

## Green Marketing: The Role of Environmental Knowledge As A Moderating Variable

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**ABSTRACT:** In this era of sophisticated and knowledge-based technology, public awareness of environmental issues has increased significantly throughout the world. Problems related to the environment and its negative impacts are currently a global issue. This research utilizes four dimensions of the green marketing mix, as well as environmental knowledge and purchase intentions. The aim of this research is to analyze the influence of green marketing mix elements, namely product, price, promotion and place, on the purchasing intentions of generation Z consumers in Sumenep. Then, what is the role of environmental knowledge as a moderating variable in the relationship between green marketing mix and purchase intention? The approach used is a quantitative approach. The location of this research was carried out in Sumenep Regency. The objects used in this research are environmentally friendly products. The number of respondents involved in this research was 192 people, who were selected using the purposive sampling method. Data was collected by distributing questionnaires directly to respondents. Hypothesis testing was carried out using multiple linear regression analysis and Hierarchical Moderated Regression (HRM). The research results show that the green product variable does not have a significant influence on consumer purchase intentions. Meanwhile, the green price, green place and green promotion variables partially show a significant positive influence on purchase intention. Testing the moderating effect of environmental knowledge shows that the environmental knowledge variable moderates the influence of green products, green price, and green promotion on purchase intentions, but environmental knowledge does not moderate the influence of green places on consumer purchase intentions.

**Keywords:** Green Marketing Mix, Environmental Knowledge, Purchase Intention



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## INTRODUCTION

In this era of sophisticated and knowledge-oriented technology, public awareness of environmental issues has increased significantly. People are also now starting to realize that

environmental damage can result in disaster for their environment, not only for health but even for human survival (Sembiring, R, 2021). Consumer awareness of the environment also has increased rapidly. Problems related to the environment and its negative impact on the environment. Global issues such as global warming, pollution, and solid waste that is difficult to decompose have become major concerns throughout the world. Many companies and consumers are now increasingly sensitive to the need to switch to environmentally friendly products. On the other hand, green marketing is still an area that receives little attention from academics. This causes us not to see many significant contributions in this field (Mahmoud et al., 2017).

The waste problem in Indonesia is a very serious issue. This is based on data from the Ministry of Environment and Forestry in 2023 that waste from food waste reached 41,516 tonnes, plastic waste 18,328 tonnes, paper/cardboard 12,365 tonnes, and wood/twigs/leaves 11,545 tonnes. Then the most common source of waste comes from households with a figure of 4,069.5 tons. Traditional market waste totaled 2,141.4 tons, followed by commercial centers at 1,875.7 tons, designated areas with 753.5 tons, offices accumulating 683.1 tons, public facilities contributing 645.1 tons, and other sources accounting for 317.5 tons (sipsn.menlhk.go.id). Meanwhile, Serious problems related to waste also occur in areas in Sumenep district. The waste problem that occurs in mainland and island areas has similar problems (Syabana et al., 2023).

This research is urgent to carry out if you look at the data listed above. One way to reduce this problem is by conducting studies on consumer knowledge and behavior towards environmentally friendly products. The research results obtained can then provide recommendations for formulating strategies so that the waste problem can be resolved. Therefore, one of the aims of this research is to contribute to solving this problem.

This research uses the dimensions of the green marketing mix, namely green product, green price, green place and green promotion in influencing generation Z consumers' purchasing intentions towards environmentally friendly products. Number of studies indicate a positive correlation between green marketing mix activities and consumer purchasing behavior regarding environmentally friendly products (Nekmahmud & Fekete-Farkas, 2020; Shabbir, M et al., 2020). Apart from that, this research also uses a moderating variable, namely knowledge of the environment. Knowledge of the environment plays a role in the influence of the green marketing mix on purchasing intentions. The higher the consumer's knowledge of the environment, the higher the influence of the green marketing mix dimensions on purchasing intentions. On the other hand, the lower the environmental knowledge, the more influence the green marketing mix will have on purchasing intentions for environmentally friendly products (Nekmahmud et al., 2022).

