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The impact of knowledge and perception on environmental stimulus and its effect on young generations attitude towards green products

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Abstract

It is vital to remember that public acceptance of pro-environmental behavior, as evidenced by the adoption of a sustainable lifestyle, is a critical issue in the fight to protect the environment. The purpose of this paper is to assess the young consumers knowledge and perception on green brand; examine their environmental attitudes and evaluate how these factors can affect their green product purchase intention. The result revealed that consumer knowledge and attitudes towards environment influenced their views on green products. It also demonstrated a strong link between green product perception and purchasing behaviour.

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Introduction

Economic and social progress over the previous century has been accompanied by environmental degradation, threatening the very systems that underpin our future development (United Nation, n.a.). This situation reveals the increasing need to promote environmental awareness. It is important to note in this context that public acceptance of pro-environmental conduct, as demonstrated by the adoption of a sustainable lifestyle, is a significant issue in the effort to safeguard the environment. Purchasing green products for everyday use is considered an effective technique for addressing environmental challenges (Yue *et al.*, 2020). A "green product" is one that incorporates recycling practices. It can be done by designing items that are made from recycled or recyclable resources and/or using less hazardous materials to help the environment (Shamsi & Siddiqui, 2017). Efficient green product development was crucial to the green marketing strategy. It has the potential to hasten the transition to a more sustainable environment for businesses and economies (Yan & Yazdanifard, 2014).

Consumer behaviour toward the environment has become a major concern on a global scale; it is manifested in all aspects, from energy conservation efforts to shifts in consumption patterns toward environmentally friendly products (Alamsyah *et al.*, 2018). Knowledge is one of the most important variables influencing consumer purchase decisions, and various marketing approaches have the ability to distribute awareness of green products (Wang *et al.*, 2019). "Green purchase intention" refers to consumer prediction towards the selection of environmentally friendly products (Othman & Rahman, 2014). According to White *et al.* (2019) in their article for the Harvard Business Review, consumers, particularly millennials, are increasingly expressing a desire for firms that are committed to social good and sustainability. On the contrary, the literature available on this area is insufficient, particularly from the Philippine perspective. Therefore, it is essential to learn more about the consumer's perspective on environmental issues and how they act, particularly when it comes to purchasing green or environmentally friendly products.

This paper aims to explore knowledge, perceptions, and attitudes towards the environment and green products and compare them to the demographics of young consumers. The study also explored the correlation between consumer knowledge, perception, and attitudes towards green purchasing. Various sectors of our economy will benefit from this research. It will assist businesses in developing marketing strategies by exhibiting the benefits of green product quality, both for consumers and for the environment. The findings of the study can potentially be used by the government in developing environmental policies.

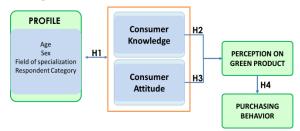## Materials and methods

Conceptual Framework

Fig. 1. Knowledge, Attitude and Perception towards Green Products Framework.

The study's framework outlines the variables that were utilized to analyze the green product purchasing behavior of the participants. Initially, the participants' profiles are established in terms of their age, sex, specialization, and work status. The participants' knowledge, perceptions, and attitudes toward environmentally friendly products were examined and analyzed to determine whether the aforementioned criteria are associated with their purchase behavior.

Research Design

The study utilized a correlation- descriptive research design. Correlational analysis is used to determine whether two variables are correlated. This entails determining whether an increase or decrease in one variable is associated with an increase or decrease in another.

It is important to realize that correlation does not imply causation. It is employed to determine the influence of the consumer knowledge and attitude on green products as well as their environmental attitudes as potential factors that affect the consumers green products buying behaviour.

Population and Samples

The study was conducted among millennials and generation Z in Cavite. Non-probability quota sampling technique was employed in determining the participants of the study. Non-proportional quota sampling is a technique that imposes a small sample size restriction on each category (Frey, 2018). It is not concerned with obtaining a figure that corresponds to the population's proportions.

