CONSUMER EDUCATION THROUGH GREEN MARKETING

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Abstrac

Global warming is currently an issue that is often heard. The greenhouse effect that takes place when solar radiation is trapped within the earth's atmosphere creates a rise of temperature at a global scale. The effects of global warming itself comes from none other than human consumerism. The amount of waste that people dispose are so much that the earth could not handle it anymore. Marketers should also take responsibility for preventing this from getting worse, because the consumerist lifestyle itself comes from increasing demands influenced by marketers. Therefore, marketers are responsible to shift the consumers lifestyle to become more environmental friendly. This research will focus on college students as the main research subject because they will be the next generation that will make the decisions which will affect the environment for the future.There are two main goals of the research which are to find out the consumers current level of knowledge regarding green products and what are able to motivate them in purchasing a product. The research shows that most consumers already know that products, specifically shampoo, that come in a reusable form of packaging and are made from organic materials are environmental friendly, but do not perceive the same with products that use less water. As for their purchasing motive, it turns out that the environmental friendliness of a product and brand ambassador are the two main factors that separate people with lower level of knowledge regarding green products to those who are more aware it.

Keywords: Green Marketing; Consumer Education

Category: Marketing; Business Strategy

Introduction

Nowadays, the issue of global warming is becoming more alarming as time goes. The greenhouse effect happening when solar radiation is trapped within the atmosphere creates an increase in the earth's overall temperature. Though it is not on most peoples top of mind, the world of marketing is also responsible for the global warming phenomenon. This is because one of the reason for the increasing temperature through the greenhouse effect comes from waste. Both waste that are produced by manufacturers and also through households. If traced back even more, it starts from the messages that marketers send to consumers that triggers highly consumerist lifestyles. The aim of this research is to find out the most effective way in shifting the consumers lifestyle back into a more environmental friendly one by educating them of the issues. In finding out the most effective educating strategy there are three research questions that needs to be answered which are:

- What is the consumers current understanding in green products?
- What influences the consumers intention in purchasing green products?
- What is the most effective strategy/ campaign to motivate consumers in purchasing green products?

Literature Review

A. Marketing Mix

Kotler and Armstrong(2012) defines the marketing mix as a set of tools to market a

product or service. It is also known as the 4P's of marketing which consists of Product, Price, Place, and Promotion. Product is the uniqueness or usefulness of the product itself. In terms of a product, it is the tangible product that the consumers can touch. Price is the amount of money that the consumers have in return for the product that they receive. Place is the location where the products are being offered. Promotion is the media and other methods of communication that marketers use to inform the consumers about their products.

B. Green Marketing
1) Green Marketing Definition
Green marketing is not just a marketing strategy that can be used on any old product. Green marketing is a marketing strategy that focuses on products which are considered less harmful towards the environment than similar products. As stated in the American Marketing Association dictionary, they define green marketing as "*1. (retailing definition) The marketing of products that are presumed to be environmentally safe. 2. (social marketing definition) The development and marketing of products designed to minimize negative effects on the physical environment or to improve its quality.*" Therefore, green marketing strategies themselves can only be used when the product itself are in a sense environmental friendly.

2) The Paradigm Shift
Through previous research done by Jacquelyn Ottman (1998), it shows that green marketing is a trend that is needed to be popularized. This is because the earth could no longer take the waste that is produced either by manufacturers or households through the consumerist lifestyle. On the other hand, consumers' needs still has to be fulfilled, green marketing provides a solution for the dilemma. In shifting from conventional to green marketing there are key differences regarding a few issues including the consumers themselves, products, marketing and communication strategy, and the corporations that produce the products that needs to be changed for green marketing to work.

The focus of this research will be to shift from conventional to green marketing through the renewal of the marketing and communication strategies. In order to do this, Otman (1998)

believes that it should shift from a selling oriented point of view by selling the end benefits to education of the consumers through values. This way, the marketing communication process will tap into the consumers lives even more.

3) Green Marketing Strategies
In achieving an effective green marketing, Ottman (2011) through her studies has come up with several strategies, also known as Ottman's Seven Winning Strategy for Green Marketing which are as followed:

- Understand the deeply held environmental and social beliefs and values of your consumers and other stakeholders and develop a long term plan to align with them.
- Create new products and services that balance consumers' desires for quality, convenience, and affordability with minimal adverse environmental and social impacts over the life of the product
- Develop brands that offer practical benefits while empowering and engaging consumers in meaningful ways about the important issues that affect their lives
- Establish credibility for your efforts by communicating your corporate commitment and striving for complete transparency
- Be proactive. Go Beyond what is expected from stakeholders. Proactively commit to doing your share to solve emerging environmental and social problems – and discover competitive advantage in the process
- Think holistically. Underscore community with users and with the broad array of corporate environmental and societal stakeholders.
- Don't quit. Promote responsible product use and disposal practices. Continuously strive for "zero" impact. (Ottman, 2011)

These seven factors by Ottman will be taken into consideration when creating the effective strategy that will be used to educate the consumers to conduct a more environmental friendly lifestyle.

