

# Green Paradox by Gender

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### ABSTRACT

This study aimed to obtain the findings, whether the attitude of acceptance, environmental awareness, knowledge about the benefits of green products have an impact on the intention to buy green products, or do not have an impact and even tend to be ignored (green paradox). This study involved 204 respondents using subgroup regression techniques to analyze the results. The findings of this study were the green paradox based on gender, including (1) The attitude of male and female gender acceptance towards green products did not affect the intention to buy green products; (2) Environmental awareness of male or female did not affect the purchase intention of green products; (3) The attitude of acceptance and environmental knowledge of males did not affect the intention to purchase green products. With the increasing of acceptance, knowledge, and care for the environment, it should encourage the desire to consume green products in order to maintain human health and long-term environmental sustainability. However, this research findings showed the opposite results, especially for males.

**Keywords:** *Attitude of acceptance; environmental awareness; environmental knowledge; gender; purchase intention; green product.*

### 1. INTRODUCTION

Global environmental damage is directly proportional to economic growth and human consumption patterns. Increased public consumption reflects a country's economic progress. But on the other hand, human consumption and industrial activities produce garbage and waste. Naturally, the earth's capacity to absorb the waste is only about 15%<sup>1</sup>. Deteriorating environmental conditions encourage the emergence of green movements. The role of government and personnel norms has a significant impact on their attitudes towards environmental sustainability<sup>2</sup>. On one side, it is the rise of green movements in various parts of the world, but on the other side, there is still a lot of garbage and waste resulting from economic progress that has a negative impact on environmental sustainability, such as ozone depletion, greenhouse effect, pollution on the marine and river environment, and the use of pesticides in agriculture that threatens public health<sup>28</sup>. One effort to preserve the environment is by consuming environmentally friendly products (green products). On one hand, there is a wide range of information and knowledge about the green movement, such as consuming and using environmentally friendly products, but on the other hand, people who have the knowledge are still ignorant of environmental sustainability. This condition is called the green product paradox.

The green product paradox that occurs encourages writers to examine such phenomenon of each gender in terms of several dimensions, namely the attitudes of acceptance, environmental awareness, and environmental knowledge versus the intention to buy green products. From previous research, the attitude of acceptance<sup>2</sup>, environmental awareness<sup>3</sup>; and good environmental knowledge<sup>3</sup> could

have a positive impact on the intention to purchase green products, but could also had no impact as well. The intention to purchase green products can be used to predict individual behavior in the future, which means that if consumers show a high purchase intention, it can be assumed that they will make an actual purchase<sup>4</sup>.

Based on previous research, the attitude of acceptance, environmental awareness, and public knowledge does not always have an impact on the intention and behavior of purchasing environmentally friendly products. With increasing knowledge and environmental awareness, it should encourage the desire to consume green products to maintain human health and long-term environmental sustainability. Green paradox research is important to do in order to encourage the creativity of green product marketing strategies and government policies. It is intended that the green paradox can be minimized, so that the environmental sustainability and public health can be improved.

### 2. LITERATURE REVIEW

#### 2.1. Definition of Green Products

Green products are the products that provide benefits to the environment<sup>5</sup>; products that are usually durable, non-toxic, and can be recycled<sup>6</sup>. Referring to the opinion of "The National Institute of Building Sciences: Whole Building Design Guide in Terrachoice" report (2010), green products are the products that have met certain criteria, including: can be decomposed naturally, reprocessed or updated (post-consumer and / or post-industrial); the production techniques and processes pay attention to environmental sustainability; durable and requires low maintenance costs;

the products that do not require a mixture of toxic / pollutant ingredients and do not consume excessive energy; throughout its life cycle, it does not cause environmental damage; energy saving.

