



Factors influencing green product purchase of adiwiyata and non-adiwiyata high school students in south jakarta



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ABSTRACT

The global environmental crisis, exacerbated by unsustainable consumption and escalating plastic waste, underscores the urgency of promoting green product purchasing practices. This study investigates the influence of green product knowledge (GPK), green awareness (GA), and green lifestyle (GL) on green product purchasing practices (PPGP) among Adiwiyata and non-Adiwiyata high school students in South Jakarta. Employing a quantitative approach with a survey method, data were collected from 204 students using a combination of essay-based and Likert-scale questionnaires. Multiple linear regression analysis revealed that GPK, GA, and GL jointly had a significant influence on PPGP, explaining 56.07% of the variance for Adiwiyata students and 36.21% for their non-Adiwiyata counterparts. Partially, only GA and GL significantly affected PPGP among Adiwiyata students, whereas only GL was significant for non-Adiwiyata students. GL emerged as the strongest predictor in both groups, with regression coefficients of 0.6436 and 0.5823, respectively. These findings highlight the importance of embedding behavioral components into environmental education by prioritizing green lifestyle development to foster sustainable consumer behavior among high school students.

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INTRODUCTION

The global environmental crisis has become a critical issue of the 21st century. Data from the United Nations Environment Programme shows that the volume of municipal solid waste (MSW) continues to increase and has now exceeded two billion tons per year (UNEP, 2024). Meanwhile, according to the International Union for Conservation of Nature, plastic waste is a significant contributor to environmental pollution, with more than 20 million metric tons polluting the



environment each year (IUCN, 2021). On the other hand, the fact that people's consumption patterns are unsustainable has exacerbated this situation, demanding solutions based on changes in consumer behavior that support sustainability (UNEP, 2024).

This global problem is also reflected in Indonesia, where data from the SIPSN indicates that waste generation from 317 districts and cities reaches 34 million tons per year, with approximately 13 million tons, or 40.26%, remaining unmanaged. Plastic waste is the second-largest type (19.04%), while, based on its source, household waste dominates with a portion of 53.74%. DKI Jakarta ranks fourth among provinces in terms of waste generation, at 3.1 million tons per year, and South Jakarta contributes around 725,000 tons, the third-highest in the capital. The composition of waste in South Jakarta shows plastic as the second largest contributor, namely 22.95% (KLHK, 2024).

This condition shows that the ecological crisis is not only structural, but also rooted in the lack of individual awareness in making consumption decisions. The community is not yet fully aware of the long-term impacts of consuming conventional products that are not environmentally friendly. Educational efforts towards sustainable consumer behavior are necessary, especially during adolescence, as a critical phase in the formation of character and life values, including sustainability values (Addzaky, 2024). Therefore, changing consumer behavior through environmental education is a strategic step to create a generation that is more responsible for the environment.

The concept of green products emerged as a response to this issue. Green products are those that are energy-efficient, recyclable, and have minimal environmental impact (Mensah, 2021). However, to encourage consistent green product purchases, an adequate understanding of green products (green product knowledge), awareness of ecological issues (green awareness), and a lifestyle that supports the principles of sustainability (green lifestyle) are necessary. These three aspects are theoretically believed to contribute to the formation of more ecologically responsible purchasing practices (Yuliana & Pantawis, 2022; Du et al., 2018; Chwialkowska, 2019). Thus, environment-based education is an important medium to form these three variables from school age.

In this study, green product knowledge (GPK) reflects consumers understanding of the attributes, benefits, and value of green products. This knowledge becomes the basis for individuals to evaluate the environmental impact of a product before making a purchase decision. Without an adequate understanding, consumers are less likely to consider ecological aspects in their consumption preferences (Ojiaku et al., 2018).

On the other hand, green awareness (GA) refers to an individuals awareness of environmental problems caused by human activities and the importance of involvement in conservation efforts (Du et al., 2018). This awareness is not only cognitive, but also includes affective and conative aspects that encourage individuals to act ecologically, including in choosing the products they buy (Ahmadi & Mahargyani, 2024).

Meanwhile, green lifestyle (GL) is a concrete embodiment of environmental values and knowledge in daily life (Chwialkowska, 2019). This lifestyle includes habits such as reducing waste, saving energy, using environmentally friendly transportation, and choosing sustainable products. Individuals with high awareness and implementation of green lifestyle tend to be more consistent in making eco-friendly purchases (Pramesti et al., 2022).

Based on this, the variables GPK, GA, and GL not only stand alone, but interact with each other in forming responsible consumptive behavior. Knowledge becomes the basis, awareness becomes a trigger, and lifestyle becomes a manifestation in real actions. Therefore, it is important to examine these three variables in influencing green product purchasing practices (PPGP).

