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FROM EDUCATION TO ACTION: ENVIRONMENTAL LITERACY AS A PREDICTOR OF GREEN CONSUMPTION IN URBAN SOCIETIES

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ABSTRACT
Global consumption poses significant challenges to sustainable development, making education a vital tool for promoting awareness and responsible green consumption. This study explores environmental literacy as a key link between education and sustainable consumption behavior. Employing a quantitative survey of 400 working-age residents in Surakarta experienced in eco-friendly consumption, the research analyzes how environmental literacy influences green consumption outcomes. Grounded in attitudinal theory, it emphasizes that behavior is shaped by attitudes formed through learning, experience, and social interaction. The results confirm that higher environmental literacy significantly encourages green consumption habits. These findings highlight education's crucial role in shifting public attitudes and consumption patterns, supporting broader sustainability goals. Moreover, the study suggests important directions for Indonesia's education system, advocating for the integration of environmental education throughout all academic levels to effectively nurture ecological awareness and responsible consumer behavior.

INTRODUCTIONS

Global consumption patterns have become one of the main challenges in achieving sustainable development (Adebayo & Kirikkaleli, 2021). The continued overexploitation of natural resources, excessive energy use, and waste accumulation, as described by Sari (2017), reflect persistent unsustainable consumption habits worldwide. This situation underscores the urgent need to transform not only what people consume but also how they learn and internalize sustainable practices. In addressing this, international agencies like UNESCO (2017) and OECD (2020) highlight education as a strategic tool that goes beyond knowledge transfer; education plays a transformative role in

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cultivating environmental awareness and responsible consumption behaviors (Husamah, 2024). Education not only functions to transfer knowledge but also serves as a transformative means in shaping environmentally conscious citizens oriented towards sustainability (Adefila et al., 2021).

Environmental literacy has become a key concept that acts as a bridge between education and ecological action (Kroufek et al., 2018). Environmental literacy encompasses understanding ecological systems, awareness of environmental issues, values and attitudes toward sustainability, as well as the skills to take relevant actions (Ruangkanjanases et al., 2020). Effective education can develop these dimensions through holistic, participatory learning processes based on real-life contexts. Therefore, environmental literacy is not only a product of education but also an indicator of the long-term success of sustainable education (Mawardi et al., 2023).

One concrete form of environmental literacy is green consumption behavior, which refers to actions of selecting, using, and disposing of products by considering their environmental impact (Al Mamun et al., 2018). Green consumption reflects the degree of internalization of sustainability values acquired through both formal and non-formal education (Davis et al., 2025). Integrating environmental education into school curricula, extracurricular activities, and public campaigns significantly influences individuals' preferences toward eco-friendly products, indicating that green consumption can be understood as a learned behavior shaped by education. (Collier-Robinson et al., 2019). In other words, green consumption serves as a tangible representation of the success of education in shaping ecological behavior within society.

However, various studies show a gap between the level of environmental literacy and green consumption behavior. Many individuals who possess high environmental knowledge and awareness do not consistently translate this into everyday consumption actions (Liu & Tobias, 2024; Tampubolon et al., 2024). This phenomenon indicates that although education has successfully increased literacy, there are still structural, psychological, or social barriers preventing the conversion of literacy into action. This gap poses a challenge for education to not only develop cognitive aspects but also strengthen affective and conative dimensions in environmental learning.

Given these considerations, this study aims to analyze the relationship between environmental literacy and green consumption behavior as products of the sustainable education process. It further seeks to assess whether higher levels of environmental literacy significantly predict greater tendencies to engage in green consumption. This research aspires to offer empirical insights to refine educational strategies that effectively promote sustainable behavioral change.

LITERATURE REVIEW

Environmental Literacy in the Context of Education

Environmental literacy is a key competency in 21st-century education that supports sustainable development (Velempini, 2017). This concept encompasses understanding environmental systems, awareness of ecological issues, as well as attitudes and skills that encourage responsible environmental actions (Poškus, 2024). Conceptually, environmental literacy consists of four main dimensions: environmental values, environmental responsibility, perception of environmental problems, and behavioral skills (Liu & Tobias, 2024). These four dimensions form the foundation for ecological behaviors such as green consumption, waste management, and resource conservation.