Environmentally friendly products are a choice for consumers in facing existing environmental problems. Therefore, these products can increase customer motivation to create value in consumers' minds, as well as influence their decisions in making purchases (Anjani & Surya Perdhana, 2021). Some environmentally friendly products that are currently trending include electric cars that have lower emissions, energy efficient TVs that save electricity usage, sustainable fashion products that use raw materials from natural resources with environmentally friendly production, recycled plastic, sustainable products that using recycled materials and

products with ecolabel certification, which means the product has been accepted by institutions or organizations working on environmental issues (Hasibah & Purwanto, 2024)

The empirical problem raised in this research is the inconsistency of previous research results regarding the influence of green marketing mix on purchase intentions. According to (Mardius et al., 2023), (Sentoso, M, 2021), (Munamba & Nuangjamnong, 2022) found that there was a positive and significant influence of green places on purchase intentions but (Atmojo, 2020) found the opposite. Apart from that, from a practical perspective, referring to the literature study conducted, it was found that there had been no previous research that had addressed the topic of Generation Z using the environmental knowledge variable as a moderating variable of the influence of the 4 dimensions of the green marketing mix on purchase intentions. On the other hand, green marketing is a field that is most neglected by academics so that we cannot see many significant contributions in this field (Mahmoud et al., 2017).

The formulation of the problem in this research is whether the dimensions of the green marketing mix (green product, green price, green place, green promotion) influence purchase intentions and whether environmental knowledge can moderate the influence of the green marketing mix dimensions on purchase intentions. This research aims to find out how green marketing mix elements influence the purchasing intentions of generation z consumers in Indonesia. The role of knowledge about the environment is very important in the context of the relationship between the green marketing mix and consumer purchasing intentions.

The problem solving approach taken to resolve the problem was to conduct research by raising the topic of green marketing mix dimensions on purchase intentions using environmental knowledge as a moderating variable. The novelty in this research is that there has been no research that uses the research model as developed in this research in the context of Generation z studies and was conducted in Sumenep, Indonesia. The advantages of problem solving carried out. This research develops the concept of green marketing mix dimensions on consumer purchasing intentions which are moderated by environmental knowledge.

## **METHOD**

### **Research Design**

This research applies a confirmatory quantitative approach by collecting and managing data obtained from respondents through questionnaire distribution. The collected data is then processed and interpreted to confirm and obtain research results that can be compared with previous studies.

### **Variables and Indicators**

The indicators used in this research were adapted from (Mahmoud et al., 2017). The variables and indicators used in this research are:

**Table 1**  
**Variables and Indicators**

Variable	Item
<b>Green Product</b>	<ol style="list-style-type: none"> <li>1. The company concentrates on producing products that have the smallest percentage of adverse impacts on humans.</li> <li>2. The company contributes to producing products with less pollution.</li> <li>3. There is effective control over the products produced by the company.</li> <li>4. The company makes products free from strong toxic ingredients.</li> </ol>
<b>Green Price</b>	<ol style="list-style-type: none"> <li>1. It is known that companies increase the price of products that have negative, detrimental uses that occur due to misuse.</li> <li>2. The price of environmentally friendly products is quite high</li> <li>3. The price gap between environmentally friendly products and ordinary products is very large</li> <li>4. Prices for environmentally friendly products are in accordance with their quality</li> </ol>
<b>Green Place</b>	<ol style="list-style-type: none"> <li>1. Environmentally friendly products are sold at well-known agents.</li> <li>2. The company makes shipping easy.</li> <li>3. Companies are interested in dealing with environmentally friendly agents</li> <li>4. The shop in the company is clean.</li> </ol>
<b>Green Promotion</b>	<ol style="list-style-type: none"> <li>1. The company dedicates a special day to the environment.</li> <li>2. The company supports activities (Seminars and conferences) regarding the environment.</li> <li>3. The company provides instructions to consumers regarding when to use products that do not damage the environment.</li> <li>4. The company supports environmental centers.</li> </ol>
<b>Environmental Knowledge</b>	<ol style="list-style-type: none"> <li>1. I know that I am purchasing a product that is safe for the environment.</li> <li>2. I am very knowledgeable about environmental issues.</li> <li>3. I know a lot of information about environmentally friendly products</li> </ol>
<b>Purchase Intention</b>	<ol style="list-style-type: none"> <li>1. I plan to look for environmentally friendly products in the future</li> <li>2. I will spend more time looking for environmentally friendly alternatives to the products I usually buy.</li> <li>3. I plan to spend some time browsing the company's website to learn more about environmentally friendly product options.</li> <li>4. I will spend more time looking for environmentally friendly alternatives to the products I usually buy in the future.</li> <li>5. I plan to continue purchasing environmentally friendly products in the future.</li> </ol>

