participation in the PROJECT P5 program has a stronger influence on the development of citizenship skills compared to ECOPRINT. With a significant calculated t value and a significance value of less than 0.05 for both independent variables, it can be concluded that both ECOPRINT and PROJECT P5 have an individually significant influence on the dependent variable "CIVIC SKILLS". These findings make an important contribution to understanding how programs such as ECOPRINT and PROJECT P5 can shape citizenship skills in individuals. The implication is that parties involved in education and community development can consider further strengthening and expanding such programs in an effort to increase civic awareness and participation among the community.

**Table 4: Spearman Correlation between ECOPRINT, P5 PROJECT, and Citizenship Skills (CIVIC SKILLS)**

			ECOPRINT	PROJECT P5	CIVIC SKILLS
Spearman's rho	ECOPRINT	Correlation Coefficient	1,000	.418*	,529**
		Sig. (2-tailed)	.	.021	,003
		N	30	30	30
	PROJECT P5	Correlation Coefficient	.418*	1,000	,786**
		Sig. (2-tailed)	.021	.	,000
		N	30	30	30
	CIVIC SKILLS	Correlation Coefficient	,529**	,786**	1,000
		Sig. (2-tailed)	,003	,000	.
		N	30	30	30
*. Correlation is significant at the 0.05 level (2-tailed).					
**. Correlation is significant at the 0.01 level (2-tailed).					

This research aims to identify the relationship between the variables ECOPRINT, PROJECT P5, and citizenship skills (CIVIC SKILLS) in the context of a study. Using Spearman correlation analysis, the researchers collected data from 30 respondents for each variable considered. The results of the analysis show that there is a significant relationship between ECOPRINT and PROJECT P5, with a correlation coefficient of 0.418, and a p-value of 0.021. This shows that participation in the ECOPRINT program is positively correlated with participation in PROJECT P5. Likewise, there is a strong and significant relationship between ECOPRINT and CIVIC SKILLS, with a correlation coefficient of 0.529, and a p-value of 0.003. These results confirm that individuals involved in the ECOPRINT program tend to have higher citizenship skills. Furthermore, the analysis also revealed a very strong relationship between PROJECT P5 and CIVIC SKILLS, with a correlation coefficient of 0.786, and a highly significant p-value of less than 0.001. These findings indicate that participation in PROJECT P5 is consistently associated with increased citizenship skills. In conclusion, this research provides a deeper understanding of the relationship between participation in programs such as ECOPRINT and PROJECT P5 and the development of citizenship skills. The



implication is that these approaches can be used as effective strategies in increasing civic awareness and involvement in society.

**Table 5: KMO and Bartlett's Test**

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</b>		.611
Bartlett's Test of Sphericity	Approx. Chi-Square	46,650
	df	3
	Sig.	,000

Kaiser-Meyer-Olkin (KMO) analysis and Bartlett's Test of Sphericity are important steps in evaluating data suitability before factor analysis is carried out. The KMO results show that the sample adequacy measurement value (Sampling Adequacy) is 0.611, which is above the minimum threshold of 0.5. This indicates that the data used is of sufficient quality to carry out factor analysis. Meanwhile, the results of the Bartlett's Test show that the estimated Chi-Square value is 46,650 with 3 degrees of freedom (df), and a significance value (Sig.) of 0.000. This very low significance value indicates that there is sufficient evidence to reject the null hypothesis in the Bartlett test, which states that the correlation matrix between these variables is not identical to the identity matrix. In other words, the variables used in the analysis are correlated with each other. These two results provide confidence that the data used is suitable for factor analysis, because the quality of the sample and the ability to extract the factor structure from the data have been proven. As a result, researchers can continue factor analysis to explore patterns and relationships between variables in more depth, thereby providing a more comprehensive understanding of the construct under study.

**Table 6: Anti-image Matrix Analysis: Relationships and Interactions between Variables**

		<b>ECOPRINT</b>	<b>PROJECT P5</b>	<b>CIVIC SKILLS</b>
Anti-image Covariance	ECOPRINT	.662	.028	-.153
	PROJECT P5	.028	.270	-.201
	CIVIC SKILLS	-.153	-.201	.229
Anti-image Correlation	ECOPRINT	.776a	.067	-.394
	PROJECT P5	.067	.589a	-.809
	CIVIC SKILLS	-.394	-.809	.568a
a. Measures of Sampling Adequacy (MSA)				

The Anti-image Matrix is an analytical instrument that provides an in-depth picture of the relationship between observed variables and the underlying latent variables. In this matrix, there are two important types of information: covariance and correlation between the variables, and covariance and correlation between each variable and itself. From the results of the anti-image covariance matrix, it can be seen that the variables ECOPRINT, PROJECT P5, and CIVIC SKILLS have significant covariance with other variables, including themselves. This shows that there is a fairly strong relationship between these variables, as well as between each variable and the underlying latent variable. Meanwhile, from the anti-image correlation matrix, it can be seen that the relationship between variables becomes more defined, because correlation measures the extent to which the relationship is linear and the extent to which the variables can be understood through the underlying latent variables. The results show that each variable has a significant correlation with other variables, as well as with itself, indicating the

diversity of relationships that exist in the dataset. In this context, the significant correlation values between the variables ECOPRINT, PROJECT P5, and CIVIC SKILLS with themselves as well as with other variables, indicate that the data are consistent with the proposed factor model, and are suitable for use in factor analysis. These findings provide confidence that these variables can make a meaningful contribution to understanding the factor structure underlying the constructs studied. As a result, this Anti-image matrix provides a deeper understanding of the interactions and interrelationships between these variables, paving the way for further analyzes that can provide deeper insights into the observed phenomena.