One of the environmental education programs in Indonesia is the Adiwiyata Program, which aims to form the character of environmental care in educational units. This program has four

components, namely environmentally friendly school policies, environment-based curriculum, participatory activities, and management of environmentally friendly infrastructure facilities (Budiaman et al., 2023). However, there are still limited studies that explore how these three variables affect the practice of purchasing green products in Adiwiyata and non-Adiwiyata high school students in South Jakarta.

Previous studies have demonstrated the influence of factors such as environmental consciousness, green product knowledge, and green lifestyle on consumers' purchasing decisions of environmentally friendly products (Ayuningtyas & Ruslim, 2021; Sionika et al., 2023; Harahap et al., 2018; Genoveva & Syahrivar, 2020). However, most of these studies focused on general consumers, university students, or millennials, and have not considered the formal environmental education context, such as the Adiwiyata school program. This study offers novelty by exploring green product purchasing practices among senior high school students through a comparative approach between Adiwiyata and non-Adiwiyata schools. Moreover, it integrates three important variables: green product knowledge, green awareness, and green lifestyle within a single analytical model, which have rarely been examined simultaneously in previous research. Therefore, this study not only extends the existing literature on green consumer behavior among adolescents but also highlights the critical role of environmental education in shaping sustainable consumption practices from an early age.

Based on this description, this study aims to analyze the influence of green product knowledge, green awareness, and green lifestyle on the practice of buying green products in Adiwiyata and non-Adiwiyata High School students in South Jakarta. The results of this study are expected to make a theoretical contribution to the development of literature in the field of environmental education and young consumer behavior, as well as practical implications for the optimization of the Adiwiyata program in urban schools.

RESEARCH METHODS

Research Design

This study uses a quantitative approach with a survey design and is cross-sectional (Iskandar et al., 2023). This approach is based on the philosophy of positivism, which views reality as objective, measurable, and statistically analyzable (Creswell, 2014). Data collection involved two types of instruments tailored to the nature of each variable. Students' knowledge of green products (green product knowledge) was measured using open-ended essay questions, while their green awareness, green lifestyle, and green product purchasing practices were assessed using closed-ended questionnaires based on a Likert scale. All instruments were administered concurrently within a single data collection period.

Population and Samples

The population in this study is public high school students in South Jakarta, who are divided into two categories based on school status, namely Adiwiyata and non-Adiwiyata. The sampling technique used is purposive sampling, which is the selection of samples based on certain criteria and is closely related to predetermined population characteristics (Kusumastuti et al., 2021). In this study, SMAN 34 Jakarta was selected as the Adiwiyata school sample due to its status as an Adiwiyata Mandiri school since 2018. The Adiwiyata Mandiri award is the highest recognition from the Indonesian government, granted to schools that have successfully mentored at least ten other schools in implementing the Adiwiyata program. Meanwhile, SMAN 32 Jakarta was selected as the non-Adiwiyata school. The total number of respondents in this study is 204 students, with 102 students from each school.

Instruments

Data collection was carried out with two types of instruments, namely description test questions and closed questionnaires. A description test is a type of question that asks students to give answers by explaining, elaborating, or similar forms according to the demands of the question (Astuti et al., 2024). Meanwhile, a closed questionnaire is a data collection tool by marking the selected answers (Arikunto, 2021). In this study, the description test was used to measure green product knowledge (GPK), while the questionnaire was used to measure green awareness (GA), green lifestyle (GL), and green product purchasing practices (PPGP). The assessment in the description test uses rubrics while the questionnaire uses a 4-point Likert scale, namely SS (Strongly Agree), S (Agree), TS (Disagree), and STS (Strongly Disagree).

The GPK instrument consists of 27 description questions developed based on three dimensions: product as an attribute package, benefit package, and satisfactory value (Irdawati et al., 2024). The GA instrument consists of 11 items developed based on three dimensions: students' awareness of environmental issues, the impact of human activities, and the importance of sustainability (Du et al., 2018). The GL instrument consists of 36 items covering four dimensions: energy conservation, transport mobility, waste reduction, and environmental social participation (Chwialkowska, 2019). The dimensions in the PPGP instrument in this study were adapted from Consumer Behavior Theory, then simplified into three dimensions: before, during, and after the purchase of green products, and developed into 30 statements (Kotler & Keller, 2016; Mukonza et al., 2021).

All instruments in this study underwent content validation by three expert validators: a subject matter expert, a language expert, and a high school biology teacher as a practitioner. This validation ensured that each item aligned with the measured construct, used clear language, and was practical and readable for respondents. Based on the results, several items from the GA and GL instruments were removed due to bias or irrelevance to the student context. The instruments were also revised linguistically and enhanced with negative statements to reduce response set bias. After refinement, the instruments were finalized for data collection.

Validity testing was carried out using Pearson product-moment correlation analysis. The results showed that all items in the GPK, GA, and PPGP instruments were valid, while two items in GL were invalid and subsequently eliminated. Reliability testing using Cronbach's Alpha revealed high reliability values for all instruments ($r_{11} > 0.60$). Therefore, the instruments were deemed valid, reliable, and appropriate for further analysis.

