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Enchancing Consumer Attitudes Toward Green Products: The Role of Environmental Concerns and Eco Literacy

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ABSTRACT

The purpose of this study is to look into how eco-literacy and environmental concerns influence consumer attitudes toward environmentally friendly items, namely electric bicycles. As global awareness of environmental preservation grows, consumers prefer products with a low negative influence on the ecosystem. Electric bicycles have arisen as a transportation option that supports this movement because they use renewable energy and reduce greenhouse gas emissions. This study employs a survey method, delivering questionnaires to 60 respondents in Purwokerto, which were analyzed using multiple regression. The findings indicate that eco-literacy and environmental concern have a favorable and significant influence on consumer sentiments toward environmentally friendly items. These data suggest that customers' attitudes toward electric bicycles are more positive as their level of ecological literacy and environmental consciousness increases. The study's conclusion underlines the significance of raising public awareness of environmental issues in order to stimulate the use of eco-friendly products.

Keywords: Attitude towards green product; eco-literacy; environmental concerns.

1. Introduction

In recent decades, global awareness of the necessity of environmental preservation has grown. This increase is motivated by widespread anxiety about the possibility of environmental calamities endangering not just human health but also the survival of humans and their successors. The green consumerism movement sprang from these issues, as a continuation of global consumerism driven by consumers' understanding of their rights to decent, safe, and environmentally friendly products. Consumers want items that are not just completely "green," but also capable of minimizing environmental impact. Environmentally conscious consumers, often known as green consumers, have emerged as a powerful force in marketing campaigns that promote eco-friendly products (lu et al., 2013). They deliberately seek products that do not affect the environment and avoid those that degrade ecosystems or entail unethical animal and human experimentation (Nekmahmud & Fekete-Farkas, 2020). Products with eco-friendly credentials, such as organic, recyclable, or renewable energy, have become their preferred choice (Kumar & Ghodeswar, 2015).

In recent years, electric bicycles have emerged as one of the fastest-growing industries in the transportation market (Salmeron-Manzano & Manzano-Agugliaro, 2018; Fishman & Cherry, 2016), particularly in densely populated urban areas where electric bicycles are more convenient than other environmentally friendly vehicles such as conventional bicycles (Lin et al., 2022). Electric bicycles are a popular alternative for short-distance transport due to their low purchasing costs (Patil & Majumdar, 2021; Sałabun et al., 2019) and convenience of use in cities. Electric bicycles have arisen as a product that promotes green consumption since they use rechargeable batteries, which minimize greenhouse gas emissions and reliance on fossil fuels. Electric bicycles, with their superior energy efficiency than motor vehicles, help to minimize air pollution and promote environmental sustainability. This alternative is becoming increasingly popular among ecologically concerned consumers who wish to lower their carbon footprint without compromising their everyday transit demands.

Pro-environmental consumption behavior aiming at reducing environmental damage (Han et al., 2020), has prompted corporations to create ecologically friendly items. In order to compete in a highly competitive market, businesses are willing to pay greater expenses for the research and production of green products (Wei et al., 2018). Thus, increased usage of eco-friendly products, such as electric bicycles, can have long-term benefits for society and the environment, even if they are initially more expensive (Wu et al., 2018).

If electric bicycles are truly an environmentally benign alternative to motorbikes and automobiles, their use must be motivated by riders' understanding of ecological issues and concern for the environment, rather than solely by their functional characteristics (Flores & Jansson, 2021). Research indicates that cost savings, convenience, and enjoyment are common reasons for its use (Bieliński & Ważna, 2020; Abduljabbar et al., 2021). Thus, the goal of this study is to investigate how environmental concern influences customer attitudes toward green products, namely electric bicycles.

2. Literature Review

2.1 Attitude Towards Green Product

Individual attitude refers to a person's evaluation of an action as desirable or undesirable (Yadav & Pathak, 2016). Attitude is described as an individual's overall favorable or negative judgment of the performance of a behavior. Subjective norms are based on an individual's sense of whether key people in their lives want them to engage in that activity, whereas perceived behavioral control indicates how much control individuals believe they have over that conduct (Wang et al., 2013). Overall, consumers' environmental awareness has a favorable impact on pro environmental purchasing behavior, and people who are well-versed in environmental issues are more willing to pay a higher price for more ecologically friendly products (Lee et al., 2012). In other words, environmentally conscious shoppers will seek out eco-friendly products even if it means spending extra money on them.