Methodology

Research Design

The research will be done through primary data research by handing out questionnaire to college students in the Bandung region. The questionnaire will use a seven point likert scale to measure the various outcomes. It is chosen so that the data could be quantified and analyzed with various quantitative research methods.

Because the aim of the research is to find out the most effective method in educating the consumers minds, there will be three main set of variables that will be used in the research with shortened naming for each group of variable to help the reading of the variable simpler. The groups of variables are as followed:

1) Awareness of issue & willingness to change (AW)

This set of variables will test whether or not the consumers are aware with the environmental issues that lead to global warming. Also it will measure their willingness to change into a more environmental friendly lifestyle.

The variables will be tested by using the cluster analysis method. The aim is to group the consumers based on their current level of awareness and willingness to change. The groups created will then serve as a base for every analysis done in the processes following it.

2) Knowledge of green products (K)

This set of variables will test the consumers current level of knowledge regarding green products. The green product that will be tested is shampoo, it is chosen to create a specific guideline for the respondents to avoid confusion and bias.

The variables in this group will be tested by using the frequency analysis method which will be done on the groups that have been determined by the previously done cluster analysis. This is done to find out the tendency of knowledge regarding green products in each group of consumers which uses the following formula to determine the tendency of each variable:

$$\text{Tendency} = \frac{\text{Max. Scale} - \text{Min. Scale}}{\text{Total Scale}} \quad (1)$$

Because the seven point likert scale ranges from 1 up to 7, the formula will show a tendency value of 0.86 The calculations generate the following tendency values:

Table 1. Frequency Analysis Tendency

Tendency Statement	Tendency Value
Strongly Disagree	1.00 – 1.86
Disagree	1.86 – 2.72
Slightly Disagree	2.72 – 3.58
Neutral	3.58 – 4.42
Slightly Agree	4.42 – 5.28
Agree	5.28 – 6.14
Strongly Agree	6.14 – 7.00

The data in Table 1 shows the interpretation that will be used for each tendency value. The range in the neutral tendency statement was reduced to 0.84 to create a balance between the positive and negative statements.

3) Purchasing Motive (PM)

This set of variables contain the things that motivate consumers when purchasing a product. It will measure the purchasing motives that are critical in the consumers purchasing intent.

The purchasing motives variable set will be analyzed by using the discriminant analysis. It is used to discover which variables of the group is critical in creating a difference between one cluster of consumers with another. It will then determine the most important method of marketing that will be used to educate the consumers.

Data Collection

A total of 221 questionnaires have been distributed across different campuses in the North Bandung area such as *Universitas Padjadjaran, Institut Teknologi Bandung Universitas Katolik Parahyangan,* and *Universitas Islam Bandung*. It is also distributed to several college boarding areas such as *Cisitu, Tubagus Ismail,* and *Dipati Ukur*. The samples are gathered by using a convinienve sampling method.

Data Analysis

The respondent data gathered through the questionnaires are analyzed by using the PASW 18 by SPSS software for validity analysis, reliability analysis, cluster analysis, frequency analysis, and discriminant analysis.

Findings and Discussion

Descriptive Data
The descriptive data shows the general overview of the total respondents that filled out the questionnaires. Out of the 221 respondents, 106 (48%) of them were male and 115(52%) were female. Most of the respondents were aged 20 and 21 with a total of 130 respondents from the two age groups with the rest of the respondents aging 18, 19, and 22 years old.

Statistical Analysis
1) Reliability and Validity Analysis
The reliability analysis was aimed to find out the internal consistency of the instrument being used, or in this case the questionnaire. In order for the instrument to be considered reliable it must pass a Cronbach's Alpha score of 0.6. The data being used in this research scored a 0.827 in Cronbach's Alpha value making it a reliable instrument.
The validity of the data was verified by correlating each variable in the questionnaire to the total sum of all of the variables. As a result, three questions in total were discarded because they do not get flagged as significant at the 0.05 level based on their Pearson's Correlation Value.