Procedures

The research procedure is divided into three main stages, namely before the study, during the research, and after the research. The stage before the research includes literature study, determination of research subjects (three classes of students at Adiwiyata and non-Adiwiyata High School), development and preparation of descriptive test instruments and questionnaires adapted from several relevant theses, validation of instruments by experts and practitioners, and licensing arrangements. The current phase of the study involves visits to schools, distribution of instruments through Google Forms, and data collection. Finally, the stage after the research includes scoring, testing the validity and reliability of the instrument (removing invalid and unreliable items), classical assumption test, hypothesis test with multiple linear regression analysis, presentation of results, preparation of reports, and evaluation and reflection.

Data Analysis

Data were analyzed using descriptive and inferential statistics. Descriptive statistics are used to describe the distribution of data through mean values, medians, modes, and standard deviations



(Putri et al., 2021; Nurhasanah, 2023). The data is also categorized into low, medium, and high based on mean and standard deviation (A. Y. Harahap, 2021). Inferential statistics are used to conclude from a dataset that is representative of a wider population (Putri et al., 2021). Inferential statistics consist of parametric and non-parametric statistics, where parametric statistics are used to test population parameters based on sample data, assuming that the data is normally distributed (Sutopo & Slamet, 2017).

In this regard, classical assumption testing is required before hypothesis testing to ensure that the analysis model is free from bias and methodologically robust (Yanti & Hamzah, 2024). The classical assumption test used includes the normality test (Kolmogorov-Smirnov), linearity test, heteroscedasticity test (Glejser), and multicollinearity test (VIF dan Tolerance). Inferential statistics, in this study, used parametric tests because the data met the assumption of normality based on the results of the Kolmogorov–Smirnov test.

The Kolmogorov–Smirnov test showed a D_0 value of 0.0741, which is lower than the D -table value of 0.0952, indicating that the residuals are normally distributed. Linearity was confirmed with significance values of deviation from linearity > 0.05 for all independent variables (GPK, GA, GL). The Glejser test showed no heteroscedasticity (p-values: 0.9906 for GPK, 0.1694 for GA, and 0.0755 for GL). Multicollinearity was also not detected, as tolerance values were all above 0.10 (e.g., 0.9922 for GPK) and VIF values below 10 (maximum VIF = 1.0960).

Hypothesis testing in this study involves with three-predictor multiple linear regression analysis. The aim was to examine the extent of the influence of the variables GPK, GA, and GL on PPGP. Kadir (2018) said that if the GPK variable is assumed to be X_1 , GA as X_2 , GL as X_3 , and PPGP as Y . Then the double regression of Y over X_1 , X_2 , and X_3 is expressed in the following equation:

$$\hat{Y} = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3$$

The test criterion in the F test (simultaneous) is that if the F -count $> F$ -table or p -value < 0.05 , H_0 is rejected and H_1 is accepted. If F -count $< F$ -table or p -value > 0.05 , then H_0 is accepted and H_1 is rejected. The same is true for the t -test (partial), where if the t -count $> t$ -table or p -value < 0.05 , then H_0 is rejected and H_1 is accepted. If the t -count $< t$ -table or p -value > 0.05 , then H_0 is accepted and H_1 is rejected.

RESULTS

This section describes the research findings on the influence of green product knowledge (GPK), green awareness (GA), and green lifestyle (GL) on students' green product purchasing practices (PPGP) in both Adiwiyata and non-Adiwiyata senior high schools in South Jakarta. Data were obtained from essay-based assessments for GPK and closed-ended questionnaires for GA, GL, and PPGP. The descriptive results are presented in Table 1.

Table 1. Descriptive Statistics of Variables in Adiwiyata High School Students

Variable	Statistics					
	Mean	Median	Mode	Standard Deviation	X Minimum	X Maximum
GPK (X_1)	223,13	229	300	54,67	60	300
GA (X_2)	36,55	37	31	4,34	26	44
GL (X_3)	114,52	112	105	13,22	86	144
PPGP (Y)	100,14	97	90	12,45	71	120



Table I shows that the average GPK score in 102 Adiwiyata High School students was 223.13, with a median of 229 and a mode of 300 that formed a negatively skewed distribution pattern (mode > median > mean), indicating the tendency of the data to accumulate above the average. The standard deviation of 54.67 and the score range of 60–300 indicate that there is a fairly wide variation in scores between students. In GA, the average score of 36.55, median 37, and mode 31 resulted in a symmetrical pattern with little positive tendency, where student scores were mostly around the middle grade. The standard deviation of 4.34 with a score range of 26–44 indicates a relatively even distribution.