2.2 Environmental Concerns

Attitude toward the environment is a complicated mental state that includes ideas, attitudes, values, and personality traits associated with the desire to act in an environmentally friendly

manner or engage in environmentally friendly conduct (Barber et al., 2012). Environmental concern is described as an attitude toward environmental preservation (Wei et al., 2018), and it has a significant impact on green product purchasing decisions among customers with high eco-literacy (Nekmahmud & Fekete-Farkas, 2020).

2.3 Eco-Literacy

Ecoliteracy is the understanding and application of ecosystem concepts to humans in order to build a sustainable human society (McBride et al., 2013). Orr (1991) is a pioneer who coined the phrase "eco-literacy," which refers to knowledge of the overall health of nature. Wei et al., (2018) define eco-literacy as customers' awareness of environmentally friendly products, as well as their understanding of environmental issues and eco-friendly products (Cheah & Phau, 2011). The concept of environmental literacy, which involves not only knowledge about the environment and its concerns, but also attitudes, dispositions, sensitivity, and motivation, is thoroughly examined (Ramdas & Mohamed, 2014). Ecoliteracy can be defined as objective or subjective knowledge about the environment.

2.4 Environmental Concerns to Attitude Towards Green Products

Consumer demand for eco-friendly items is currently expanding. The usage of environmentally friendly items demonstrates a desire to reduce environmental damage in comparison to traditional products. According to certain studies, having a positive attitude toward the environment improves attitudes for ecologically friendly items. Green products represent efforts to reduce environmental impact. Consumer awareness of environmental issues leads to more positive sentiments toward eco-friendly items (Khoiriyah & Toro, 2018). However, environmental concerns over eco-friendly items might have a negative impact on customer sentiments toward these products (Sana et al., 2018). According to studies, customers with a high level of environmental concern have a positive attitude toward eco-friendly items, which is consistent with earlier research indicating that environmental concern influences purchase intentions (Tang et al., 2014). This study supports the notion that consumers who are aware of environmental issues and eager to assist in conservation efforts are more likely to buy environmentally friendly products.

2. 5 Eco-Literacy to Attitude Towards Green Products

Ecoliteracy is the understanding and application of ecosystem concepts to humans in order to establish a sustainable human society (McBride et al., 2013). Orr (1991) is a pioneer who coined the phrase "eco-literacy," which refers to knowledge of the overall health of nature. Ecologically competent civilizations are generally self-sufficient and do not harm the natural environment on which they rely (Häggström & Schmidt, 2020). Ecoliteracy advocates see it as a paradigm change that prioritizes holistic, systemic, complicated, and long-term environmental solutions. Furthermore, ecoliteracy requires consumers to comprehend the impact of sustainable products on the ecosystem. According to Bhutto et al. (2021), consumers' behavior, beliefs, attitudes, and intentions change as they become more aware of environmental challenges. The findings indicate that ecoliteracy is highly associated with consumer attitudes and behavior patterns (Cheah & Phau, 2011). Ecoliteracy has a considerable and positive influence on customers' environmental

sentiments. Another study found that ecoliteracy positively influences millennial consumers' attitudes and buying intentions (Tiwari, 2023).

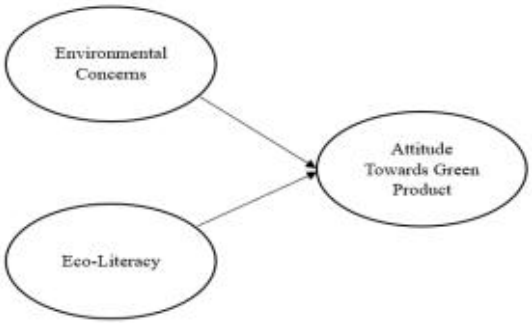

Image 1. Research Framework

3. Research Methodology

This sort of research incorporates a quantitative method with a survey approach, with a questionnaire serving as the primary data collection tool. The purpose of this study is to analyze causal linkages and test hypotheses about the impact of eco-literacy and environmental concerns on attitudes toward green products in order to provide an overview of the research object. This study's population consists of all Purwokerto electric bicycle buyers. Because the population under study is limitless, the quantity and characteristics of responders cannot be exactly specified. This study used purposive sampling, with a total of 100 respondents. To make data collecting easier, questionnaires were distributed via Google Form. The Likert scale, spanning from 1 (strongly disagree) to 5 (strongly agree), is used to assess individual attitude based on respondents' responses (Suliyanto, 2005). The acquired data is next evaluated for validity and reliability. Once all of the data has been declared legitimate, multiple regression analysis is used to determine the relationship between the hypothesized variables. To verify the accuracy of identifying significant associations, data was analyzed using SPSS statistical software.