In this study, participants and locations are selected nonrandomly according to a fixed quota or percentage of the population based on one or more characteristics. Primary data collection is accomplished through the distribution of questionnaires via face-to-face and online surveys.

Research Instruments and Data analysis

The study used a three-section structured survey questionnaire. The first section aims at gathering basic information about the respondents, while the second and third sections contain 96 items on a 5-point Likert scale that assess respondents' knowledge and perception of environmental stimuli and their effect on younger generations' attitudes toward green products. The researchers conducted a pre-test survey on 30 sample participants to ascertain the consistency of the items included in the questionnaires for quantitative data analysis. The analysis employed statistical techniques such as frequency and percentage distributions, arithmetic mean, weighted mean. The impact analysis was conducted using correlation and simple linear regression.

Results and discussions

After conducting the online data collection, the following tables were generated to summarize the major constructs in assessing the knowledge and

perception of green products and environmental attitudes of the younger generations as potential factors affecting their green purchasing behaviour.

Profile

A total of 318 respondents participated in the study. In terms of age, half of the respondents were aged 18 to 20 years old, while the majority were female. In terms of their field of specialization, 77.99 percent were in the business field and 72.96 percent were students.

Table 1. Profile of the respondents.

Profile	Frequency	Percentage
Age		
18 to 20 years old	161	50.63
21 to 23 years old	108	33.96
24 to 26 years old	35	11.01
27 to 30 years old	5	1.57
No response	9	2.83
Sex		
Male	116	36.48
Female	202	63.52
Field of Specialization		
Business Major	248	77.99
Non-Business major	70	22.01
Respondent Category		
Working Sector	86	27.04
Student	232	72.96

Consumer Knowledge

The knowledge of the consumers was assessed in terms of their understanding of environmental issues, their consumer responsibility that is related to environmental conservation, as well as their familiarity with the green scheme or green products and marketing. The result shows that the participants have moderate knowledge of the identified factors, with the highest rating on consumer responsibility. They are aware that humans interfere with nature, which often has disastrous consequences, and they consider the idea that people must live in harmony with nature in order to survive.

Table 2. Respondents' consumer knowledge assessment.

Consumer knowledge	weighted mean	standard deviation	Verbal interpretation
Environmental Issues	3.96	1.1446	moderate extent
Consumer responsibility	4.06	1.1827	moderate extent
Green scheme	3.87	1.2459	moderate extent
Grand Mean	3.96	1.1911	moderate extent

Consumer attitude

The assessment considered the cognitive beliefs, affective and conative dimensions of consumer attitude. The result shows that the participants' positive attitudes towards the environment are reflected to a moderate extent when purchasing products. In terms of their beliefs, they highly considered the importance of raising environmental concerns among citizens and protecting the environment, with a weighted mean of 3.44 (SD = 3.944).

In terms of their emotional affinity for nature, the participants indicated that they have pleasant feelings and positive attitudes towards spending time in the environment, with a weighted mean of 4.04 (SD-1.8036). On the cognitive factors, the study assesses both the previous buying attitude and the future intentions of the participants in contributing to the environment. The participants indicated that they somehow agreed on taking their own bags when buying in the supermarkets.

They also support retailers who are environmentally responsible and use the recycling center to recycle their household trash with a weighted average of 4.12 (SD = 2.7222). Moreover, the participants agreed that they are willing to buy products in a farmer's market and that they are striving to learn more about environmental issues and to be able to avoid buying products from companies that are ecologically irresponsible in selling their products, with a weighted average of 3.96 (SD = 2.1845).

Table 3. Respondents' consumer attitude assessment.

Consumer attitudes	Weighted mean	Standard deviation	Verbal interpretation
Cognitive Beliefs	3.44	3.9444	moderate extent
Affective factors	4.04	1.8036	moderate extent
Conative factors (environment related buying attitudes)	4.12	2.7222	moderate extent
Conative factors Intention towards the environment	3.96	2.1845	moderate extent
Grand Mean	3.89	2.8740	moderate extent

Consumer Perception NN Green Products

The study also assesses participants' perceptions of green products, taking into account their moderate level of knowledge and attitude toward environmental issues and green-related business.