The average GL score of 114.52 with a median of 112 and a mode of 105 resulted in a positive oblique distribution pattern (mode < median < mean), indicating that most student scores are below average. The standard deviation of 13.22 with a score range of 86–144 indicates that the distribution of data is relatively small. Meanwhile, in the PPGP variable, the average score of 100.14, median 97, and mode 90 also formed a positive slanted distribution, with a standard deviation of 12.45 and a score range of 71–120. Overall, the scores of all variables in Adiwiyata High School students showed a tendency to be at a moderate level with a fairly even distribution of data, although GPK showed a wider spread than other variables.

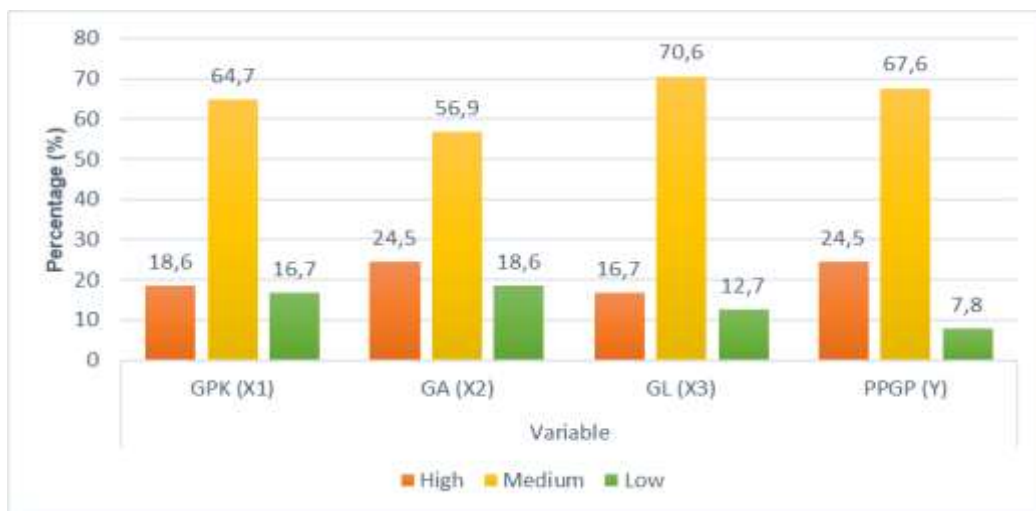


Figure I. Percentage of Variable Score Categories in Adiwiyata High School Students

Figure I shows that most of the students of Adiwiyata High School are in the medium category for all research variables. The highest proportion is found in GL at 70.6%, followed by PPGP at 67.6%. GPK and GA scores were also dominant in the medium category. Although there are students in the high category, the number is still limited to all variables, including PPGP, which reaches 24.5%. This shows that the behavior, understanding, and environmental awareness tendencies of Adiwiyata High School students are mostly still at the intermediate level.

Table 2. Descriptive Statistics of Variables in Non-Adiwiyata High School Students

Variable	Statistics					
	Mean	Median	Mode	Standard Deviation	X Minimum	X Maximum
GPK (X ₁)	207,41	223,5	295	70,46	17	295
GA (X ₂)	35,5	35	31	4,43	23	44
GL (X ₃)	112,85	108	106	13,71	87	141
PPGP (Y)	96,52	92	90	14,28	30	120



Table 2 shows that the average GPK score in 102 non-Adiwiyata high school students was 207.41 with a median of 223.5 and a mode of 295, resulting in a negative skewed distribution pattern ($\text{modus} > \text{median} > \text{mean}$), which indicates the tendency of the data to accumulate above the average. The standard deviation of 70.46 and a score range of 17–295 indicate a very wide spread of scores between students. In GA, the average score of 35.5 with a median of 35 and mode 31 formed a positive skewed distribution ($\text{modus} < \text{median} < \text{mean}$), indicating that most of the data accumulates below average. The standard deviation of 4.43 and the range of 23–44 indicate a small variation and a fairly even distribution.

The average GL score of 112.85 with a median of 108 and mode 106 indicates a positive skewed distribution, where student scores tend to be below average, with a standard deviation of 13.71 and a score range of 87–141. Meanwhile, PPGP has an average score of 96.52 with a median of 92 and a mode of 90, as well as a distribution pattern that is also positively skewed. With a standard deviation of 14.28 and a score range of 30–120, there is a greater variation than GA and GL. Overall, non-Adiwiyata high school students showed moderate and relatively even scoring tendencies on most variables, with the greatest spread occurring in GPK and PPGP.