### Sample and sampling technique

The sample size used is 5 to 10 times the number of indicators (Hair et al., 2014). Therefore, the total number of respondents is 192, calculated by multiplying 24 items by 8 respondents each. The sample was determined using a non-probability sampling method with purposive sampling. The criteria for respondents in this research are: knowing about environmentally friendly products, never purchasing environmentally friendly products, and aged between 18 – 27 years.

Furthermore, data collection in this research used survey techniques by distributing questionnaires.

### Data Analysis

Instrument Test Validity testing was carried out using confirmatory factor analysis. In CFA, an item is declared valid if it has a factor loading value  $\geq 0.5$ . Apart from that, other requirements that need to be met are the KMO MSA value, Barlett's test of sphericity and no cross loading. The KMO MSA value requirement is  $> 0.5$ , while Barlett's test of sphericity must be significant  $< 0.05$  (Hair et al., 2018). The KMO-MSA and BTS values indicate that the instruments used meet the requirements so that the test can be carried out properly. Reliability testing in this study used Cronbach alpha. A research instrument can be said to be reliable if it has a Cronbach alpha (CA) value  $\geq 0.70$  (Hair et al., 2014). The tests were carried out using SPSS 26.

### Hypothesis Testing

#### a. Multiple Linear Regression Test

Hypotheses 1 to 4 were tested by applying multiple linear regression techniques.

#### b. Moderation Testing

Hypothesis testing 5-8 is carried out by applying the Hierarchical Moderated Regression (HRM) technique introduced by (Anderson, 1986). This testing process consists of three steps, namely:

1. Regression of the independent variable (X) against the dependent variable (Y) as the first model.
2. Regression of the independent variable (X) and moderating variable (M) on the dependent variable (Y) as the second model.
3. The final step is the regression of the independent variable (X), moderating variable (M), and the interaction between the independent and moderating variables (X and M) on the dependent variable (Y) as the third model.
- 4.

## RESULT AND DISCUSSION

### Respondent Characteristics

The characteristics of the respondents can be explained in table 2 below:

Table 2			
Respondent Characteristics			
Type	category	Total	Percentage
Gender	Man	112	58,3
	Women	80	41.7
Age	19 years old	3	1.6
	20 years old	58	30.2
	21 years old	80	41.7
	22 years old	39	20.3
	23 years old	7	3.6
	24 years old	5	2.6

<b>Education</b>	Senior High School	147	76.6
	Bachelor	45	23.4
<b>Occupation</b>	Student/Students	183	95.3
	Private sector employee	4	2.1
	Businessman	4	2.1
	Civil servants	1	.5
<b>Income</b>	≤ Rp1.000.000.	176	91.7
	Rp1.000.001 - 2.500.000.	11	5.7
	Rp2.500.001 - 5.000.000.	2	1.0
	≥ Rp5.000.001.	3	1.6

Source: processed primary data (2024)