4. Results

4.1 Validity

Validity testing is a method that determines the validity and reliability of a questionnaire. A valid questionnaire typically has a high level of validity. A questionnaire is considered valid if the questions in it give information about what the questionnaire is designed to measure. The significance test is performed by comparing the estimated r value to the table r value for degrees of freedom (df) = n - 2, where n is the number of samples used. The sample size in this study is (n) = 60, and the df may be calculated as 60 - 2 = 58. With df 58 and a significance level of 5% (alpha = 0.05), the table r value is 0.2542 (Ghozali, 2016).

Table 1. Validity Test

Variable	Indicator	Pearson Corelation	R Table (Two Tale)	Explanation
Environmental Concerns	EC1	0.417	0.2542	Valid
	EC2	0.637	0.2542	Valid
	EC3	0.697	0.2542	Valid
	EC4	0.715	0.2542	Valid
	EC5	0.777	0.2542	Valid
	EL1	0.722	0.2542	Valid

Variable	Indicator	Pearson Corelation	R Table (Two Tale)	Explanation
Eco-Literacy	EL2	0.643	0.2542	Valid
	EL3	0.778	0.2542	Valid
	EL4	0.821	0.2542	Valid
	EL5	0.631	0.2542	Valid
	EL6	0.747	0.2542	Valid
	EL7	0.587	0.2542	Valid
Attitude Towards Green Product	ATGP1	0.736	0.2542	Valid
	ATGP2	0.510	0.2542	Valid
	ATGP3	0.643	0.2542	Valid
	ATGP4	0.461	0.2542	Valid
	ATGP5	0.652	0.2542	Valid
	ATGP6	0.613	0.2542	Valid

Source: SPSS data processing 2024

According to Table 1, the validity test results for all variables show that all statement items have a Corrected Item-Total Correlation value (0.417 - 0.821) > r-table (0.2542), indicating that these statement items are valid and suitable for use as instruments for measuring research data related to the influence of eco-literacy and environmental concerns on attitude toward green products.

4.2 Reliability

The reliability test is designed to verify the consistency and correctness of questionnaire answers or data received from respondents, indicating the measuring instrument's reliability. To assess reliability, the Cronbach Alpha statistical test is performed. A variable is deemed dependable if its Cronbach Alpha value exceeds 0.7, however 0.6 is acceptable (Ghozali, 2011).

Table 2. Reliability Test

Variable	Cronbach Alpha	Critical Value	Explanation
Environmental Concerns	0.666	0.6	Reliabel
Eco-Literacy	0.825	0.6	Reliabel
Attitude Towards Green Product	0.636	0.6	Reliabel

Source: SPSS data processing 2024

The results of the variable reliability test demonstrate that all statements are reliable because they have a Cronbach's Alpha coefficient value > 0.6, implying that all variables in this study are considered reliable.

4.3 Multiple Linear Regression and T Test

Table 3. Multiple Linear Regression

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	6.466	2.658		2.432	.018
	Environmental Concerns	.528	.151	.439	3.491	.001
	Eco-Literacy	.246	.101	.307	2.442	.018

a. Dependent Variable: Attitude Towards Green Product

Source: SPSS data processing 2024

In the table above, the multiple linear regression calculation was done using a computer program:
$Y = 6.466 + 0.436\ X_1 + 0.307\ X_2$
Explanation:
Y: Attitude Toward Green Products
X_1: Environmental Concerns.
Environmental concerns. The coefficient (β_1 = 0.439) indicates that an increase in environmental concerns leads to a 0.439 rise in attitudes toward green items, provided other factors remain constant.
X_2: Ecoliteracy.