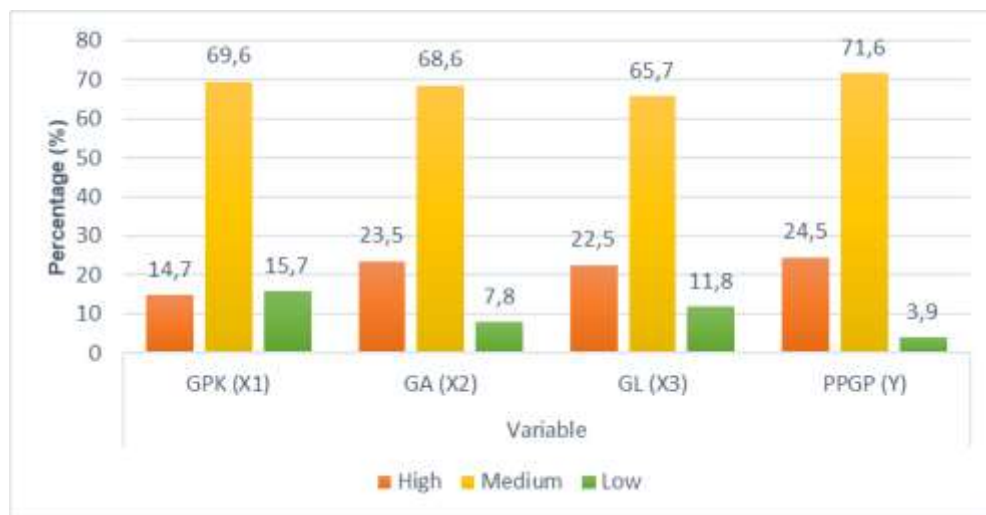


Figure 2. Percentage of Variable Score Categories in Non-Adiwiyata High School Students

Figure 2 shows a similar pattern with Adiwiyata High School students, where the category dominates all variables, especially in PPGP, which reaches 71.6%. Moderate scores were also found in GPK and GA, with the high category being relatively lower than that of Adiwiyata High School students. Despite not having an environment-based program like Adiwiyata, non-Adiwiyata high school students show a fairly consistent tendency to moderate grades. This also shows that the behavioral tendencies, understanding, and environmental awareness of non-Adiwiyata high school students are mostly still at the intermediate level.

Table 3. Results of Multiple Regression Analysis in Adiwiyata High School Students

Variable	β	t	p-value	F	Sig. F	R ²
GPK (X ₁)	0,0087	0,54	0,58			
GA (X ₂)	0,4371	2,18	0,03	41,69	0	0,5607
GL (X ₃)	0,6436	9,61	0			

Table 3 shows that simultaneously, green product knowledge (GPK), green awareness (GA), and green lifestyle (GL) have a significant influence on green product purchasing practices (PPGP)

in Adiwiyata High School students. This is evidenced by an F value of 41.69 and a significance value (Sig. F) of 0 ($p < 0.05$). The model also has a fairly strong predictive power, where 56.07% of the variation in the dependent variables can be explained by the three independent variables ($R^2 = 0.5607$), while the rest is explained by other factors outside the model. Furthermore, the results of the partial test showed that GPK had no significant effect ($p\text{-value} = 0.58 > 0.05$). On the other hand, GA showed a positive and significant influence with a $p\text{-value}$ of 0.03 ($p < 0.05$) and a positive regression coefficient of 0.4371. Similarly, GL also had a positive and very significant influence with a $p\text{-value}$ of 0 ($p < 0.05$) and a larger regression coefficient, which was 0.6436, indicating that green lifestyle was the strongest predictor in the Adiwiyata student group.

Table 4. Results of Multiple Regression Analysis in non-Adiwiyata High School Students

Variable	β	t	p-value	F	Sig. F	R^2
GPK (X_1)	0,0055	0,33	0,73			
GA (X_2)	0,3329	1,21	0,22	18,54	0	0,3621
GL (X_3)	0,5823	6,55	0			

Table 4 shows that simultaneously, green product knowledge (GPK), green awareness (GA), and green lifestyle (GL) significantly affect green product purchasing practices (PPGP) in non-Adiwiyata high school students. This is evidenced by an F value of 18.54 with a significance of 0 ($p < 0.05$). However, the predictability of the model in this group was slightly lower than that of the Adiwiyata group, where only 36.21% of the variation of the dependent variables could be explained by the three independent variables ($R^2 = 0.3621$). Partially, GPK showed no significant effect ($p\text{-value} = 0.73 > 0.05$). In contrast to the Adiwiyata group, GA was found to have no significant effect on non-Adiwiyata students with a $p\text{-value}$ of 0.22 ($p > 0.05$), even though the regression coefficient was positive (0.3329). Nevertheless, GL still showed a positive and very significant influence on the dependent variables in this group, with a $p\text{-value}$ of 0 ($p < 0.05$) and a positive regression coefficient of 0.5823, making it the variable with the most dominant influence.