Based on table 2 presented, it can be seen that the number of male respondents reached 112 people (58.3%), while the number of female respondents was 80 people (41.7%). In terms of age, the most respondents were those aged 21 years, with a total of 80 people (41.7%). Furthermore, there were 58 respondents aged 20 years (30.2%), and respondents aged 19 years were the fewest, namely 3 people (1.6%). In terms of final education, respondents with a high school educational background dominated with 147 people (76.6%), while those with a bachelor's degree were 45 people (23.4%). For the job category, the majority of respondents were students, as many as 183 people (95.3%), followed by private employees and entrepreneurs with 4 people each (2.1%), and ASN with 1 person (0.5%). Regarding income, respondents with income ≤ IDR 1,000,000 dominate with 176 people (91.7%), followed by the income group of IDR 1,000,001 - 2,500,000 with 11 people (5.7%), income ≥ IDR 5,000. 001 as many as 3 people (1.6%), and IDR 2,500,001 - 5,000,000 as many as 2 people (1.0%).

### Instrument Quality Test

#### Validity Test

Validity testing in research was carried out using Confirmatory Factor Analysis (CFA). The test results show that the KMO-MSA value is 0.886, meaning the value is > 0.05. The BTS value is 0.000 which means <0.05.

**Table 3.**  
Confirmatory Factor Analysis

	Component					
	1	2	3	4	5	6
G.Pro-1					.712	
G.Pro-2					.732	
G.Pro-4					.802	
G.Pri-1				.528		
G.Pri-2				.820		
G.Pri-3				.789		
G.Pri-4				.725		
G.Pla-1						.747
G.Pla-2						.703

G.Pla-3	.637
G.Prom-1	.691
G.Prom-2	.715
G.Prom-3	.610
G.Prom-4	.622
K-1	.681
K-2	.677
K-3	.788
PI-1	.581
PI-2	.646
PI-3	.729
PI-4	.777
PI-5	.731

Source: processed primary data (2024)

Table 3 above shows that each item used has a factor loading value that exceeds 0.5, and no cross loading was detected. Two items were removed from testing because they did not meet the established validity criteria, namely item 3 from Green Products and item 4 from green place. The test results show that each item has been grouped with items that measure the same variable and has no correlation with items that measure different variables. Therefore, the instrument used meets the criteria for convergent and discriminant validity.

#### Reliability Test

The results of the reliability test in this research are explained in the table below:

**Tabel 4**  
Reliability Test

Variabel	Cronbach Alpha	Jumlah Item
<b>Green Product</b>	0,726	3
<b>Green Price</b>	0,731	4
<b>Green Place</b>	0,750	3
<b>Green Promotion</b>	0,872	4
<b>Environmental Knowledge</b>	0,814	3
<b>Purchase Intention</b>	0,860	5

Source: processed primary data (2024)

The reliability test table above shows that all cronbcah alpha values for each variable are above 0.70. (Hair et al., 2014) said that a Cronbach alpha value greater than 0.70 is considered to have a good reliability value. Thus, all variables used in this research were declared reliable.

Multiple linear regression analysis was used to test hypotheses 1 to 4. On the other hand, hypotheses 5 to 8 were tested using Hierarchical Moderated Regression (HRM). The results of this test are presented in tables 6 and 7.



**Table 5**  
Hypothesis Testing with Simple Regression

Hypothesis	(B)	t-value	Sig.	Result
<b>H1: Green Product influences purchase intention</b>	.105	1.634	.104	Not Supported
<b>H2: Green Price influences purchase intention</b>	.182	3.106	.002	Supported
<b>H3: Green Place influences purchase intention</b>	.205	2.946	.004	Supported
<b>H4: Green Promotion influences purchase intention</b>	.386	5.569	.000	Supported

Source: Primary Data was processed (2024)

### Hypothesis 1:

Table 5 above shows that the calculated t value for hypothesis 1 is 1.634 with a significance level of 0.104 ( $p > 0.05$ ). This indicates that partially, environmentally friendly product variables do not have a significant influence on consumer purchasing intentions. Thus, hypothesis 1 is rejected. The findings of this research are not in line with the results of previous research conducted by (Karunarathna et al., 2020); (Farradia et al., 2021) which shows that green products have a significant influence on consumer purchasing intentions.