2) Cluster Analysis
Before conducting the cluster analysis, the data must first be tested for normality to determine the method used for the test of multicolinearity and then conduct the multicolinearity test itself to make sure that there are no redundancies in the data. This means that one variable must not be able to be explained by another. If that happens then only one of the highly correlated variables is chosen.
In testing for normality, the results show that using both the parametric and non-parametric methods through the Kolmogorov-Smirnov test and the One Sample Kolmogorov-Smirnov test that the data is not normally distributed. Therefore the Spearman's method will be used to test the multicolinearity of the data.
In the test for multicolinearity, it is found that there are three variables that has high correlation value with the rest of the variables in the Awareness of Issues and Willingness to change group. In other words, the variables in this group can be explained by either one of

these variables. The variable that is chosen was AW04 because it was seen subjectively as the most representing question which is "I would like to search deeper about the issues regarding global warming, sustainable development, and other things that are related to the environmental friendly lifestyle".
The next step is to determine the number of clusters that will be used to categorize the respondents. It will be by interpreting the difference of scores that is shown in the agglomerative schedule part of the cluster analysis (see Appendix) and creating a graph based on it as followed:
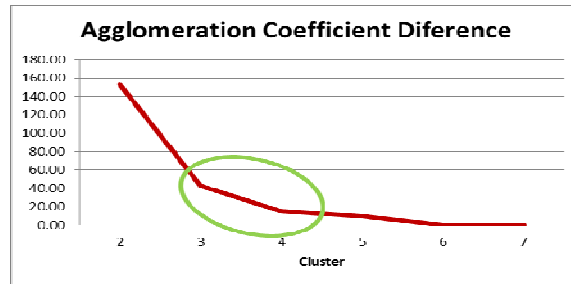

Figure 1. Agglomeration Coefficient Difference

Based on the graph shown above, it can be interpreted that the categorization of the variables will be split into either three or four groups based on their AW04 variable score. To determine the final number of clusters, the results will be cross-referenced by using a non-parametric method called the K-Means method and finding the number of clusters that has the same number of clustering between one another.
After validating the hierarchical method of clustering with the K-means method, it can be concluded that the respondents will be divided into four groups. The groupings of the respondents are as followed :

Table 2. Cluster Analysis Results

Cluster Analysis Group	New Cluster	Amount of Members	Percentage	Cumulative Percentage	Score of AW04
2	1	65	29.41%	29.41%	3 or 4
3	2	75	33.94%	63.35%	5
1	3	51	23.08%	86.43%	6
4	4	30	13.57%	100.00%	7

Because the mid-point of the respondents can be found in the second cluster when using the new cluster system that sorts the values of the score of variable AW04, it is therefore

categorized as the mid-level awareness and willingness to change. As for clusters 1,3, and 4, they are sequentially named as having respondents with low level, mid-high level, and high level awareness and willingness to change.

3)   Frequency Analysis

The frequency analysis is done on the second group of variables which are the consumers current knowledge of green products and the information source that the consumers use to gain information about environmental issues. The analysis was conducted on each cluster to find out whether or not there really is a difference of knowledge between those with low awareness and willingness to change and those scoring higher. As for the information source, respondents are allowed to choose more than one source to determine the most popular media. The results are as followed:

a.   Frequency Analysis on Low Level AW

Table 3. Low Level AW Knowledge Level

		K1	K2	K3	K5	K6
N	Valid	65	65	65	65	65
	Missing	0	0	0	0	0
Mean		5.2923	6.0923	4.7077	5.6923	5.8923

According to the people categorized with low awareness and willingness to change, the thing that makes a product green is that it does not produce any hazardous waste and is sold in a reusable packaging. Although they agree that using a small amount of water is considered green, they are still hesitating when it comes to this issue. Regarding the information source, people in this cluster get their information mostly through electronic media such as online articles(47 respondents), television(42), and social media (36)

b.   Frequency Analysis on Mid-Level AW

Table 4. Mid-Level AW Knowledge Level

		K1	K2	K3	K5	K6
N	Valid	75	75	75	75	75
	Missing	0	0	0	0	0
Mean		5.3867	5.9467	4.6400	5.8267	5.8933

The cluster containing people with mid-level awareness and willingness to change thinks

that a green shampoo are the ones that do not produce hazardous waste, sold in a reusable packaging, and is manufactured using a process with low emission. However, they score a marginally lower score when it comes to their opinion in green products using small amount of water. Once again the electronic media comes in dominant for this group of consumers with online article(62) still being the main source followed by social media(56) and television(54)

c. Frequency Analysis on Mid-High Level AW

Table 5. Mid-High Level AW Knowledge Level

		K1	K2	K3	K5	K6
N	Valid	51	51	51	51	51
	Missing	0	0	0	0	0
Mean		5.7255	6.3137	5.2549	6.4118	6.4314