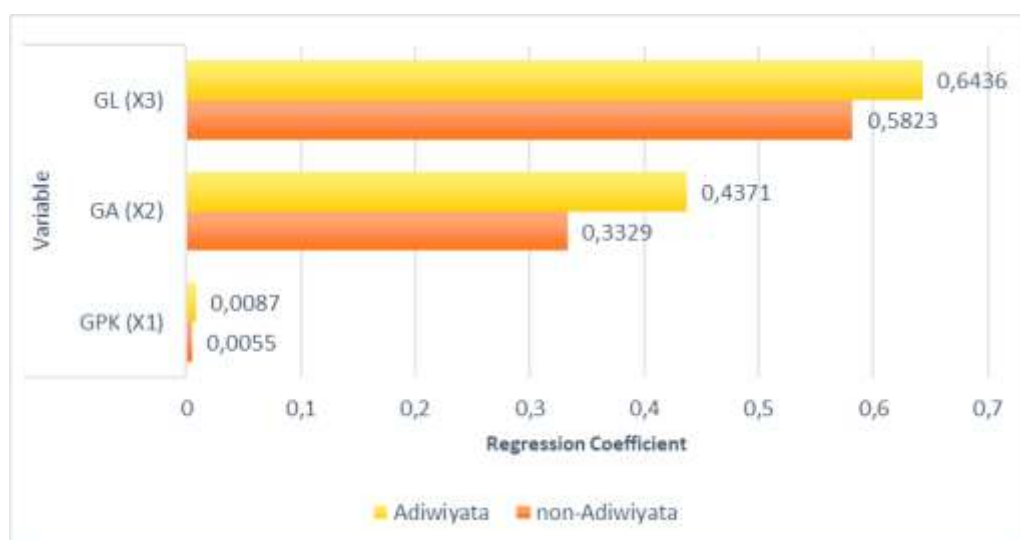


Figure 3. Comparison of Variable Regression Coefficients in Adiwiyata and Non-Adiwiyata Senior High Schools

Figure 3 presents a comparative visualization of the regression coefficient (β) for the variables of green product knowledge (GPK), green awareness (GA), and green lifestyle (GL)

between Adiwiyata and non-Adiwiyata High School students. From this bar graph, it is clear that GPK has a very small regression coefficient for both groups (0.0087 for Adiwiyata and 0.0055 for non-Adiwiyata), indicating that its effect on the dependent variables is almost non-existent. For the GA variable, the regression coefficient in Adiwiyata students (0.4371) appeared to be higher compared to non-Adiwiyata students (0.3329), suggesting that environmental awareness had a greater contribution to environmental-related behaviors or attitudes in Adiwiyata schools. Meanwhile, GL stood out as the variable with the highest regression coefficient for both groups (0.6436 for Adiwiyata and 0.5823 for non-Adiwiyata), indicating that green lifestyle was the strongest predictor of green product purchasing practices (PPGP) in both types of schools, although the effect was slightly stronger on Adiwiyata students. Overall, this image visually confirms that GL was the most influential factor in both groups of students, while GA was more significant in Adiwiyata students, and GPK had a very minimal influence on both.

DISCUSSION

The results of the double regression analysis on 102 Adiwiyata High School students are presented in Table 3. Based on the results of the F test, it is known that the value of $F\text{-count} = 41.69 > F\text{-table } 2.70$ with a significance of $0 < 0.05$ (sig. 5% level), then H_a is accepted. Thus, GPK, GA, and GL were declared to have a significant effect simultaneously on PPGP in Adiwiyata High School students. The coefficient of determination (R^2) of 0.5607 also showed that the 56.07% PPGP variability of Adiwiyata students could be explained by GPK, GA, and GL. These findings are reinforced by the framework of the Theory of Planned Behavior, which places attitudes, social awareness, and control perceptions as the foundation for forming intentions and actions (Ajzen, 1991). Thus, the integration of knowledge, awareness, and an environmentally friendly lifestyle contributes significantly in encouraging sustainable consumption behavior in the Adiwiyata school environment.

Based on the results of the t-test, the GPK variable has a t-count value $= 0.54 < t\text{-table of } 1.98$ and a significance of $0.58 > 0.05$, then H_a is rejected. Thus, GPK was declared not to have a partial significant effect on PPGP in Adiwiyata High School students. These findings are different from the results of the study Ojiaku et al. (2018) dan Wulandari & Miswanto (2022), which emphasize that GPK contributes greatly to green product purchase decisions because it serves as a reference in distinguishing green and conventional products. However, in the context of high school students, these results can be explained through the approach presented by Orr (1994), that environmental education is not enough to rely only on cognitive aspects (knowledge), but needs a participatory and contextual approach to really encourage behavior change. Therefore, even though Adiwiyata students already have knowledge about green products, it is not strong enough to affect actual purchases without strengthening the affective and behavioral dimensions.