This research shows that environmentally friendly products do not have a significant impact on consumer purchasing intentions. Although the hypothesis proposed in this study was rejected, the results are still supported by empirical evidence from previous studies. Research conducted by (Halim & Iskandar, 2019) also found that environmentally friendly products had no significant effect on purchase intentions. This finding is in line with research by (Purnamawati et al., 2020) which also confirms that environmentally friendly products do not have a significant influence on purchase intentions.

The findings of this research are certainly very interesting findings to study. This research opens up empirical insight that green products do not always have a significant influence on the purchasing intentions of generation z consumers. Several things that consumers consider are whether the company is truly focused on producing or selling products that have the least negative impact on the environment. Therefore, it is indeed necessary to convey education about the focus of a company to consumers so that they are truly confident in the image of the company or shop that produces and sells environmentally friendly products. Apart from that, companies or shops also actually sell products that do not contain toxic ingredients. These results illustrate that not all consumers are sure that companies really produce products that are 100% free from pollution and dangerous ingredients.

### Hypothesis 2:

Based on Table 5 presented, the calculated t value for hypothesis 2 was recorded at 3.106 with a significance level of 0.002 ( $p > 0.05$ ). This shows that the green price variable significantly influences consumers' purchasing intentions partially. Therefore, hypothesis 2 is declared accepted. The results of this study are in line with the findings of (Mahmoud, 2018) which states that green prices have a significant impact on consumer purchasing intentions.



The results of this research are consistent with a study conducted by (Mahmoud et al., 2017) which indicated that green prices had a positive and significant effect on intention to purchase. This research also strengthens the findings of previous researchers who also stated that purchase intention can be influenced by green prices (Farradia et al., 2021; Karunarathna et al., 2020). This is the case with research conducted by (Kartawinata et al., 2020) which also found the same results as this research.

This research found that green prices are one of the most important factors that consumers consider when making purchases (Hasibah & Purwanto, 2024). Consumers' intention to make purchases can be created with green prices. Consumers in Sumenep district now understand that it is normal for green products to have high prices. Consumers also realize that the prices set for environmentally friendly products have been adjusted to the quality of the environmentally friendly products.

### **Hypothesis 3:**

Table 5 above shows that the calculated t value for hypothesis 3 is 2.946 with a significance level of 0.004 ( $p > 0.05$ ). This value indicates that the green place variable has a partially significant influence on consumer purchase intentions. Thus, hypothesis 3 can be accepted. The findings of this research support (Munamba & Nuangjamnong, 2022) statement, which states that green places are one of the factors that influence the purchasing intentions of generation Z consumers.

This research is in line with a study conducted by (Mardius et al., 2023) which found that green places have a positive and significant effect on purchase intentions. The results of this research also strengthen the findings from (Sentoso, M, 2021) which stated that purchase intentions can be influenced by green prices. Apart from that, research by (Kartawinata et al., 2020) also shows that green places can influence purchase intentions.

This research is in line with a study conducted by (Mardius et al., 2023) which found that green places have a positive and significant effect on purchase intentions. The results of this research also strengthen the findings from (Sentoso, M, 2021), which stated that purchase intentions can be influenced by green prices. Apart from that, research by (Kartawinata et al., 2020), also shows that green places can influence purchase intentions.

This research found that green places are one of the most important factors that consumers consider when making purchases (Mahmoud, 2018). Consumers in Sumenep district now understand that environmentally friendly products are sold in places that can be trusted and have high credibility. good for selling environmentally friendly products. Consumers also feel that to get environmentally friendly products there is no need to make more effort. They convey that they can easily get the environmentally friendly products they want. Consumers in Sumenep district also feel that the shop where they get environmentally friendly products has a clean and comfortable environment.

### **Hypothesis 4:**

Table 5 above shows that the calculated t value from hypothesis 3 is 5,569 with a significance level of 0.000 ( $p > 0.05$ ). This value shows that partially the green promotion variable has a significant effect on consumer purchase intentions. Therefore, hypothesis 4 is declared accepted. The results of this research confirm the statement of (Kartawinata et al., 2020), which states that

green promotion is one of the factors that can influence consumer purchasing intentions. Promotions carried out can create consumer decisions to make purchases (Susanti et al., 2023).

