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The Perception of Green Marketing (A Case in Jatinangor, West Java Province, Indonesia)

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Abstract: Green marketing plays an important role in preserving the environment., It is related to the behavior and public perception of green marketing. Green marketing distributes the products or services from producers to consumers by paying attention to the environment. The Study aims to analyze which community understand and not understand about green marketing, to analyze how model and constraint for educating people to be oriented in green marketing. The research was conducted Jatinagor District with a population of 111.886 people, sample taken 183 people or 0.16% of the population from September-December 2016. The research results showed that people in the areas of research already familiar will the concept of green marketing, but in daily life behavior has not been oriented on green marketing. Community education model for green-oriented marketing must involve penta-helix that is community, academia, Governments, companies and the media. There are constraints to educate the community to become more environmentally friendly. In addition, , public awareness is still lacking, research funds is limited, Government policies that support the importance of keeping the environment have not been fully implemented, there is still limited companies that recycle the discharge waste, and the role of the media is not yet optimal.

Keywords: Perception, green marketing, sustainability of agriculture

1. INTRODUCTION

Sustainable Rural Economic Development is the economic development in rural areas based on economic growth (economic growth) and social justice (social justice) by considering the ethical aspects and economic services (ecosystem services). According to Soemartono (2001) in terms of ecology, a development interventions on the environment is effort or strategy to bring the "disturbed" environmental balance to a new balance of higher level of quality. This effort must be maintained to secure the ability of the environment to support a higher level of living. Alihsahbana (2003) stated that the environmental problems caused by the failure of the policy (Policy Failure), the failure of institutional (Institutional Failure) and environmental externalities.

Green marketing support Sustainable Rural Economic Development because green marketing indirectly causes the externalities. More specifically, the externality occurs if the consumption or production of one party to affect the usefulness of the other party is not desirable, and the makers of externalities does not provide compensation toward affected parties.

Green marketing related to green products, green products, green finance, green living, green transportation, green producer, green consumer, green communication and green institution that managed everything with green management in order to make any zero waste. The amount of landfill waste by source as follows:

Table 1
The Magnitude of the Waste Pile based on the Source

No.	Components of waste sources	Unit	Volume (Litter)	Weight (kg)
1	Permanent Home	/person/day	2.25-2.25	0.350-0.400
2	Semi-permanent home	/person/day	2.00-2.25	0.300-0.350
3	Home non - permanent	/person/day	1.75-2.00	0.250-0.300
4	Office	/employee/day	0.50-0.75	0.025-0.100
5	Store / Shop	/officer/day	2.50-3.00	0.150-0.350
6	School	/student/day	0.10-0.15	0.010-0.020
7	Secondary arterial roads	/m/day	0.10-0.15	0.020-0.100
8	Secondary collector roads	/m/day	0.10-0.15	0.010-0.050
9	Local Roads	/m/day	0.05-0.10	0.005-0.025
10	Market	/m²/day	0.20-0.60	0.100-0.300

Table 1 shows that litter every day is very much depending on the source, and the vast majorities were from homes, shops and markets. Green marketing is to contribute to environmentally sustainable agriculture. Green mind are important issues in green marketing, because it starts from the concept of self, knowledge and behavior in daily life to reduce, recycle, and reuse rubbish around. Nowdays, along The Cikandung and Cipunagara watersheds especially in the Surian Sub-district of Sumedang District has already contaminated garbage, such as waste disposal factory and other wastes. Many of the agricultural lands in the area such as Surian, Wanajaya, Ranggasari, Warnasari and Pamekarsari villages slightly contaminated and low ecosystem service. It is need to develop green marketing. SRED (Sustainable Rural Economics Development) program aims to preserve the environment not getting worse contaminated. One step for maintenance environmentally friendly is understanding of green marketing. Its should be considered not only a public perception but the most important is the change in people's behavior of green marketing.

The Study aims to analyze which community understand and not understand about green marketing, to analyze how model and constraint for educating people to be oriented in green marketing. Hopefully by knowing that the public can determine the first step to create programs related the sustainability of agriculture. In addition, this study useful to provide feedback to the community, government, and stakeholder in sustainable agriculture.