In contrast to the GPK results, the GA variable showed a t-count value $= 2.18 > 1.98$ and a significance of $0.03 < 0.05$, so H_a was accepted. Thus, GA has a significant influence on PPGP in Adiwiyata High School students. These findings reinforce the research by Chwialkowska (2019), which emphasizes that awareness of environmental issues encourages a commitment to environmentally friendly behavior. Research by Ahmed et al. (2021); Amanda et al. (2024); dan Amaliah et al. (2023) also states that environmental awareness significantly increases the intention and behavior of buying green products. Individuals who are aware of the ecological impact of products tend to be more selective and responsible in their consumption decisions.

Moreover, Ahmadi & Mahargyani (2024) emphasize that education has a central role in shaping ecological awareness. This is relevant in the context of Adiwiyata schools, which indeed instill the value of sustainability through learning and school culture. Thus, a school environment

that supports ecological values is able to significantly increase students' awareness of purchasing green products.

The GL variable also had a partially significant effect on PPGP in Adiwiyata High School students, with a t-count value of 9.61 and a significance of 0. These findings are in line with research by Pramesti et al. (2022), which states that the implementation of a green lifestyle contributes positively to the intention to buy green products. Similar studies by Van & Hoang (2025) also confirmed the significant influence of GL on the purchasing behavior of bamboo and rattan products in the younger generation, with $\beta = 0.283$ and $p = 0.003$. Within the framework of the Theory of Planned Behavior (TPB), GL reflects the manifestation of subjective attitudes and norms that have been internalized into concrete habits. The context of the Adiwiyata systemically encourages environmental participation and real practices such as waste reduction and product reuse, thereby strengthening the link between lifestyle and consumption behavior of students.

The results of the double regression analysis on 102 non-Adiwiyata high school students are presented in Table 4. Based on the results of the F test, it is known that the value of F-count = 18.54 > F-table 2.70 with a significance of $0 < 0.05$ (sig. 5% level), then H_a is accepted. Thus, GPK, GA, and GL were also declared to have a significant effect simultaneously on PPGP in non-Adiwiyata high school students. An R^2 value of 0.3621 indicates that only 36.21% of PPGP variations can be explained by GPK, GA, and GL in non-Adiwiyata high school students.

This figure is lower than that of Adiwiyata students. This indicates that the school environment without a structured environmental education program has a more limited influence in shaping environmentally friendly consumptive behavior. Therefore, even though the school does not run the Adiwiyata program formally, the three variables are still relevant in explaining students' consumptive behavior because they are influenced by 63.79% of other factors outside this research model.

Based on the results of the t-test, the GPK variable has a t-count value = 0.33 < t-table 1.98 and significance = 0.73 > 0.05, then H_a is rejected. Thus, GPK was declared to have no partially significant effect on PPGP in non-Adiwiyata high school students. These findings are consistent with the research by Wang et al. (2019), which emphasizes that the influence of GPK on the purchase of green products is indirect. According to them, green knowledge will form cognitive perceptions that need to be mediated through green trust and perceived consumer effectiveness so that it can be transformed into a purchase action. In the context of non-Adiwiyata students, GPK is not directly internalized into environmentally friendly consumptive intentions or behaviors due to the lack of environmental education stimulus; information about green products owned by students is not strong enough to influence PPGP.

The GA variable also did not show a significant influence on PPGP, as shown by the t-count value of 1.21 < t-table 1.98 and significance of 0.22 > 0.05. These findings contradict most previous studies, but can be explained through studies by Joseph (2019), which emphasize that environmental awareness does not necessarily lead to green consumption actions if it is not accompanied by external factors such as product availability, perception of purchase effectiveness, or trust in environmental claims.

In addition, the absence of the Adiwiyata Program intervention in this school makes student awareness may not optimally facilitate student awareness to become real action. As stated by Budi Aman et al. (2023), Adiwiyata school has a learning component that encourages the strengthening of students' affective towards environmental issues. This indicates that even if students have knowledge or concern for the environment, without adequate learning environment support and social encouragement, such awareness is not strong enough to encourage sustainable consumptive practices.

Meanwhile, the results of the t-test also showed that GL had a partially significant influence on PPGP in non-Adiwiyata high school students, with $t_{count} = 6.55$ and $significance = 0$. Even without formal environmental programs such as Adiwiyata, students in this group still show the consistency of green consumptive behaviors that are closely related to their lifestyles. This is reinforced by the findings of Ogiemwonyi et al. (2023) in Malaysia, which emphasize that environmental concern and personal responsibility can shape eco-friendly purchasing behaviour, even without institutional intervention, as long as there is a strong personal value drive.

In a local context, Dewi et al. (2023) also prove that a healthy lifestyle and environmental awareness have a significant relationship with the decision to buy green products such as tumblers, while Adam Saputra & Agustini (2024) show that a green lifestyle can emerge from independent understanding and habits that continue to be honed. Therefore, despite being outside the structured environmental education system, non-Adiwiyata high school students still show that GL is the main driver of PPGP. This can be obtained through family, friends, or other social media.