This research is in line with research conducted by (Farradia et al., 2021) which found that green promotion has a positive and significant influence on purchase intention. This research confirms the results found by previous researchers (Mahmoud et al., 2017) who also said that purchase intention can be influenced by green promotion. Likewise, research conducted by (Mahmoud, 2018) also found that green food can influence purchase intention.

This research found that green promotion is one of the most important factors that consumers consider when making purchases. Consumers in Sumenep district believe that companies that make environmentally friendly products, stores where they get environmentally friendly products support activities that provide education to the public about the environment. The company also provides instructions to the public on how to use environmentally friendly products appropriately both from the time and how it is used.

**Table 6.**  
Hypothesis testing with moderating variables

Hypothesis	Equality	Adj. R <sup>2</sup>	(β)	T value	Sig.	Result
<b>H5: Environmental Knowledge moderates the influence of Green Product on purchase intention</b>	X1 → PI	<b>.153</b>	.396	5.948	.000	Supported
	X1 and M → PI	<b>.383</b>	.230	3.834	.000	
			.510	8.492	.000	
	X1, M, & interaksi X1-M	<b>.399</b>	-.123	-.776	.438	
	→ PI		<b>.289</b>	<b>2.633</b>	<b>.009</b>	
<b>H6: Environmental Knowledge moderates the influence of Green Price on purchase intention</b>	X2 → PI	<b>.123</b>	.358	5.281	.000	Supported
	X2 and M → PI	<b>.370</b>	.194	3.203	.002	
			.524	8.671	.000	
	X2, M, & interaksi X2-M	<b>.392</b>	-.158	-1.139	.256	
	→ PI		<b>.283</b>	<b>2.702</b>	<b>.008</b>	
<b>H7: Environmental Knowledge moderates the influence of Green Place on purchase intention</b>	X3 → PI	<b>.270</b>	.523	8.459	.000	Not Supported
	X3 and M → PI	<b>.420</b>	.325	5.256	.000	
			.438	7.090	.000	
	X3, M, & interaksi X3-M	<b>.424</b>	.154	1.170	.244	
	→ PI		<b>.306</b>	<b>2.817</b>	<b>.006</b>	
<b>H8: Environmental Knowledge moderates the influence of Green Promotion on purchase intention</b>	X4 → PI	<b>.349</b>	.594	10.176	.000	Supported
	X4 and M → PI	<b>.437</b>	.386	5.854	.000	
			.366	5.542	.000	
	X4, M, & interaksi X4-M	<b>.467</b>	.080	.724	.470	
	→ PI		<b>.043</b>	<b>.377</b>	<b>.706</b>	
			<b>.584</b>	<b>3.369</b>	<b>.001</b>	

Source: Primary Data was processed (2024)

## Hypothesis 5

Based on table 6, it can be seen that the adjusted R<sup>2</sup> value for model 2 is higher than the adjusted R<sup>2</sup> value for model 1 (.383 > .153). Apart from that, the adjusted R<sup>2</sup> value for model 3 is also greater than the adjusted R<sup>2</sup> value for model 2 (.684 > .685). Thus, the higher adjusted R<sup>2</sup> value of model 3 indicates that environmental knowledge can act as a moderator in the relationship between environmentally friendly products and purchase intentions. However, it is important to pay attention to the t-value and the significance of the interaction between environmentally friendly products and environmental knowledge. The t-calculated value for the interaction variable is 2.405 with a significance level of .017. This shows that the significance level of this interaction variable is less than 0.05. Therefore, it can be concluded that Hypothesis 5 finds support in this research. A person's knowledge of the environment can encourage people to make purchases (Purwanto & Isyanto, 2020).