The role of education is vital in fostering environmental literacy in a holistic manner. Through contextual and participatory pedagogical approaches—such as project-based learning, field studies, and simulations—learners not only acquire cognitive knowledge but also experience the strengthening of affective and psychomotor aspects (Al Zayyan & Laura, 2025). The integration of environmental literacy across various subjects, coupled with active teacher involvement in building sustainability awareness, can encourage learners to make environmentally friendly consumption (Handayani et al., 2025). Thus, environmental literacy functions not only as a learning objective but also as a transformative tool towards a more sustainable society.

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Green Consumption as a Learning Behavior

Green consumption is a concrete form of sustainable behavior rooted in the processes of education and learning (Si et al., 2019). This behavior reflects individuals' decisions to select, use, and dispose of products based on considerations of their environmental impact (Ma et al., 2021). Conceptually, green consumption does not stand alone as merely an economic action but rather as a reflection of values and attitudes acquired through learning processes that shape ecological awareness (Yang, 2021). Thus, green consumption can be understood as a learning behavior that develops alongside increasing environmental literacy within both formal and non-formal educational contexts.

The formation of green consumption behavior can be facilitated through contextual and participatory learning approaches (Jalal et al., 2024). Models such as project-based learning and problem-based learning enable learners to actively explore environmental issues and relate them to everyday life (Syawal, 2024). Through activities like waste management projects, energy audits, or consumption decision-making simulations, students not only understand the ecological impacts of their lifestyles but are also trained to make ethical and reflective consumption choices (Ortegon & Acosta, 2019). This process strengthens the cognitive, affective, and conative dimensions of environmental education.

Within the framework of sustainable education, green consumption is regarded as an integral competency that learners must possess in the 21st century (Santolin et al., 2023). Education aims not only to produce academically proficient graduates but also environmentally conscious individuals capable of making ethical decisions in daily life. Therefore, learning strategies that encourage active participation, collaboration, and critical reflection are crucial in shaping green consumption behavior as part of the character development inherent in sustainable education.

Attitudinal Theory (Ajzen, 1991)

Attitudinal theory emphasizes that individual behavior is strongly influenced by attitudes formed through learning processes, experience, and social interactions (Lam et al., 2024). In the context of green consumption, this theory posits that a positive attitude toward the environment motivates individuals to make ecologically responsible consumption decisions (Kleine et al., 2009). Ajzen (1991) explains that attitudes not only function as affective responses but also represent internalized predispositions within individuals to act in certain ways in specific situations.

Education plays a critical role as the primary agent in shaping these attitudes. Through contextual and participatory environmental education, individuals are equipped with knowledge, values, and critical awareness that foster pro-environmental attitudes (Azdkia et al., 2024). These attitudes then serve as the foundation for everyday decision-making, including the selection, use, and disposal of products based on their environmental impact (Rivanty & Hermawan, 2024). Thus, education does not merely convey information but also shapes mindsets and value orientations that directly influence green consumption behaviors.

Attitudinal theory provides a robust conceptual framework for understanding how environmental literacy gained through education can be transformed into sustainable behavior (Sanisah et al., 2025). When education effectively instills strong ecological attitudes, individuals tend to internalize sustainability values into their consumption practices. Therefore, in this study, attitudinal theory serves as the basis to explain the influence of environmental literacy dimensions on green consumption behavior.

METHOD

This study employs a quantitative approach using a survey method to examine the relationship between environmental literacy and green consumption behavior, while also considering the influence of control variables including gender, age, highest education level, and income. The survey was conducted by distributing a closed-ended questionnaire utilizing a five-point Likert scale. The research location is Surakarta City, Central Java Province, selected due to its status as an urban area characterized by dynamic educational and environmental policy activities. Respondents were residents of Surakarta City, selected through purposive sampling with criteria of working age (15–

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64 years) and possessing consumption experience related to environmental issues. The sample size was determined based on statistical analysis considerations and demographic representativeness.