2. LITERATURE REVIEW

Perception is often referred to by the view, picture, or assumption, because there is a perception in response to someone about one thing or object. Perception has a subjective nature, because it depends on the abilities and circumstances of each individual, so it will be interpreted differently by individuals with each other. Thus the perception of an individual treatment process that is giving feedback, meaning, a picture, or an interpretation of what is seen, heard, or felt by the senses in the form of attitudes, opinions, and behavior or referred to as individual behavior.

American Marketing Associates (AMA) defines green marketing as the marketing of products that are presumed to be environmentally. Polonsky, Rosenberger and Ottman (1998), defining green marketing as "All activities designed to generate and facilitate any exchange intended to satisfy human needs or wants, such that the satisfaction of these needs and wants occurs, with minimum detrimental impact on the natural environment" (Green marketing is consistency of all activities to design services and facilities for the satisfaction of human needs and desires, with no impact on the natural environment). Shields argued "The efforts by organizations to produce, promote, package, and reclaim the product in a manner that is sensitive or responsive to ecological concerns (the efforts of the Organization to produce, run, package and make products that care for the environment).

Green Marketing is often assumed to be with green product greening efforts as firms, and consumers generally do not understand the true meaning of green products and also its benefits have yet to be understood. When an enterprise has not been paying attention to the surrounding environment and its untapped CSR funds for activities related to the environment, then the company will not be sustainable, and vice versa. Green marketing has at least two objectives namely improved environmental quality and customer gratification. Environmental marketing focuses on clean technology that involved designing of innovative new products. (Aggarwal, 2014).

However, Ottman (2006) proposed a slightly different concept. He stated that the first regulation on green marketing is the first regulation on marketing, which is to focus on consumer benefits. This may occur because when consumers see the advantages of purchase, they will be stimulated to make a purchase. With this concept the environmental factors become a liaison for the occurrence of the purchase. Marketing based on environmental sustainability "environmental marketing" is a new development in the field of marketing, and is a potential opportunity and strategic advantages that have dual (Multiplier effect) both businesses and society as a user.

Green marketing may be a dilemmatic approach. On the side of the manufacturer, this adds to the cost of producing the products because of the use of organic inputs. On the other hand, the products may be less liked by consumers because the price is too expensive. It should thus be designed how to produce green products that benefits both producers and consumers. According to (Grant, 2007) green marketing should be done in a way so that such products must be the best choice and easy to get, a combination of commercial, technological and social impact, generating new products and a lifestyle, and products are attractive and well informed. Thus, green marketing is related to green products produced by the green producer for green consumer and distributed in green transportation. To facilitate the production of green finance is needed, while for the smooth distribution of goods from producers to consumers, green communication is required. With the smooth production and distribution of goods, there will be green living.

3. METHODOLOGY

3.1. Research Method

The method in this research was a survey. The object of this research is the community in Jatinangor District Sumedang Regency, with the population is 111.886 people. This district was chosen due to the existence of the various strata of education, income, knowledge and jobs.

3.2. Sample, Place and Research Time

The data in this study are the primary and secondary data. Primary data were obtained from the community members and leaders, while secondary data from relevant agencies. Data were collected using questionnaires. The sampling used simple random sampling as much as 183 people or 0.16% from population. Survai was conducted from October until December 2016.

3.3. Variable Description

- Perception of green marketing was evaluated based on meaning, a picture, or interpretation of the respondents about green products, green finance, green living, green transportation, green producer, green consumer, green communication and green institution.
- Green product is organic products or products with environmentally friendly packaging
- Green finance is the financing to produce a green product
- Green living is an environmentally friendly residence
- Green transportation is the transportation that does not use or reduce the use of gasoline or transportation that does not pollute the environment
- Green producer is a producer that produces environmentally friendly products, e.g. farmers produce
 organic products, reducing the use of herbicides, pesticides, using organic fertilizers. For the food
 manufacturer packaging using green packaging, do not use plastic or steroform and can be recycled
- Green consumer is consumers who buy organic products that do not use or reduce the use of herbicides, pesticides and manure use. Additionally, also the consumers who buy products with green packaging
- Green communication is communication that reduces the use of paper or paperless Green institution is institutional policy supports the attainment of eco-friendly

Each variable using a Likert scale of grades 1 to 5, starting with a value of 1(strongly disagree) to 5 (strongly agree). Respondents were classified as agreed respondents if the value was above average, and those who disagree were respondents whose value was below the average.