The result indicates that participants have a favorable attitude toward green products, with a computed weighted average of 4.02. The highest rating was given to the notion that green products are environmentally friendly. On the contrary, participants have the lowest rating for market promotion of green products.

Table 4. Assessment on consumer perception on green products.

Consumer perception on green products	Weighted mean	Standard deviation	Verbal interpretation
Green products are healthy	4.19	1.2240	moderate extent
Green products are good for the environment	4.21	1.1561	high extent
Green products are of good quality	4.16	1.2000	moderate extent
Green products are better than standard products	4.04	1.1559	moderate extent
Green products are reasonably priced	4.02	1.2149	moderate extent
Green products are easily accessible in stores	3.95	1.1984	moderate extent
Green products are well promoted	3.89	1.2988	moderate extent
The price of green products affects my purchasing decision	3.98	1.1590	moderate extent
Green products provide awareness to consumer	4.09	1.1956	moderate extent
Green products are attractive	4.14	1.1789	moderate extent
Grand mean	4.02	1.2178	moderate extent

Green Product Purchasing Behavior

The participants sometimes tend to purchase green products with a weighted mean of 4.09 (SD 4.1413).

They often bought eco-friendly products that they believe can contribute to improving the quality of life in our society and the environment, and they preferred to purchase these eco-friendly items when buying non-food products with a weighted mean of 4.21 (SD=3.1701) and 4.22 (SD=3.3862) respectively.

Table 5. Assessment on consumer perception on green products.

Green product purchasing behavior	Weighted mean	standard deviation	Verbal interpretation
I have switched products for ecological reasons	3.98	2.4204	Sometimes
I have purchased a household appliance because it used less electricity than other brands	3.97	2.5736	Sometimes
I have purchased light bulbs that were expensive but save energy	3.97	2.6809	Sometimes
I already use biodegradable products	4.05	2.7155	Sometimes
I already avoid buying aerosol products.	3.96	2.7747	Sometimes
I read labels to see if contents are environmentally safe before buying products	4.01	2.8318	Sometimes
I bought products made or packaged in recycled materials	4.12	2.8595	Sometimes
I bought products in packages that can be refilled.	4.14	2.9191	Sometimes
It is important to me that the products I use do not harm the environment	4.16	3.0208	Sometimes
I realize that purchasing an environmentally friendly product can help the society	4.16	3.1472	Sometimes
By buying eco-friendly product, I contribute to improving the quality of life of our society and the environment	4.21	3.1701	Often
I am satisfied in buying green product	4.19	3.2734	Sometimes
I prefer organic food over traditional food when buying food products	4.13	3.3445	Sometimes
I prefer eco-friendly products when buying non-food products	4.22	3.3862	Often
I normally make a conscious effort to limit my use of products that are made of or use scarce resources	4.10	3.5039	Sometimes
When there is a choice, I always choose the product that contributes to the least amount of pollution	4.18	3.5405	Sometimes
If I understand the potential damage to the environment that some product can cause, I do not purchase those products	4.17	3.6015	Sometimes
I make every effort to buy paper products made from recycled paper.	4.07	3.7830	Sometimes
I do not buy products in aerosol containers.	3.95	3.8428	Sometimes
Whenever possible, I buy products packaged in reusable containers.	4.14	3.8672	Sometimes
I buy toilet paper made from recycled paper.	4.09	3.9396	Sometimes
I try only to buy products that can be recycled	4.09	3.9917	Sometimes
I do not buy household products that harm the environment	4.10	4.0494	Sometimes
I try to buy energy efficient household appliances.	4.05	4.1595	Sometimes
I consume foods that are produced using organic farming methods	4.09	4.3648	Sometimes
I take printed copy of my bank statement only if needed to submit for official purpose	4.10	4.4148	Sometimes
I prefer to use e-vehicles than gas-powered car	4.13	4.5814	Sometimes
Grand Mean	4.09	4.1413	Sometimes

Association of Consumer Knowledge and Attitude on their perception on green products

Consumer Knowledge and Perception

The correlation analysis between variables using non-parametric tests shows that there is a moderate positive correlation between consumer knowledge and perception towards green products. The green scheme, which constitutes green marketing and promotion of organic products, was observed to have the highest correlation coefficient among the indicators indicated in the study, which indicates it has a greater influence on consumers' perspective on green products. On the other hand, consumer responsibility and environmental issues were also observed to have a moderate positive correlation with their perception.