Green products always refer to the products, services, and technologies that focus on the environmental sustainability and human health (downloaded from cleanlink.com)<sup>29</sup>. To make it easier for the general public to distinguish between green products and non-green products, eco-labeling or labeling is used. Ecolabeling is a statement or claim that shows the environmental aspects of a product and / or service (ISO 14020). Consumers buy green products based on labeling and information contained in the label<sup>7</sup>. In summary, the green products are produced, distributed, and consumed to reduce the effects of damage to the environment and have a positive impact on human health.

## **2.2. Acceptance Attitude and Intention to Buy Green Products**

The attitude of acceptance according to Schiffman & Kanuk (2005), is an expression of feelings (inner-feeling), which reflects whether someone accepts an object with pleasure or dislike it, and whether someone agrees or disagrees. Regarding green products, attitude measurement is used as a basis for evaluating consumer responses, preferences, interests, and acceptance of green products on the market. Measurements can be used to predict attitudes towards the acceptance of green products in developing green marketing programs<sup>9</sup>

This concept is also supported by the results of research by Cheah & Phau (2011) which stated that consumers who are "green product literate" will have a positive attitude towards green products. Furthermore, they also have the desire to buy such products. Han, Hsu, & Lee (2009) involving 371 respondents researching about the positive attitude towards green hotels that will give rise to a positive image of the company, which impacts on the intention to revisit the hotels; the intention to buy environmentally friendly products<sup>12</sup>. Based on the description above, the hypothesis was formulated, namely:

H<sub>1</sub>: Acceptance attitude has a positive effect on the intention to buy green products.

## **2.3. Environmental Awareness and Intention to Buy Green Products**

Environmental awareness is the ability of a person to realize the relationship between human activities and the surroundings in order to create a safe and healthy environment. The main characteristics of the concept of environmental awareness are being care for the environment, having the ability to identify the sources of environmental damage, having environmental knowledge, feeling responsible in preventing environmental damage, opposing the activities that damage the environment and working for the environment, and the last is the willingness

take part in activities related to the environment. People who have environmental awareness will also have an impact on better environment as well<sup>13</sup>

An increase in awareness can increase trust in the benefits of green products for consumers and the environment. The use of green products (environmentally friendly products) is a representation of awareness to reduce the damage to the environment rather than using conventional products<sup>14</sup>. Research conducted by Mohiuddin, Al Mamun, Syed, Masud, & Su (2018) among business school students, concluded that environmental knowledge and awareness have a positive effect on the intention to purchase green vehicles.

The study conducted by Junaedi's (2005) concluded that consumers' awareness of the environment influences their desire to pay premium prices for environmentally friendly products. The results of the study involving 208 respondents concluded that the environmental awareness and self-awareness appearance positively impact the purchase intention of organic-care products<sup>17</sup>. Organic products are categorized as environmentally friendly products (green products). Consumers having high awareness about the importance of using green products, caring for the environment, and preventing environmental destruction, will have a strong intention to buy green products and strive for the environmental sustainability. This means that the higher the level of awareness of someone towards the environment, the higher the intention to buy green products will be. Based on the explanation above, the following hypothesis was formulated as follows:

H<sub>2</sub>: Environmental awareness has a positive effect on the purchase intention of green products.

## **2.4. Environmental Knowledge and Intention to Buy Green Products**

The definition of environment according to the Law of the Republic of Indonesia Number 23 Year 1997, is a unity of space with all objects, power, state of living things, including human beings and their behavior, which affects the continuity of life and the welfare of humans and other living things. Meanwhile, the definition of knowledge is everything that is known and obtained based on experiences. So, environmental knowledge is everything that is known from the environment as a whole. Environmental knowledge can be defined as an attitude towards the environment that already exists or occurs<sup>18</sup>. Environmental knowledge is the knowledge that examines the relationship of living things with the environment that has an impact on human life and efforts to preserve the environment. Consumer confidence in green products is inseparable from his / her knowledge of the environment. This knowledge is obtained by finding various information related to the problems, symbols, and environmental issues. Consumer knowledge of green products and their impacts will encourage consumers' intention to consume the green products sustainably<sup>19</sup>.