This research shows that environmental knowledge acts as a moderator in the relationship between environmentally friendly products and purchase intentions. This finding is in line with the results of research conducted by (Mahmoud et al., 2017) which also indicates that environmental knowledge moderates the influence of environmentally friendly products on purchase intentions. This is in line with (Peng & Chen, A, 2015) statement that a person's knowledge will be able to strengthen a person's purchase intention towards the product.

Generation Z consumers in Sumenep district who have high knowledge about environmental issues are more likely to understand the benefits of green products. They can appreciate the advantages of this product compared to conventional products, so their purchasing intentions increase. In contrast, consumers with low knowledge may not see the difference between green products and regular products, so their influence on purchase intentions tends to be weaker. This statement is reinforced by the statement which explains that the green marketing mix approach is believed to increase the integration of environmental issues in all aspects of company activities, which in turn influences consumer purchasing intentions.

### **Hypothesis 6**

Referring to table 6, it is known that the adjusted R<sup>2</sup> value from model 2 is greater than the adjusted R<sup>2</sup> value from model 1 (.370 > .123). The adjusted R<sup>2</sup> value from model 3 is greater than the adjusted R<sup>2</sup> value from model 2 (.392 > .370). If you look at the adjusted R<sup>2</sup> value from model 3 which is greater than the value from model 2, this is a signal that environmental knowledge can moderate the influence of green prices on purchase intention. However, the t-value and the significance of the interaction between green prices and environmental knowledge also need to be considered. The t-calculated value of the interaction variable is 2.807 with a significance level of .006. This means that the significance level of this interaction variable is smaller than 0.05. Based on these results, it can be concluded that Hypothesis 6 is supported in this research.

This research finds that environmental knowledge moderates the influence of green prices on purchase intention. This research is in line with the research findings of (Mahmoud et al., 2017) that environmental knowledge moderates the influence of green prices on consumer purchase intentions. This is in line with the statement of (Mahendra & Nugraha, 2021) who explain that consumer knowledge of the environment can moderate the influence of green marketing,

especially price, on purchasing decisions, where consumers with high environmental knowledge are more accepting of higher prices for green products.

Knowledge of Generation Z consumers in Sumenep Regency understands the importance of sustainability. And it will help them understand why green products have higher prices. Environmentally conscious consumers tend to be willing to pay more because they understand the added value. However, consumers with low knowledge may view high prices as a barrier, resulting in their purchase intentions decreasing.

### **Hypothesis 7**

Based on table 6, it can be seen that the adjusted R<sup>2</sup> value for model 2 is higher than the adjusted R<sup>2</sup> value for model 1 (.420 > .270). Apart from that, the adjusted R<sup>2</sup> value for model 3 is also greater than the adjusted R<sup>2</sup> value for model 2 (.424 > .420). Thus, the increase in the adjusted R<sup>2</sup> value in model 3 compared to model 2 shows that environmental knowledge can act as a moderator in the relationship between green places and purchase intentions. However, it is important to pay attention to the t-value and the significance of the interaction between green place and environmental knowledge. The t-calculated value for the interaction variable is 1.472 with a significance level of 0.143. This shows that the significance level of this interaction variable is greater than 0.05. Therefore, it can be concluded that Hypothesis 7 is rejected in this study. However, environmental knowledge has a positive impact that can strengthen the influence of green places on purchase intentions, although this increase has not yet reached a significance level.

From various studies that have been conducted, it can be concluded that green places often have a positive effect on purchase intentions. However, in some cases, this influence is not significant, depending on the product context and consumer characteristics. Like research conducted by (Munawar, 2023) which found that green places have no effect on consumer purchasing intentions. The research above provides an explanation that the green place is not always a factor that can influence someone in making a purchase. For this reason, environmental knowledge is also a consideration for consumers.