For data analysis, this study employed several statistical techniques. First, descriptive analysis was conducted to depict the characteristics of the respondents and the research variables. Subsequently, to examine the relationships between variables, the Spearman correlation test was used to assess the direction and strength of the associations between the dimensions of environmental literacy and green consumption, as well as the influence of control variables such as gender, age, education level, and income. Furthermore, as the primary analysis, we tested the influence of each environmental literacy variable on green consumption by applying multiple linear regression analysis. This regression technique allows researchers to simultaneously assess the contribution of each environmental literacy variable in predicting green consumption behavior.

The research instrument was developed by adapting questionnaires from a previous study Liu dan Tobias (2024), which had been validated within the context of measuring environmental literacy and green consumption, with adjustments made to accommodate the demographic conditions of the research location. Environmental literacy in this study consists of four dimensions: environmental values (1. The harmony between humans and nature is very important; 2. Animals and plants have equal rights to survive as humans; 3. Environmental damage caused by humans often results in catastrophic consequences); environmental responsibility (4. I am responsible for efforts to conserve resources and protect the environment; 5. I feel guilty when littering; 6. If everyone is aware of the importance of environmental protection, future generations will benefit); perception of environmental issues (7. My consumption activities can impact the natural environment; 8. Although humans have the ability to alter nature, it is important to obey natural laws; 9. The idea that humans are currently facing an ecological crisis is an exaggeration); and environmental behavioral skills (10. Immediately intervening when witnessing environmentally damaging behavior around me; 11. Disposing of litter left by others into the trash bin; 12. Promoting environmentally friendly practices to others).

Meanwhile, the green consumption instrument was also adapted from Liu dan Tobias (2024) and categorized into four dimensions: green products (1. Choosing environmentally friendly household appliances with minimal environmental impact; 2. Replacing used products for environmental reasons; 3. Paying attention to and fully understanding eco-friendly products; 4. Refusing to buy products with excessive packaging); material recycling (5. Sorting household waste to facilitate recycling; 6. Reusing environmentally friendly shopping bags; 7. Minimizing the use of disposable eating utensils; 8. Reusing unused items before considering disposal); biodiversity conservation (9. Conserving paper to protect trees; 10. Refusing products made from wild animals; 11. Plastic packaging can be ingested by animals, causing death; 12. Considering impacts on biodiversity when choosing food); and efficient energy use (13. Choosing environmentally friendly transportation and reducing private car use; 14. Trying to finish all the food taken to avoid waste; 15. Saving water through reuse; 16. Saving electricity by immediately turning off unused appliances).

RESULT AND DISCUSSION

Descriptive Statistics

Descriptive analysis provides a detailed overview of the respondents' responses to the variables examined in this study. The research variables are categorized into two groups: numerical and categorical variables. Numerical variables include the dimensions of environmental literacy (environmental values, environmental responsibility, perception of environmental issues, and environmental behavioral skills), green consumption, and incentive policies. These numerical variables are represented using descriptive statistics such as mean, standard deviation, minimum value, and maximum value. Categorical variables consist of age, occupation, gender, highest education level, income, marital status, and number of family members.

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The following table presents the results of data processing from the questionnaires, describing the characteristics of variables from 400 respondents.