This concept is supported by previous research conducted by Cheah & Phau (2011) who mentioned that, if consumers have the knowledge of environmental problems and issues that occur and know its negative impacts, then he / she is likely to be interested and has the intention to buy products that are environmentally friendly. Environmental knowledge can be obtained from various media. Communities who are educated and have good environmental insight, will have the intention to buy green products and preserve the environment. Based on those research findings, the following hypothesis was formulated as follows:

H<sub>3</sub>: Environmental knowledge has a positive effect on green product purchase intentions.

**2.5. Gender and Green Products**

Based on the research conducted by Dhawan (2008), women are more concerned about environmentally friendly products (green product), because they feel themselves more feminine and the society also stereotypes them as more feminine individuals, instead of men who tend to ignore the concern for green products in order to display a self-image that is "macho". This study also found that the men's willingness to engage in green behavior can be influenced by the confirmation of their masculinity.

The results of the research conducted on 6010 teenage respondents in Hong Kong, concluded that adolescent women have more positive attitudes towards the environment, environmental care, seriousness of environmental problems, personal responsibility to care for the environment, environmental protection, and buying behavior of green products than do men. Women are a good target market for green products compared to men by using emotional touch <sup>21</sup>.

The results of the study by Han et al. (2009) about eco-friendly hotel consumers towards purchasing decision-making, showed that the attitude of acceptance and environmental awareness in women towards buying intentions of green products is stronger than those in men. After being older, they also have more purchase intention towards green products compared to those of younger age. Previous research has found a relationship between the acceptance of the environment and the purchase of green products or purchase intentions. Gender does not distinguish the attitudes toward the environment <sup>2</sup>. Other studies have found differences in the attitudes of women and men in choosing healthy and nutritious eating type <sup>22</sup>. The results of the research conducted by Graceam Bennet & Freaya William (2011), showed that the awareness of

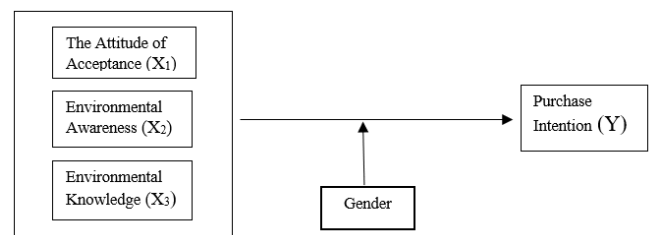
women in US towards the environment and green products was 82%, while men were only 18%. Based on the discussion above, the following hypotheses were formulated:

H<sub>4</sub>: The attitude of acceptance of green products in female is more influential on buying intentions of green products than that in males.

H<sub>5</sub>: The environmental awareness of green products in female is more influential on buying intentions of green products than that in males.

H<sub>6</sub>: The environmental knowledge of green products in female is more influential on buying intentions of green products than that in males.

From the description above, this research model could be described as follows:



**Fig. 1.** Research Model

**3. RESEARCH METHODOLOGY**

**3.1. Population and Sample**

This study distributed questionnaires by using Google form and physical form to the students and general public including housewives who consume or use environmentally friendly products. The number of questionnaires analyzed was 208. The sample collection method used in this study was non-probability sampling using purposive sampling technique <sup>24</sup>. The criteria that must be met in order to become the respondents in this study were the students and general public, and were at least 18 years old who had made purchases of green products at least once.