Eco-literacy the coefficient (β_1 = 0.307) indicates that an increase in eco-literacy leads to a 0.307 rise in attitude towards green products, as long as other variables stay constant. 6.466 = Constant value; this shows the average level of attitude toward green products without regard for eco-literacy or environmental concerns.

Based on the t-test results, which show that the computed t value is greater than the table t value (3.491 > 2.001), and the t-test significance value is 0.001, it is possible to conclude that environmental concerns have a positive and significant effect on attitudes toward green products. Another t-test result, with a computed t value greater than the table t value (2.442 > 2.001) and a t-test significance value of 0.018, suggests that eco-literacy has a positive and significant effect on attitudes toward green products.

4.4 F Test

Table 4. F Test

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	206.706	2	103.353	23.945	.000[b]
	Residual	246.027	57	4.316		
	Total	452.733	59			

a. Dependent Variable: Attitude Towards Green Product
b. Predictors: (Constant), Eco-Literacy, Environmental Concerns

The F-test determines whether independent factors have a simultaneous (joint) effect on the dependent variable. (terikat). Based on the results of the ANOVA or F test, the calculated F value is 23.945, with a significance level of 0.000 or less than 0.05. Eco-literacy and environmental concerns both influence views toward green items.

5. Discussion

Environmental issues positively effect attitudes towards green products, with a regression coefficient of 0.439 and a significance value of 0.001 ($p < 0.05$). H1 was accepted. This suggests that the greater an individual's environmental care, the more favorable their opinion toward environmentally friendly products, in this case, electric bicycles.

This finding is consistent with prior research, which has shown that environmentally conscious consumers have a positive attitude toward eco-friendly items (Tang et al., 2014). According to

Khoiriyah & Toro (2018), increasing consumer awareness of environmental issues will lead to more positive views toward eco-friendly products. This could be due to a growing knowledge of the environmental impact of their purchasing decisions, which pushes them to be more supportive and positive toward more ecologically friendly alternatives such as electric bicycles.

Eco-literacy had a positive and significant impact on attitudes towards green products, with a regression coefficient of 0.307 and a significance value of 0.018 ($p < 0.05$), supporting H2. This suggests that the better an individual's eco-literacy, the more positive their opinion toward environmentally friendly products like electric bicycles. These findings are consistent with earlier research, which has shown that eco-literacy correlates considerably with consumer attitudes and behavioral tendencies (Cheah & Phau, 2011). Tiwari (2023) demonstrates that ecoliteracy has a large and favorable impact on customers' environmental sentiments. This could be attributed to a better grasp of environmental issues and the influence of items on ecosystems, resulting in a stronger respect for eco-friendly products like electric bicycles.

6. Conclusion

This study investigates the impact of environmental concerns and eco-literacy on attitudes toward green products, notably electric bicycles. According to the investigation' findings, environmental concern has a favorable and significant impact on consumer attitudes toward eco-friendly items.

This demonstrates that the greater an individual's awareness of environmental issues, the more positive their attitude about electric bicycles as an environmentally responsible mode of transportation. Ecological literacy has also been shown to have a favorable and significant influence on consumer sentiments toward environmentally friendly items. This research suggests that the more an individual's grasp of ecological concepts and the environmental impact of products, the more favorable their attitude toward the use of electric bicycles. Both criteria, environmental concern and ecological literacy, have a major impact on customer attitudes toward environmentally friendly items.The findings of this study highlight the significance of increasing environmental consciousness and ecological understanding in society in order to foster a positive attitude toward eco-friendly items such as electric bicycles. These findings can help policymakers and industry actors develop strategies to promote the use of environmentally friendly transportation in the future.

This study has significant limitations, including a narrow geographical scope (Purwokerto), a small sample size, and a focus on only two independent factors. There are various potential avenues for future investigation. First, undertake a longitudinal research to track changes in customer attitudes about environmentally friendly items over time. Second, broaden the geographical scope to compare outcomes across multiple regions. Third, look into other elements that may influence customer views, such as socio-economic status or the impact of social media. Fourth, perform a comparison of different types of environmentally friendly products. Finally, shift the focus from attitudes to real purchasing and usage habits for ecologically friendly products. Future research can provide a more comprehensive understanding of the elements influencing customer attitudes toward environmentally friendly products by resolving these constraints and investigating new opportunities.

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