Table 1. Frequency description of numerical variables

Variable		Mean	SD	Min	Max
Green Consumption	Y	2,950	0,190	2	4
Environmental Literacy	X	3,190	0,190	2,95	4,1
Environmental Value	Xa	4.110	0,332	3,2	5
Environmental Responsibility	Xb	4,030	0,364	3	5
Environmental Problem Perception	Xc	3,412	0.426	4	5
Environmental Behavior Skill	Xd	2,800	0,414	1,6	4

The numeric variable scores represent the average scores of all item questions measuring each variable. Therefore, the scale of numeric variable scores corresponds to the scale of the individual item scores, which ranges from 1 to 5. The descriptive table indicates that, generally, respondents exhibit a moderate level of green consumption (Y) and environmental literacy (X) with mean scores of 2,950 and 3,590, respectively. Among the four dimensions of environmental literacy, environmental values (Xa) show the highest average (mean = 4.110), reflecting the strong valuation individuals place on environmental preservation. Perception of environmental problems (Xc) and environmental responsibility (Xb) also scored relatively high. However, the dimension of environmental behavioral skills (Xd) has the lowest mean score (mean = 2,800), indicating the need to enhance practical abilities to implement environmentally friendly behaviors.

Table 2. Descriptive data of categorical variables

Variable	Frequency	Percentage
Gender		
Male	226	56,5
Female	174	43,5
Age		
15 - 21	86	21,5
22 -27	153	38,25
28 -33	59	14,75
34 - 40	54	13,5
> 40	48	12
Education		
Elementary school	41	10,25
Junior high school	80	20
High school	190	47,5
University	89	22,25
Income		
< Rp2.000.000	166	41,5

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Rp2.000.000 - Rp4.000.000	193	48,25
> Rp4.000.000	41	10,25

This table presents the demographic characteristics of respondents based on gender, age, education level, and monthly income. In terms of gender, the majority of respondents were male, totaling 226 individuals or 56.5%, while female respondents accounted for 174 individuals or 43.5%. This indicates a higher participation rate among male respondents in the study.

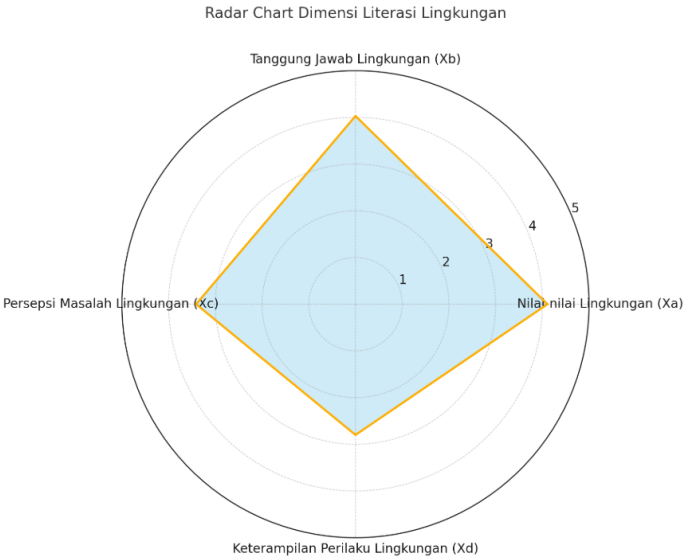
Regarding age, the largest proportion of respondents fell within the 22–27 age group, comprising 153 individuals or 38.25%, followed by the 15–21 age group with 86 individuals (21.5%). Other age groups include 28–33 years (14.75%), 34–40 years (13.5%), and over 40 years (12%). These results suggest that most respondents were in their productive or early adulthood years, making them relevant subjects in examining environmental literacy and green consumption behavior. Based of educational background, most respondents had completed high school (47.5%), followed by university graduates (22.25%). Junior high school and elementary school graduates accounted for 20% and 10.25%, respectively. This distribution reflects that a significant portion of the respondents had a medium level of education, which may influence their understanding of environmental issues and sustainable consumption.

With regard to income, the largest share of respondents earned between Rp2,000,000 and Rp4,000,000 per month (48.25%). Those earning below Rp2,000,000 made up 41.5%, while only 10.25% reported earning more than Rp4,000,000. This pattern indicates that most respondents were from lower to middle-income groups, a factor that is particularly relevant when assessing the affordability and willingness to engage in green consumption practices. Overall, the data show that the majority of respondents were male, young adults, had secondary education, and came from lower-middle income brackets—demographic characteristics that are essential to consider when analyzing their environmental awareness and sustainable consumption behavior.