**3.2. Demographics and Data Analysis Techniques**

The characteristics based on demographics include gender, age, last education, and occupation. Demographic data obtained from the study can be seen in Table 1 below:

**Table 1.** The Demographic of Respondents

Component		Amount	%
Gender	Male	101	48.6%
	Female	107	51.4%
Education	Senior High School	100	48.1 %
	Diploma	12	5.8 %
	Bachelor	88	42.3 %
	Others	8	3.8 %
Age	18-20 years old	10	4.8 %
	> 20-25 years	156	75%
	> 25-30 years	16	18.8 %
	> 30 years old	3	1.4 %
Occupation	College Student	135	64.9 %
	Civil Servant	1	0.5 %
	Private Employee	42	20.2 %
	Others	30	14.4 %

Source: Processed primary data

Respondents answered the questionnaires including answer answers, answer choices, with a Likert-scale points ranging from 1 (strongly disagree) to 5 (strongly agree). Samples of environmental awareness questions include: We like to do greenery by planting a number of trees in barren places; We try to reduce the use of paper and tissue for the sake of the environment.

**4. RESULTS**

In Table 2, the validity test was conducted by using Confirmatory Factor Analysis (CFA), in which the value of KMO > 0.5 indicates that the question items in the questionnaire are valid. Reliability test was conducted by calculating the value of Cronbach's Alpha, in which the minimum value of 0.6 indicates a reliable research instrument <sup>25</sup>

**Table 2.** The Results of Validity and Reliability Tests of Acceptance Attitude, Environmental Awareness, Environmental Knowledge, and Purchase Intention

Acceptance Attitude. (AA)		Environmental Awareness (EA)		Environmental Knowledge (EK)		Purchase Intention (PI)	
AA1	0.761	EA2	0.625	EK1	0.600	PI1	0.585
AA2	0.654	EA3	0.533	EK2	0.501	PI2	0.793
AA3	0.829	EA4	0.597	EK3	0.641	PI5	0.537
AA4	0.819	EA5	0.702	EK4	0.746	PI6	0.672
AA6	0.760	EA7	0.718	EK5	0.505	PI7	0.766
		EA8	0.654				
Cronbach's Alpha: 0.829		Cronbach's Alpha: 0.719		Cronbach's Alpha: 0.635		Cronbach's Alpha: 0.705	

Source: SPSS results

The results of multiple regression coefficient tests for each studied variable can be seen in Table 3 below:

**Table 3.** The Results of Regression Coefficient Tests  
Dependent: Purchase Intention

Independent	All Genders		Male		Female	
	Beta	Sig	Beta	Sig	Beta	Sig
Constant	1.021	0.000	1.636	0.000	0.103	0.842
AA	0.023	0.751	0.117	0.302	0.281	0.007
EA	0.158	0.033	0.155	0.151	0.204	0.076
EK	0.347	0.000	0.083	0.372	0.438	0.000

Source: SPSS results

The hypotheses test results are displayed in Table 3, which will be further discussed by using Table 4 and Table 5. Table 4 displays the results of hypotheses testing by involving all the genders together, which can be concluded that:

1. Hypothesis 1 regarding the attitude of acceptance that affect the purchase intention of green products, was not supported, which was indicated by a significance value of 0.751 (greater than 0.05).

2. Hypotheses 2 and 3 about the environmental awareness and environmental knowledge, which positively influenced the purchase intention of green products, as indicated by the significance value of

0.033 and 0.000 (less than 0.05). These results supported the hypothesis formulated, as well as the results of previous studies.

**Table 4.** The Results of Hypotheses Testing for All Genders

Hypothesis	Coefficient	Sig	Decision
H <sub>1</sub> : Acceptance attitude has a positive effect on the intention to buy green products.	0.023	0.751	Unsupported
H <sub>2</sub> : Environmental awareness has a positive effect on the purchase intention of green products.	0.158	0.033	Supported
H <sub>3</sub> : Environmental knowledge has a positive effect on the purchase intention of green products.	0.347	0.000	Supported

Source: Data processed

In Table 5 below, the results of hypothesis testing by separating the male and female, can be concluded as follows:

1. Hypotheses 4 and 6 were accepted, in which the attitude of acceptance and environmental awareness of females influenced the purchase intentions of green products, while males did not. This is indicated by the significance values of 0.007 and 0.000 (less than 0.05).