3.4. Data Analysis

Data were analyzed with the Classification and Regression Tree (CNRT). The selection of this analysis because there is a different scale variable, such as for the variable age with the scale ratio while other variables with the ordinal scale (levels). This analysis was popularized by Breiman, et al (1987).

The Perception of Green Marketing

Classification and Regression Tree is constructed by dividing a subset of the dataset by using the predictor variables to create two child nodes repeatedly where the child nodes that are more homogeneous than with parents of its nodes. Algorithm with this characteristics is known as binary algorithm. The best predictor is selected by using the impurity measure. The same Predictor can be a splitter at the different levels. The Division of the data from the parent node to become child nodes always determined with predictor related questions. Classification and Regression Tree algorithm can be used for prediction by the target variable of type continuous or categorical.

The stages are done at the time of the use of the Classification and Regression Tree consists of three steps. These steps are:

Tree Building

a. Determines the split point

When building decision tree must find a split point split training data into sections consisting of the whole or a large part of the record of the same class. On C&RT Gini Index is used to determine the split point is the best.

Gini Index=
$$1 - \sum_{j} p_{j}^{2}$$

b. Missing variable or missing value

Each node has a primary variable, i.e. split splitter best on the node. When primary splitter at a record data missing or has no value, then the data was not directly rejected or discarded, but rather will be given variables a surrogate (surrogate). Where the replacement variable has the same information with primary splitter.

2. Stopping Tree Building

Some of the things that cause the tree to stop the development process include:

- a. Every child node has only one data record.
- b. All cases on a node has the same values for the target variable.
- c. The number of levels (depth tree) has reached the maximum value in accordance with a predetermined by the user.

3. Tree Pruning

The construction of the tree stopped because it met the criteria-criteria for Stopping Tree Building, the next process is doing a prune or trimming against the tree.

- a. Prune done by cutting branches which are "weak". Branches are said to be "weak" if come with a high rate of misclassification.
- b. Full Pruning tree will increase the overall error rate on data training, but reduce the tree will usually assign capabilities prediction becomes better for unseen record.

From the statement above, the framework of this research thinking as follows:

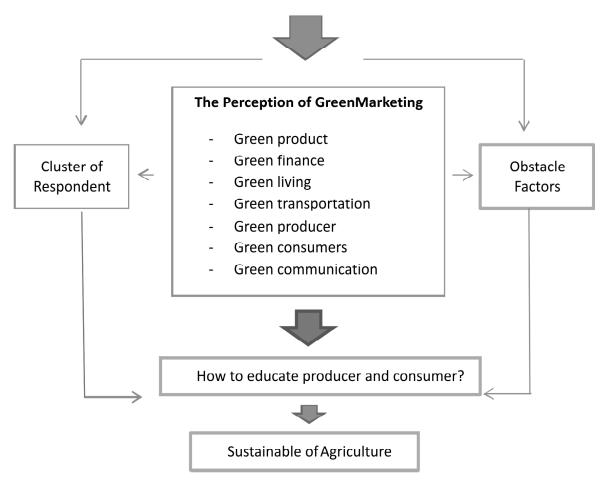


Figure 1: Logical Framework

4. RESULTS AND DISCUSSION

4.1. Characteristics of Respondents

Characteristics of respondents to describe the respondents interviewed were classified based on education, information obtained about green marketing, age, occupation and gender. The characteristics of consumers as follows:

Table 2
The Characteristics of Respondents

Description	Don't	Understand	Un	ederstand		Total	
	f	%	f	%	f	%	
Education							
SMA (Senior High School)	19	10.39	31	16.94	50	27.32	
S1 (Bachelor's degree)	43	23.50	84	45.90	127	69.40	
S2 (Master's degree)	2	1.09	4	2.19	6	3.28	
Total	64	34.97	119	65.03	183	100.00	