**Table 7: Communalities**

	Initial	Extraction
ECOPRINT	1,000	,571
PROJECT P5	1,000	,818
CIVIC SKILLS	1,000	,892
Extraction Method: Principal Component Analysis.		

The Communalities table displays the initial communalities value and the extraction communalities value for each variable, namely ECOPRINT, P5 PROJECT, and CIVIC SKILLS. The initial value is the communalities value before factor analysis or factor extraction is carried out, while the extraction value is the communalities value after the factors have been extracted from the data. In this analysis method, the communalities value shows how much variance of each variable can be explained by the extracted factors. From the table, it can be seen that the initial communalities value for each variable is 1,000, which indicates that the variable has full variance before factor extraction. However, after extraction using the Principal Component Analysis (PCA) method, the communalities value changed. The extracted communalities value indicates the proportion of the variance of each variable that can be explained by the extracted factors. For ECOPRINT, the extraction communalities value is 0.571, which means 57.1% of the variance of ECOPRINT can be explained by the extracted factors. Likewise, PROJECT P5 has an extraction communalities value of 0.818, indicating that 81.8% of the variance of PROJECT P5 can be explained by the extracted factors. Meanwhile, CIVIC SKILLS has the highest extraction communalities value, namely 0.892, which means that 89.2% of the variance in CIVIC SKILLS can be explained by the extracted factors. This analysis provides a deeper understanding of how much each variable contributes to the factors extracted from the data. Thus, the results of factor extraction help in understanding the extent to which these variables influence the factor structure underlying the construct under study, as well as providing a strong basis for further analysis to be carried out.

**Table 8: Analysis of Total Variance Explained by Components of Factor Extraction Results: Implications for Factor Structure in Research**

Components	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,281	76,030	76,030	2,281	76,030	76,030
2	,584	19,480	95,509			
3	.135	4,491	100,000			
Extraction Method: Principal Component Analysis.						

The Total Variance Explained table is an important instrument in factor analysis that provides an overview of how much variation in the data can be explained by the components resulting from factor extraction. This table is divided into two main parts: initial eigenvalues and the sum of squares of extraction loads. The initial eigenvalue describes the total amount of variation in the data before factor extraction, while the sum of the squares of the extraction loadings describes how much variation can be explained by each component resulting from factor extraction. From the table results, it can be seen that factor analysis produces three components. The first component has the highest eigenvalue of 2.281, which explains around 76.030% of the total variance. This shows that the first component is able to explain most of the variation in the data. Meanwhile, the second component has an eigenvalue of 0.584, which explains around 19,480% of the total variance.

The third component has a lower eigenvalue, namely 0.135, and only explains around 4.491% of the total variance. When the sum of squared loadings was extracted, the first component remained the main contributor, with a sum of squared loadings of 2.281, which also represented approximately 76.030% of the total variance and 76.030% of the cumulative total variance. This indicates that the first component substantially explains the variation in the data. However, the second and third components are not explained in the table, but it can be assumed that their contribution is smaller compared to the first component. This analysis provides important insights in understanding how well the extracted components of the factors can explain variation in the data. The first component, which has the highest eigenvalue and significant squared loading contribution, is considered the most important component in representing the factor structure underlying the construct under study. While subsequent components provide additional contributions, but with a smaller proportion of the variation in the data. Thus, the results of this analysis help researchers to understand the complex factor structure and provide a solid basis for further interpretation of the observed data.

**Table 9: Component Matrix**

	Components
	1
ECOPRINT	,756
PROJECT P5	,904
CIVIC SKILLS	,944
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

The Component Matrix table is an important tool in factor analysis that provides information about how strong the relationship is between the observed variables and the components extracted from the data. The factor loading values listed in this table indicate how much each variable contributes to the components of the factor analysis results. In this case, these values are obtained through the Principal Component Analysis (PCA) method, with the extraction of one component. From the results of the table, it can be seen that each variable, namely ECOPRINT, PROJECT P5, and CIVIC SKILLS, has a significant factor loading value on the first component. The ECOPRINT variable has a factor loading value of 0.756, indicating a fairly strong positive relationship with the first component. Meanwhile, PROJECT P5 has a

higher factor loading value, namely 0.904, indicating an even stronger relationship with the first component. The CIVIC SKILLS variable shows the highest factor loading value, namely 0.944, indicating a very strong relationship with the first component. These findings reveal that the first component is significantly influenced by all three variables observed in the dataset. High factor loading values confirm that the variables ECOPRINT, PROJECT P5, and CIVIC SKILLS have an important contribution in forming the first component. Thus, the results of this analysis provide a deeper understanding of the relationships between these variables and the components of the factor analysis results, paving the way for further interpretation and a deeper understanding of the factor structure underlying the constructs under study.