2. Hypothesis 5 was not supported, because environmental awareness did not affect the purchase intention of green products among both females and males. This is indicated from the significance values of 0.076 (greater than 0.05). Consumers who have environmental awareness should be encouraged to try to protect the environment by buying green products, but the reality is not the case. This is called the green paradox.

**Table 5.** The Results of Hypothesis Testing per Gender

Hypothesis	Men		Women		Decision
	Coef	Sig	Coef	Sig	
H <sub>4</sub> : The attitude of acceptance of green products in female is more influential on buying intentions of green products than that in males.	0.117	0.302	0.281	0.007	Supported
H <sub>5</sub> : Environmental awareness of green products in female is more influential on buying intentions of green products than that in males.	0.155	0.151	0.204	0.076	Unsupported
H <sub>6</sub> : Environmental knowledge of green products in female is more influential on buying intentions of green products than that in male.	0.083	0.372	0.438	0.000	Supported

Source: Data processed

## 5. DISCUSSION AND CONCLUSIONS

The attitude of acceptance does not affect the purchase intention of green products. Attitude is an expression of feelings (inner feeling), which reflects a person's preferences, interests, and acceptance of green products that affect buying intentions. The test results rejected the first hypothesis, allegedly this is caused by the majority of Indonesian people still do not have a "sense of need / importance" to consume green products. Green paradox is caused by the absence of preferences, interests, urgency, and acceptance of green products and premium prices. This has resulted in the intention to purchase green products that was very low (not significant). It is also suspected that the majority of Indonesian people still have a disrespectful attitude to the environment, even though they actually know the dangers and negative impacts caused if they do not

change their lifestyle and consumption patterns. This indifference attitude to the environment has caused a lack of willingness to consume green products. This causes the low intention of consumers to buy green products. In the second and third hypotheses, each variable of environmental awareness and environmental knowledge had a positive effect on consumer purchase intentions for green products. This supported the hypotheses formulated, as well as the results of the previous studies. The fourth and sixth hypotheses were accepted, in which the attitude of acceptance and environmental awareness of female had an impact on the intention to buy green products, while male did not. Green paradox in men occurs, when those who have an attitude of acceptance, good knowledge of the environment, and know the dangers / negative impacts caused, but still do not intend to buy environmentally friendly products. This result

supported the previous research that females were more concerned about green products than were men. This is consistent with the research in several western countries that female expresses more positive attitudes towards the environment than does male<sup>26</sup>.

The fifth hypothesis was not supported, because environmental awareness does not affect the purchase intention of green products for both females and males. Consumers who have environmental awareness should be encouraged to try to protect the environment by buying green products, but in reality, the opposite happens. This is what is called the green paradox.

As conclusions of this study, the green paradox by gender include: (1) The attitude of acceptance of male and female gender towards green products has no effect on the intention to buy green products; (2) Environmental awareness of male or female does not affect the purchase intention of green products; (3) The attitude of acceptance and environmental knowledge of male does not affect the purchase intention of green products.

Significant influences of environmental awareness and environmental knowledge on the purchase intention of green products shows that the higher the awareness and the knowledge of consumers about environmental problems and their impacts, the higher the consumer's intention to start consuming and buying environmentally friendly products will be. The attitude of acceptance and environmental knowledge in female has a positive effect on the purchase intention of green products, whereas it does not happen in male.

## 6. LIMITATIONS AND FURTHER RESEARCH

This study has some limitations, in which there are differences in the results of analysis that do not support the results of previous studies such as the attitude of acceptance and environmental awareness variables. This is caused by the differences in analysis tools, observed objects, and variables contained in the previous studies. Suggestions for further research is to only choose the respondents who are already working and accustomed to consuming environmentally friendly products (green product). In addition, the convenience of consumers to get green products (distribution factor) can increase the consumption of such products. Future studies need to involve a greater number of respondents in order to acquire better test results.

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