This cluster of consumers categorizes green shampoo as the ones that are sold in a reusable packaging, do not produce hazardous waste, and is manufactured using a process that produces low emission. Nevertheless, they still score a slightly agreeing form when it comes to products using small amounts of water even though it is only by a small margin. Again the electronic media is the most popular source of information in this cluster with close scores by online articles(42) and television(38) followed by the social media(29).

d. Frequency Analysis on High Level AW

Table 6. High Level AW Knowledge Level

		K1	K2	K3	K5	K6
N	Valid	51	51	51	51	51
	Missing	0	0	0	0	0
Mean		6.3333	6.2333	4.9000	6.0333	6.4333

The people categorized as consumers with high levels of awareness and willingness to change to a more environmental friendly lifestyle have a very high average of knowledge regarding green products with excellent knowledge scores on regarding products that uses reusable packaging, products made out of organic materials, and products not producing hazardous waste as green products. They also score a relatively high score for products that are produced through a low emission manufacturing process. On the other hand,

even the people categorized as having high levels of awareness and willingness to change score a surprisingly low score in identifying shampoo that uses less water as a green product. As for their source of information, this cluster follows the same pattern as the ones in the previous clusters with the electronic media dominating through online articles(25), social media(22), and television(20) although this time, below the line events(16) do not come far behind.

4) Discriminant Analysis

Before the discriminant analysis could be conducted on the purchasing motives set of variables, it must first pass a few requirements. The data that will be tested with the discriminant analysis must be normally distributed and must not show multicolinearity.

The normality of the data will be tested by looking at the values of each variables skewness and kurtosis. In order to pass the normality testing, a variables skewness and kurtosis score if divided by their standard error must be within ±3.92, otherwise the distribution is considered not normal. Because the data containing 221 respondents show that there is normality in only 3 out of 9 variables, a total of 16 cases which were determined to be outliers were eliminated from the discriminant analysis process. after the elimination of these cases, only 2 out of 9 variables (PM01 and PM10) were considered not to have a normal distribution. Therefore these variables will not be used for the discriminant analysis.

For the multicolinearity testing part of the analysis, it will be done through linear regression on the independent values. The variables are tested on the clusters which were determined through previous processes. The results of the calculation are as shown below:

After the data has passed the normality and multicolinearity testing, it can now be analyzed using the discriminant analysis. The process of the discriminant analysis itself will use the stepwise method, meaning that the variables that are going to be analyzed are entered one a time so that the power of that variable can be accounted for and therefor only significant variables will be calculated.

Table 7. Test for Multicolinearity Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	1.954	.596		3.280	.001		
	PM03	-.142	.050	-.217	-2.844	.005	.817	1.224
	PM04	.052	.051	.082	1.016	.311	.733	1.364
	PM06	-.050	.072	-.051	-.696	.487	.874	1.144
	PM07	.110	.064	.127	1.726	.086	.873	1.146
	PM08	.037	.067	.042	.555	.580	.846	1.182
	PM09	.034	.071	.036	.483	.630	.869	1.151
	PM10	.003	.052	.005	.065	.948	.700	1.429

a. Dependent Variable: Ward Method

Table 8. Variables in the Analysis

Step		Tolerance	Sig. of F to Remove	Wilks' Lambda
1	PM08	1.000	.000	
2	PM08	.998	.000	.944
	PM03	.998	.013	.887

The variables were chosen only by using two steps because no other variables met the significance requirement of 0.05 to be entered in the discriminant analysis. Therefore only variables PM08 and PM03 will be carried on for the rest of the analysis.

Discriminant analysis will use functions to find the differentiating variables that distinguishes the clusters from one another. The differentiating factors can be explained through the table below:

Table 9. Function at Group Centroids

Ward Method	Function	
	1	2
1	.414	.276
2	-.448	.029
3	-.139	-.057
4	.478	-.406

Unstandardized canonical discriminant functions evaluated at group means

Through Table 9 the differentiating function of the clusters could be found. While the first function differentiates between clusters 1&4 with clusters 2&3, the second function differentiates clusters 1&2 from clusters 3&4. Thus it can be interpreted that cluster 1 can be differentiated from clusters 2&3 by the first function and from cluster 4 by the second. Cluster 2 can be differentiated from clusters 1&4 from the first function and from cluster 3 by the second function, and so on.