Table 6. Correlation analysis between consumer knowledge and perception on green products.

Variables	Correlation coefficient	P-value	Verbal interpretation
Environmental issues	0.5880	0.000	Moderate positive correlation
Consumer responsibility	0.6330	0.000	Moderate positive correlation
Green scheme	0.6460	0.000	Moderate positive correlation
Consumer knowledge	0.6520	0.000	Moderate positive correlation

Consumer Attitude and Perception

The result showed that consumer attitude has a strong positive correlation with the consumer's perspective on green products, with a coefficient of 0.7290 (P 0.01). In assessing the components, consumer environmental related behavior was observed to have a strong positive influence on their perspective on green products. On the other hand, their cognitive beliefs about their contribution as a consumer to the environment were observed to have weak influence.

Table 7. Correlation analysis between consumer attitudes and perception on green products.

Variables	Correlation coefficient	P-value	Verbal interpretation
Cognitive Beliefs	0.4280	0.000	weak positive correlation
Emotional affinity to nature	0.6750	0.000	moderate positive correlation
Consumer environment related behavior	0.7000	0.000	strong positive correlation
Behavioral Intention towards the environment	0.6560	0.000	moderate positive correlation
Consumer attitudes	0.7290	0.000	strong positive correlation

Effect of consumer perception on green products and their purchasing behavior

The assessment of the degree of relationship between consumer perception of green products and their purchasing behavior was observed to have a strong positive correlation with their purchasing behavior.

Table 7. Correlation analysis between consumer perception on green products and their purchasing behavior.

Variables	Correlation coefficient	P-value	Verbal interpretation
Consumer Perception	0.714	.000	strong positive correlation

The values for the regression equation for predicting the dependent variable from the independent variable is illustrated in table 8. The model estimates that for every one-point increase in the rating of consumer perception on green products may have an estimated increase of 0.685 units in consumer purchasing behavior for green products. The model is highly significant with adjusted r-squared of 0.649, which means the 64.9 percent of the variation in the green product purchasing behavior can be associated with the changing perception on green products.

Table 8. Impact analysis of consumer perception on green products on purchasing behaviour.

Variables	Coefficient	t-statistics	p-value
(Constant)	1.111	9.052	.0000
perception	.685	23.369	.0000
Adjusted R Square		.649	
F-statistics		546.116	
Prob (F-statitics)		.000[b]	

a. Dependent Variable: Green product purchasing behavior (GPPB)
b. Predictors: (Constant), Consumer perception on green products (CPGP)
Model: GPPB = 1.111 + 0,685CPGP

Conclusion and recommendations

In terms of the knowledge and attitude of the participants towards the environment, the participants rated all the factors to a moderate extent, indicating that the younger generation requires additional exposure to environmental concerns and issues. Their perception of green products was also evidently lacking, particularly in terms of the promotion of green products to the environment.

On the contrary, participants, particularly those purchasing non-food items, prevalently prefer eco-friendly options.

Furthermore, consumer knowledge and attitudes towards nature were found to have a positive influence on their perspective on green products. It also revealed that their perception of green products had a strong correlation with their purchasing behavior. The potential favorable impact of a positive perception of green products on purchasing behavior was also revealed in the model.

The study recommends further research on the long-term impact of other environmental stimuli on green product purchasing behavior, as well as taking steps to increase community green product awareness in order to improve their knowledge and attitude towards more sustainable growth.

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Appendix

Normal Q-Q Plot of GREENPRODUCTPURCHASINGBEHAVIOR