Visualization of Environmental Literacy Radar Chart

The following radar chart presents the profile of the environmental literacy dimensions to depict the status of environmental literacy among the population of Surakarta City.

Figure 1. Environmental Literacy Dimension Radar Chart



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To obtain a more comprehensive overview of the environmental literacy dimensions possessed by the working-age population in Surakarta City, data visualization was conducted using a radar chart. This chart represents the mean values of the four main dimensions of environmental literacy, namely environmental values (Xa), environmental responsibility (Xb), perception of environmental problems (Xc), and environmental behavioral skills (Xd).

Based on the radar chart, it is evident that environmental values and environmental responsibility occupy the highest positions, with mean scores approaching 4. This reflects that the majority of respondents hold strong normative awareness and moral commitment towards environmental preservation. These findings indicate that the affective and cognitive aspects of environmental literacy are well established.

Meanwhile, the perception of environmental problems dimension is at a moderate level, with an average score around 3.4. This suggests that the community is reasonably aware of various environmental issues such as pollution, climate change, and ecosystem degradation; however, not all individuals may fully comprehend the direct impacts of these issues on their daily lives.

The dimension with the lowest score is environmental behavioral skills, which only reaches an average score close to 2.8. This score indicates that the practical ability to perform environmentally friendly actions—such as waste sorting, energy conservation, or choosing green products—remains limited among respondents. This finding highlights a gap between the attitudes and values held and the concrete behaviors practiced in daily life.

Correlation Results

The results of the correlation test are presented in Figure 4.

Table 3. Correlation test results

Variable	Y	Xa	Xb	Xc	Xd	C1	C2	C3	C4
Y	1								
Xa	0,378**	1**							
Xb	0,239**	0,532**	1						
Xc	0,198**	0,492**	-0,026	1					
Xd	0,141**	0,491**	-0,038	-0,028	1				
C1	0,146*	0,070	0,047	0,031	0,048	1			
C2	0,077	0,128**	0,050	0,106*	0,084	0,113*	1		
C3	0.286**	0,162**	0,046	0,140**	0,077	0,076	-0,010	1	
C4	0,351**	0,141**	0,059	0,109*	0,088	0,076	-0,034	0,778**	1

The results of the Spearman correlation test between environmental literacy and green consumption (Y) indicate a significant positive relationship. The dimension of environmental values (Xa) exhibits the highest correlation with green consumption, with a coefficient of $r = 0.378$ ($p < 0.01$), followed by environmental responsibility (Xb) with $r = 0.239$ ($p < 0.01$), environmental problem perception (Xc) with $r = 0.198$ ($p < 0.01$), and environmental behavior skills (Xd) with $r = 0.141$ ($p < 0.01$). These four dimensions demonstrate that the higher an individual's environmental literacy—in terms of values, responsibility, behavioral skills, and perception of

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environmental problems—the greater their tendency to engage in green consumption behavior. This finding supports the hypothesis that environmental literacy is positively and significantly correlated with green consumption behavior.

Furthermore, the control variables provide additional insight into respondent characteristics influencing green consumption. Gender (C1) shows a significant positive correlation with green consumption ($r = 0.146$; $p < 0.05$), indicating a difference in environmentally friendly consumption tendencies based on gender. Age (C2) does not show a significant relationship ($r = 0.077$), suggesting that preferences for green consumption are relatively evenly distributed across age groups within this sample. On the other hand, highest education level (C3) correlates significantly with green consumption ($r = 0.286$; $p < 0.01$), indicating that higher educational attainment is associated with a greater tendency to practice green consumption. Meanwhile, income (C4) also exhibits a significant positive correlation ($r = 0.351$; $p < 0.01$), reinforcing the argument that economic capability is an important prerequisite for engaging in sustainable consumption.

Regression Result

The results of the regression test are presented in Figure 5.