The next step of the discriminant analysis is the accuracy testing. It is to determine the validity of the discriminant analysis results before interpreting it even further. By using the press' Q method, it will compare the value of the critical value from the chi square table (see Appendix) with the results from the calculation below:

$$Q = \frac{(N - (n.K))^2}{N(K-1)} \qquad (2)$$

N = Total number of samples
n = Objects classified correctly
K = Number of groups

The results of the calculation shows a value of 10.148 meaning that it is valid at the 0.05 level of significance and therefore can be used for further analysis. After passing the accuracy testing, the data can be used for final interpretation. Based on the discriminant analysis, the data can be summed into Table. 10. As it shows, the main discriminating variable is PM08 that discriminates cluster 4 the most and variable PM03 that differentiates cluster 1 the most.

Table 10. Classification Function Coefficients

	Ward Method			
	1	2	3	4
PM03	1.749	1.394	1.413	1.342
PM08	4.655	4.008	4.306	4.964
(Constant)	-17.926	-13.241	-14.759	-18.079

Fisher's linear discriminant functions

Conclusion and Recommendation

Based on the data analysis done in the previous chapter, there are several conclusions that can be made for further recommendations. The conclusion part will be divided into the analysis being made to them and the recommendation part will be divided into the values that are going to be presented and the methods of presenting the values.

1) Cluster Analysis Conclusions
- Variable AW04 with the question "I would like to search deeper about the issues regarding global warming, sustainable development, and other things that are related to the environmental

friendly lifestyle" can be used to represent the variables in the awareness of issue & willingness to change category.
- The cluster analysis produce four clusters in total and is categorized as low-level, mid-level, mid-high level, and high level awareness & willingness to change.
- The categorization shows a tendency towards high awareness & willingness to change because the scores in the midpoint of the clusters is 5 compared to 4 which is the midpoint of the 7 point likert scale being used.

2) Frequency Analysis Conclusions
- There is a difference in the knowledge level of the people in different clusters where people with low scoring awareness & willingness to change also have a tendency to have a low score in their knowledge regarding green products and so is the other way around.
- Respondents tend to get their information through the electronic media because their generation is raised in the technological era. In the electronic media itself, the ones that require seeking of information (e.g. social media, online articles) tend to get more responses than the passive ones where information is being forced to the consumers (e.g. television)
- There is a tendency in all of the clusters to show low value when identifying green shampoo products as products that use less water

3) Discriminant Analysis Conclusions
- There are only seven variables that are fit for being tested using the discriminant analysis method because the others do not pass the assumptions test part of the discriminant analysis process.
- There are two most impactful variables that can differentiate between one cluster and another which are variable PM08 which represents the environmental friendliness of the product itself and PM03 which represents the use of a brand ambassador that supports the product values

As mentioned before, the recommendations will be split into two parts which are the values and methods of delivery.

1) Values

- Accentuate the environmental friendliness of a product when advertising or showcasing a product. However, it must not be the only thing that is offered to consumers otherwise it will be counterproductive for the marketing program because consumers will think that there is nothing in it for themselves. This can be compensated by communicating the extra economic values that consumers will get in return as this will change the consumers mindset in choosing products.
- Communicating the environmental benefits of products that use less water. The message that should be conveyed is that products that uses less water gives advantage not only to the consumers but also gives environmental advantages. The economic value that the consumers can enjoy is lower water bills or for most people in Indonesia lower electric bills from using the water pump. As for the environmental benefits it can help with the issues of clean water scarcity often heard in Indonesia. The message of using less water can also come from the governmental side by urging consumers into using less water in their lives through the use of economic toilets and the culture of using toilet paper, adapting from the lifestyle that is already implemented in other countries.

2) Methods of Delivery

- Using a brand ambassador as the main appeal of the message delivery. By using a brand ambassador it will add the credibility of the message being delivered and the message will have more impact on the consumers purchasing preference. In order to achieve this, the brand ambassador must represent the values that the product is trying to deliver. Credible candidates can come not only from celebrities sharing the same value but also a more credible source such as Miss Earth Indonesia whose main purpose is to deliver values on a more environmental friendly lifestyle.
- Using the electronic media as the main source of promotion. However without a program to back up the advertising it will be a loss of opportunity. One example of an electronic media with a follow-up

program is to utilize the twitter of the brand ambassador to create teasers for events. This is because reason that events were not popular in the previous research may be because the lack of promotion or appeal of the events. This is exactly why prior to the event, a hype needs to be created in order to stimulate the curiosity of the consumers.

- Creating an attractive below the line program so that consumers will get to experience directly the impact of the values that they support. This can be done through sponsoring an eco-invention fair where the aim is to showcase innovative products that are beneficial for the environment. This not only supports the eco-friendly lifestyle but at the same time supports building creativity of the eco-friendly minds of inventors which can change the mindset of Indonesian people in an even more solid way.

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