This research finds that environmental knowledge does not moderate the influence of green places on purchase intention. This research contradicts the research findings of (Mahmoud et al., 2017) that environmental knowledge moderates the influence of green places on consumer purchase intentions. Several reasons why knowledge does not moderate the influence of green places on purchase intentions include factors such as low awareness, level of skepticism, or the dominance of external factors such as price and quality which may be the main reasons. Therefore, from the findings of this research it can be concluded that there are still consumers in Sumenep district who have low awareness of shops or companies that provide environmentally friendly products. They tend to think that anywhere they can get environmentally friendly products without having to provide requirements that the shop must adhere to an environmentally friendly system in all sectors.

### **Hypothesis 8**

Based on table 6, it can be seen that the adjusted R<sup>2</sup> value for model 2 is higher than the adjusted R<sup>2</sup> value for model 1 (.437 > .349). Apart from that, the adjusted R<sup>2</sup> value for model 3

is also greater than the adjusted R<sup>2</sup> value for model 2 ( $.467 > .437$ ). Thus, the increase in the adjusted R<sup>2</sup> value in model 3 compared to model 2 shows that environmental knowledge can function as a moderator in the relationship between green places and purchase intentions. However, it is important to pay attention to the t-value and the significance of the interaction between green place and environmental knowledge. The t-calculated value for the interaction variable is 3.369 with a significance level of .001. This shows that the significance level of this interaction variable is less than 0.05. Based on these findings, it can be concluded that Hypothesis 8 finds support in this research.

This research shows that environmental knowledge acts as a moderator in the relationship between green promotion and purchase intention. This finding is in line with the results of research conducted by (Mahmoud et al., 2017) which also indicates that environmental knowledge moderates the impact of green promotions on consumer purchase intentions. This is in line with (Rosyadi, L, N, 2024) explanation which states that consumer knowledge can moderate the influence of green marketing, especially green promotions and prices, on purchasing decisions, including in the context of green promotions. Consumer knowledge of environmentally friendly brands can make consumers aware of developing positive environmentally friendly marketing. Then, that's it will raise concerns about the environment so that they will be moved to protect the environment and also prevent damage to the environment (Suki, N, 2016) (Vitell, S, 2015) (Juwaheer, T et al., 2012).

Green promotion includes communications that highlight the company's commitment to sustainability, such as environmental certification, educational campaigns and also transparency in environmentally friendly operations. The knowledge of generations of consumers in Sumenep district plays an important role in assessing green promotions. Consumers who have insight into environmental issues are better able to verify company claims and respond positively. And this can increase the purchasing intentions of the consumers concerned. On the other hand, consumers with low knowledge may be skeptical of green promotions or even not understand the message conveyed so that the effect of promotions on purchase intentions is reduced.

## CONCLUSION

The conclusions that can be drawn from this research are (1) The three dimensions of the green marketing mix, namely green price, green place and green promotion, have a direct influence on consumers' purchasing intentions for environmentally friendly products (2). The dimension of the green marketing mix, namely green products, does not have a significant influence on consumer purchasing intentions. (3) Knowledge of the environment moderates the influence of the dimensions of the green marketing mix, namely green product, green place and green promotion, on consumer purchase intentions. (4) Knowledge of the environment does not moderate the influence of one of the dimensions of the green marketing mix, namely green place, on consumer purchase intentions of friendly products environment.

### **Limitations and Future Research Agenda**

The limitation of this research lies in the use of general environmentally friendly products. In the future, more focused research on certain products or brands is needed so that analysis can be more in-depth on environmentally friendly products or brands. Apart from that, this research was only carried out in one location, namely Sumenep Regency. Therefore, it is important to conduct further research in various regions in Indonesia so that this study can be more comprehensive. This research also only considers one moderating variable, namely product knowledge. Future research should explore the use of different moderating variables than those in this study. In addition, the development of a more holistic research model, such as combining moderation and mediation variables in one research framework, also needs to be carried out. This step will enrich the existing literature on environmentally friendly products.

### **Author's Contribution Statement:**

1. Edy Purwanto: Tasted to process data and compile publication manuscripts.
2. M. Munir Syam AR: Tasted to coordinate the data collection process.

### **Conflicts of Interest:**

There is no conflict of interest in this study. All carried out purely for research interests.

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