Tabel 4. Regression test result

Variable	Unstandardized coefficient	Standardization coefficient	t	p
Environmental Value	0.286	0.588	3.213	0.001
Environmental Responsibility	0.187	0.385	7.480	0.000
Environmental Problem Perception	0.129	0.208	3.050	0.002
Environmental Behavior Skill	0.133	0.274	4.156	0.000

The results of the regression analysis demonstrate that the four dimensions of environmental literacy significantly influence green consumption behavior. Among them, environmental value shows the strongest effect, as indicated by a standardized coefficient (β) of 0.588 and a p-value of 0.001. This finding suggests that individuals who hold stronger environmental values are more likely to engage in green consumption. Environmental values reflect a normative awareness and concern for ecological sustainability, encouraging individuals to choose environmentally friendly products, avoid wasteful behavior, and consider the long-term impact of their consumption decisions.

Furthermore, environmental responsibility also contributes significantly to green consumption ($\beta = 0.385$, $p = 0.000$). A stronger sense of personal responsibility toward the environment increases individuals' motivation to adopt more sustainable consumption patterns. This dimension emphasizes the moral and ethical commitment to environmental preservation, reinforcing the importance of cultivating a personal sense of responsibility as part of environmental education efforts.

The dimension of environmental problem perception also has a statistically significant effect on green consumption ($\beta = 0.208$, $p = 0.002$), although with a lower coefficient. This indicates that awareness and understanding of environmental issues enable individuals to recognize the negative consequences of unsustainable practices, making them more cautious in their consumption choices. Although this dimension plays a relatively smaller role compared to environmental values and responsibility, it provides the cognitive basis for forming environmentally responsible consumption behavior.

In addition, environmental behavior skill shows a significant effect ($\beta = 0.274$, $p = 0.000$), implying that individuals' ability to apply environmentally friendly behaviors—such as waste separation, product reuse, and energy saving—contributes meaningfully to green consumption. While its influence is slightly less compared to values and responsibility, behavioral skills are crucial as they translate environmental knowledge and attitudes into tangible daily

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practices. This underscores the need for practical training in environmental skills to support behavioral transformation at the community level.

Overall, these regression results highlight that green consumption is influenced by a combination of values, attitudes, perceptions, and competencies. Therefore, comprehensive environmental literacy programs that address all four dimensions are essential for fostering sustainable consumption behaviors.

Discussion

The correlation test results in this study demonstrate that environmental literacy has a positive and significant relationship with green consumption behavior. All dimensions—environmental values, environmental responsibility, perception of environmental problems, and environmental behavioral skills—show positive correlations with green consumption. The Spearman correlation test results indicate that all dimensions of environmental literacy are positively and significantly correlated with green consumption behavior, although the strength of these relationships varies. The *environmental value* dimension shows the highest correlation (r = 0.378), which falls into the moderate category, suggesting that individuals' environmental values play a substantial role in encouraging sustainable consumption practices. This is followed by *environmental responsibility* (r = 0.239) and *environmental problem perception* (r = 0.198), which are categorized as weak to moderate correlations. Meanwhile, *environmental behavior skill* exhibits the weakest correlation with green consumption (r = 0.141), though still statistically significant, implying that behavioral skills are not yet fully internalized as part of daily green practices. Among the control variables, education (r = 0.286) and income (r = 0.351) also show significant positive correlations, indicating that access to knowledge and financial resources contributes to the adoption of environmentally friendly consumption behaviors.

The environmental behavior skill dimension demonstrated the weakest correlation with green consumption compared to the other dimensions. This finding implies that although individuals may hold strong environmental values and awareness, they may lack the practical skills necessary to translate these into sustainable consumer behavior. Skills such as waste sorting, reusing products, or avoiding plastic packaging appear to be underdeveloped in everyday life. Manik et al. (2023) argued that the gap between environmental attitudes and behaviors often stems from a lack of practical support or direct experience. Similarly, Wang et al. (2023) highlighted that environmental behavioral literacy requires reinforcement through hands-on activities, training, and habitual practice to effectively shape real-world behavior. Therefore, this result underscores the importance of integrating practical components into environmental education to help individuals develop the necessary behavioral competencies that support green consumption.