The value of the regression coefficient (β) on the independent variable shows the strength of its influence on the PPGP visualized in Figure 3. Of the three predictor variables, green lifestyle (GL) had the highest regression coefficient in Adiwiyata ($\beta = 0.6436$) and non-Adiwiyata ($\beta = 0.5823$) high school students, making it the strongest predictor of green product purchasing practices (PPGP) in both groups. These findings are in line with the construct of attitude toward the behavior in the Theory of Planned Behavior (TPB), where positive attitudes toward behavior are the basis for the formation of actual intentions and behaviors. Research by Pramesti et al. (2022); Van & Hoang (2025); and Dewi et al. (2023) also shows that the higher the quality of an individual's green lifestyle, the greater their tendency to choose green products. Adiwiyata's school context, which is consistent in forming pro-environmental habits through a participatory and educational approach, reinforces the internalization of these values in student behavior (Budiaman et al., 2023).

Furthermore, the GA variable had a moderate level of influence on PPGP, with a regression coefficient of 0.4371 in Adiwiyata students and 0.3329 in non-Adiwiyata students. Although not as strong as GL, GA still has a significant contribution as it reflects a level of cognitive and affective concern for environmental issues. In the SDGs, GA can be associated with behavioral beliefs, which are the belief that certain actions will produce a positive impact on the environment.

Research by Ahmed et al. (2021); Amanda et al. (2024); dan Amaliah et al. (2023) shows that the higher an individual's awareness of the ecological impact of consumption, the greater their willingness to adopt responsible consumption patterns. In the context of Adiwiyata, higher GA scores also reflect the effectiveness of integrating environmental materials into the curriculum, as well as student involvement in school activities that are reflective and collaborative. Thus, GA becomes the conceptual foundation that directs green purchasing intentions, although its strength depends heavily on the support of the institutional system.

Meanwhile, the GPK variable showed a very low regression coefficient, both in Adiwiyata (0.0087) and non-Adiwiyata (0.0055) students. This indicates that its influence on PPGP is very weak. These findings show that while knowledge is important as a cornerstone of ecological thinking, it has no direct effect on purchasing actions without emotional and contextual involvement. This supports the research by Wang et al. (2019), which states that the influence of GPK is more indirect, namely through the formation of green trust and perceived consumer effectiveness. Research by Munawar et al. (2019) also shows that GPK has minimal contribution to the formation of awareness, and is not strong enough to encourage action without being supported by positive attitudes and lifestyles.

Based on the comparison of the two groups in Figure 3, the value of the regression coefficient in Adiwiyata High School students was consistently higher than in non-Adiwiyata

students, especially in the GL and GA variables. This difference confirms the effectiveness of the Adiwiyata Program based on an educational, participatory, and sustainable approach (Budiaman et al., 2023). This is in line with research by (Solihin & Dedah, 2022), which states that a person's intention to act is greatly influenced by the environment and the way students gain knowledge. Thus, a conducive learning environment and integrated information delivery methods in the Adiwiyata Program can explain why these variables have a stronger influence on Adiwiyata students.

A study by (Iswari & Utomo, 2017) supports this by showing that students in Adiwiyata schools have a higher level of environmental care actions than students in non-Adiwiyata schools, particularly due to the integration of environmental education into more adequate learning and supporting facilities. If reflected in the TPB, Adiwiyata school is able to strengthen perceived behavioral control, which is students' perception of the ease of acting environmentally friendly through available resources and support (Ajzen, 1991). Therefore, the context of Adiwiyata is an important factor in increasing the effectiveness of all predictors of green consumption behavior. Overall, the regression coefficient comparison confirms that green lifestyle (GL) is the strongest predictor of green product purchasing practices (PPGP), both in the context of Adiwiyata and non-Adiwiyata. Therefore, school-based intervention strategies should be focused on the formation and strengthening of green lifestyles as the main key in fostering green product purchasing practices among the younger generation.

CONCLUSION

This study concludes that green product knowledge (GPK), green awareness (GA), and green lifestyle (GL) simultaneously have a significant effect on green product purchasing practices (PPGP), with a contribution of 56.07% in Adiwiyata High School students and 36.21% in non-Adiwiyata. Partially, only GA ($t = 2.18$; $p = 0.03$) and GL ($t = 9.61$; $p = 0.00$) had a significant effect on Adiwiyata students, while in non-Adiwiyata students, only GL ($t = 6.55$; $p = 0.00$) was significant. GL was the strongest predictor of PPGP in both groups, with the highest regression coefficients of 0.6436 (Adiwiyata) and 0.5823 (non-Adiwiyata). Therefore, Adiwiyata schools are advised to strengthen affective and behavioral aspects in environmental education, while non-Adiwiyata schools can start developing project-based activities to improve green lifestyles. Follow-up research is suggested to examine the role of GL mediation or explore other variables such as social value, peer influence, and media exposure to PPGP.

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