**Table 10: Evaluation of Multicollinearity between the Independent Variables ECOPRINT and PROJECT P5 in the Regression Model on Citizenship Skills (CIVIC SKILLS)**

Model	Dimensions	Eigenvalues	Condition Index	Variance Proportions		
				(Constant)	ECOPRINT	PROJECT P5
1	1	2,986	1,000	.00	.00	.00
	2	.010	17,404	.21	.05	.94
	3	.004	27,642	.79	.95	.06

a. Dependent Variable: CIVIC SKILLS

The Collinearity Diagnostics table is an important instrument in regression analysis that helps evaluate the level of multicollinearity between independent variables in a regression model. In this context, the dependent variable studied is CIVIC SKILLS, while the independent variables are ECOPRINT and PROJECT P5.

First of all, the first dimension in the table shows an eigenvalue of 2.986, which indicates that there is no multicollinearity problem in the regression model for this dimension. The index condition of 1,000 also confirms that there is no significant multicollinearity problem. The proportion of variance explained by ECOPRINT and PROJECT P5 in this dimension is zero, indicating that there is no variance explained by the independent variables in the first dimension.

However, the second and third dimensions show significant multicollinearity problems. The very low eigenvalue, namely 0.010 for the second dimension and 0.004 for the third dimension, indicates that there is a multicollinearity problem that needs to be considered. The high index condition, namely 17,404 for the second dimension and 27,642 for the third dimension, also indicates significant multicollinearity. The high proportion of variance for ECOPRINT and PROJECT P5 in the second and third dimensions indicates that most of the variance in these two independent variables is closely related to each other in these dimensions. Thus, the analysis results highlight the importance of addressing multicollinearity issues in regression models. Multicollinearity can affect the stability and interpretation of regression coefficients, as well as interfere with understanding the relationship between independent and dependent variables. Therefore, precautions or countermeasures such as dimensionality reduction or combining strongly correlated variables may be necessary to correct this multicollinearity problem before undertaking further interpretation of the regression results.

## DISCUSSION

This research aims to evaluate the effectiveness of the implementation of ECOPRINT in the P5 Project to improve civic skills in Bina Jaya Banguntapan Middle School students. The results of the analysis show that the data distribution consistently follows a normal distribution pattern, confirming the validity and reliability of the data used in this study. Although the scatter plot test does not reveal a clear pattern or trend, it shows that the variations in the data are not significantly influenced by certain factors, strengthening the validity of the analysis carried out. ANOVA results show that participation in ECOPRINT and Project P5 together have a significant influence on the development of students' citizenship skills. Regression analysis revealed that both ECOPRINT and Project P5 individually made significant contributions to citizenship skills. Spearman correlation findings confirmed the positive relationship between participation in ECOPRINT and Project P5 and citizenship skills. The results of the KMO test and Bartlett's Test provide confidence that the data is suitable for factor analysis, which produces an adequate factor structure for understanding the relationships between variables. The Anti-image Matrix provides a deep understanding of the interactions and relationships between the observed variables. Communalities and total variance analysis explains the contribution of each variable to the factor structure. The Matrix component confirms the contribution of variables to the components of the factor analysis results. Finally, Collinearity Diagnostics identifies multicollinearity issues in regression models, emphasizing the importance of addressing these issues to maintain the stability and interpretability of regression results. Thus, the findings of this study provide a deeper understanding of the effectiveness of ECOPRINT implementation in improving junior high school students' citizenship skills, with important implications for curriculum development and learning practices that focus on social and environmental empowerment.

## CONCLUSION

Research conducted using a quantitative approach and survey design on 30 students at Bina Jaya Banguntapan Junior High School, examined the implementation of Ecoprint in the P5 Project to improve Civic Skills in students, resulting in in-depth conclusions. Data analysis shows strong validity and reliability, with a normal distribution pattern visible in the probability plot test. Although scatter plot tests did not reveal clear trends, ANOVA and regression statistical analyzes confirmed that participation in the Ecoprint program and Project P5 together had a significant influence on the development of students' citizenship skills. The high correlation between these variables strengthens these findings, indicating a positive impact of participation in both programs on the development of citizenship skills. Factor analysis identified three components, where the first component was significantly influenced by the Ecoprint, Project P5, and Civic Skills variables. The results of this research provide an in-depth understanding of the importance of programs such as Ecoprint and Project P5 in strengthening students' citizenship skills. In conclusion, this research makes an important contribution to the development of curriculum and learning practices that focus on social and environmental empowerment in education.

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