Furthermore, the correlation analysis reveals that control variables also influence green consumption behavior. Gender (C1) and highest education level (C3) show significant positive correlations with green consumption, suggesting that females and individuals with higher educational attainment tend to demonstrate more environmentally conscious consumption behaviors. Education plays a vital role in providing conceptual understanding and analytical skills underlying green consumption choices. Conversely, age (C2) and income (C4) did not show significant correlations, although they remain relevant demographic aspects that may moderate access to and the ability to implement sustainable consumption practices.

These findings align with those of Liu dan Tobias (2024), who provide experimental evidence from China showing that increases in environmental knowledge constitute an effective strategy to promote sustainable consumption behavior. Similarly, a study by Nguyen et al. (2023) in Vietnam supports these results by demonstrating that awareness and understanding of environmental issues positively contribute to green consumer behavior. These studies confirm that environmental literacy, as a multidimensional construct, enhances consumer awareness of sustainability importance, thereby motivating the selection of more environmentally friendly products.

Additionally, this research concurs with Ardoin & Bowers (2020), who found that comprehensive environmental education programs—including cognitive, affective, and psychomotor elements—positively influence green consumption behaviors among adolescents in the United States. Likewise, research by Chankrajang & Muttarak,

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(2017) in Thailand illustrates that environmental education has a greater effect on individuals with higher levels of formal education. Nevertheless, comparison with the local Indonesian context reveals distinct challenges. Most schools lack systematic sustainability evaluation mechanisms, and environmental education is often confined to theoretical aspects without experiential learning in environmental management or practical activities related to green consumption.

Reflection on the local context also indicates that income level does not necessarily guarantee green consumption behavior, as environmental values and literacy play a more significant role than purchasing power. This suggests that awareness and attitude formation are more effectively fostered through education rather than solely through economic incentive policies. Therefore, community-based educational programs that target all social strata may serve as vital alternatives to broaden the reach of environmental education more equitably.

The implications of these findings indicate that environmental education needs to be developed in a more strategic and integrative manner, taking into account relevant demographic factors. Environmental literacy should be viewed not only as an educational instrument but also as a transformational tool capable of changing societal perspectives and behaviors toward making ecologically responsible consumption choices. Consequently, synergy among educational institutions, government bodies, and communities is essential to cultivate a generation that is not only intellectually proficient but also ecologically wise.

CONCLUSION

Based on the results of the conducted study, it can be concluded that environmental literacy plays a crucial role in fostering the development of green consumption behavior. These findings reinforce the theoretical framework which posits that education, through the internalization of values, responsibility, perception of environmental issues, and behavioral skills, can shape attitudes and behaviors towards greater sustainability. In other words, the higher an individual's environmental literacy, the greater their propensity to adopt more environmentally friendly consumption patterns. This outcome confirms that education holds a strategic role in transforming societal perspectives and habits related to consumption, ultimately contributing to the achievement of sustainable development goals.

These findings carry important implications for the development of the education system in Indonesia. First, the integration of environmental education needs to be implemented comprehensively across all educational levels, from primary to tertiary education. Environmental issues should not be treated merely as supplementary topics but must be mainstreamed within the curriculum through interdisciplinary approaches and contextualized learning. Second, the capacity of teachers and educators must be enhanced through professional training and development focused on sustainability-based learning. Educators need to be equipped with both pedagogical and ecological competencies to design learning experiences that engage not only cognitive domains but also affective and psychomotor aspects within the sustainability context. Third, improving environmental literacy should be regarded as an entry point to drive behavioral transformation within society. Education should aim not only to increase knowledge but also to cultivate critical awareness and moral commitment toward environmental issues. In this regard, experiential, collaborative, and reflective educational approaches are key to enabling learners to develop meaningful connections with their environment. Thus, structured and transformative environmental education can serve as a foundation for nurturing a generation that is not only environmentally conscious but also actively engaged in sustaining the planet's wellbeing.

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