contd. table 2

Description	Don't	Understand	Un	iderstand		Total
	f	%	f	%	f	%
Information						
Less Complete	22	12.02	13	7.10	34	18.58
Complete	35	19.13	81	44.26	115	62.84
Very Complete	7	3.83	25	13.66	32	17.49
Total	64	34.97	119	65.03	183	100.00
Age						
<20 years	5	2.73	7	3.83	12	6.56
20-37 years	42	22.95	98	53.55	140	76.50
> 37 years	17	9.29	14	7.65	31	16.94
Total	64	34.97	119	65.03	183	100.00
Jobs						
Housewife	8	4.37	8	4.37	16	8.74
Employees	16	8.74	27	14.75	43	23.50
Private sector workers	0	0.00	2	1.09	2	1.09
Student	18	9.84	44	24.04	62	33.88
Pensioner SOE	0	0.00	1	0.55	1	0.55
Civil servant (PNS)	6	3.28	9	4.92	15	8.20
Self employed	12	6.56	24	13.11	33	18.03
Other	4	2.19	4	2.19	8	4.37
Total	64	34.97	119	65.03	183	100.00
Gender						
Male	30	16.39	64	34.97	94	51.36
Female	34	18.58	55	30.06	89	48.64
Total	64	34.97	119	65.03	183	100.00

The results showed that those who understand the green marketing is that those with higher education, get full information, youth aged between 20-37 years and students. Students in this case fresh graduate and post-graduate. This is understandable because Jatinangor region is an education city. There are four University in Jatinangor District such as UNPAD, ITB, IKOPIN and STPDN. In addition, it was revealed that green marketing understanding between men and women are equal.

4.2. The public perception of Green Marketing

Data were analyzed and classified green marketing based on the characteristics of respondents. The results were as follows:

Table 2
Perceptions of Respondents about the Green Marketing

Green Marketing	f	%
Don't Understand	64	34.97
Understand	119	65.03
Total	183	100.00

Based on the table above, it can be seen that as respondent generally understand about green marketing. The respondent's place of residence is spread in the city (73,77%), next to the borders of the city (15,85%) and small villages (10,38%).

The results showed that the public in Jatinangor are already familiar with green marketing. This is possible because the respondents are generally students both undergraduate and graduate. Communities in this areas of research already know the concept of green marketing, but they have not practiced this concept in daily life. This results are in line with the results of the research on green marketing in other developing countries which showed that consumers already know about green marketing (Mendleson and Polonsky, 1995; Meredith Ginsberg and Paul Bloom, 2004). There are consumer concern on the environment and the existence of the limitation of the use of natural resources (Sauza, 2004). According to Polonsky (1995), consumers are categorized into three categories, namely: dark-green consumers, semi green consumer, and non-consumer. Meanwhile, according to Wong et.al (1996) consumers who are already oriented environment can be divided five categories, such as:

- True blue green (9%) : they are strong environmental value.

- Greenback green (6%) : they more willing than the average consumer to purchase environmentally friendly products.

- Sprouts (31%) : they are believing in theory but not in practice.

- Grousers (19%) : they believe that green product cost too much.

Basic browns (33%) : they do not care about environmental and social issue.

Table 3
The Category Understand and Do not Understand for Each Variable

	Do not Understand		Un	Understand		Total	
	f	%	f	%	f	%	
Green Product	86	47.00	97	43.00	183	100.00	
Green Finance	103	56.28	80	43.72	183	100.00	
Green Living	89	48.63	94	51.37	183	100.00	
Green Transportation	80	43.71	103	56.29	183	100.00	
Green producer	86	46.99	97	53.01	183	100.00	
Green consumers	100	54.64	83	45.36	183	100.00	
Geen communication	95	51.91	88	48.09	183	100.00	

Table 3 revealed, that respondents generally already understood about green marketing, especially green product, green living, green transportation, and green producers. This is because there are many information about this thing, from newspaper, television or social media. Meanwhile there were many people who do not comprehend yet about green finance, green consumers and green communication, this because these terminology and concept are rarely socialized therefore not familiar amongst them.

4.3. Cluster Public Perception of Green Marketing

After trimming the maximum classification tree then the resulting optimal classification tree with 10 terminal nodes. The predictor variables that became the main sorter is the completeness of the information obtained by respondent. The characteristics of respondents who understand and do not understand the green marketing are as follows:

- a) Terminal nodes 1 (19 observations) is predicted as a group of respondents who **do not understand** the green marketing. Characteristics of respondents from this node is **incomplete got the information** for the tour.
- b) Terminal node 3 (1 observations) is predicted as a group of respondents who **do not understand** the green marketing. Characteristics of respondents from this node is the respondents who have received **inadequate information** and aged less than 37 years old and from the **village**.
- c) Terminal nodes 4 (11 observations) is predicted as the group of respondents who **understand** the green marketing. Characteristics of respondents from this node is the respondents who have received **inadequate information** and **aged less than 37 years old** and come from **the city** with **S1** (Bachelor's Degree).
- d) Terminal nodes 5 (10 observations) is predicted as a group of respondents who **do not understand** the green marketing. Characteristics of respondents from this node is the respondents who have received **inadequate information** and **aged less than 20 years old** and come from **cities** with **a high school education**, with the **female** gender.
- e) Terminal nodes 6 (2 observations) is predicted as a group of respondents who **do not understand** the green marketing. Characteristics of respondents from this node is the respondents who have received **inadequate information** and **aged 20-37 years old** and come from **the city** with the **female** gender who **work as civil servants** (PNS).
- f) Terminal nodes 7 (20 observations) is predicted as the group of respondents who understand the green marketing. Characteristics of respondents from this node is the respondents who have received inadequate information and aged 20-37 years old and come from the city with the **S2** (Master's Degree), with female gender work instead as a civil servant (PNS).
- g) Terminal nodes 8 (8 observations) is predicted as the group of respondents who **understand** the green marketing. Characteristics of respondents from this node is the respondents who have received **inadequate information** and are **younger than 37 years old** and come **from the city** with **S2** (Master's Degree) and **diploma**, with the **male gender** who **work as self-employed**.
- h) Terminal nodes 9 (1 observations) is predicted as a group of respondents who **do not understand** the green marketing. Characteristics of respondents from this node is the respondents who have received **inadequate information** and are **younger than 37 years old** and come **from border villages** and **towns** with **a high school education** and **diploma**, with **the male gender** that works not as **an employee** and **student**.
- i) Terminal nodes 9 (27 observations) is predicted as the group of respondents who **understand** the green marketing. Characteristics of respondents from this node is the respondents who

- have received inadequate information and are younger than 37 years old and come from the city with the S2 (Master's Degree), with the male gender that work is not as self-employed.
- j) Terminal nodes 2 (15 observations) is predicted as a group of respondents who **do not understand** the green marketing. Characteristics of respondents from this node is the respondents who **have received complete information** and **over 37 years old**

From the tenth nodes, it can be concluded that the characteristics of respondents associated with perception is the completeness of the information obtained, age, location, education, occupation and gender. Following the results of the classification of respondents by perception on green marketing, are as follows:

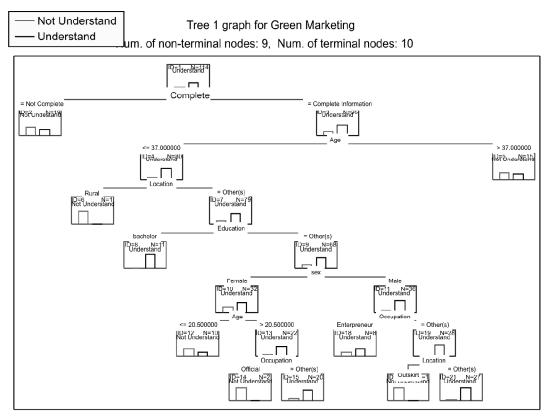


Figure 2: Cluster Perception of Green Marketing

From Figure 2 it can be concluded perceptions of green marketing communities around Jatinangor as follows:

Table 4
Cluster Perception of Green Marketing

	Understand	Not Understand
Completeness of information	complete	incomplete
Age	< 37 years old	> 37 years old
Location	city	village, village border & city
Education	S1, S2, Diploma	SMA (senior high school)
Jobs	Self-employee	PNS (civil servant)

The Perception of Green Marketing

From Table 3. It was revealed that information, age, location of residence, education and employment can be different perceptions about green marketing. can be understood as relating to green marketing green products, green producer, green consumer, green transportation, green finance, green communication and green living. In this study, both male and female is not a differentiator in the category understand and not understand. Other research revealed that women play an important role in consumerism and environmental consciousness than men (Boztepe, 2002; Kaufmann et al, 2012). However, according to Suki (2013), Consumers concern depending on product feature, precision of green product claims, information provided on product and its advantages.

Deliana (2012) suggested that consumers with regard to the understanding, on the environment and green product divided into three categories: (1) consumers who do not know green product and do not care about environmentally friendly (C1), (2) consumer who know green product and care about environmentally friendly (C2) and (3) consumer who know green product but do not care about environmentally friendly (C3).

- a) Consumers who do not know green product and do not care about environmentally friendly have characteristic (C1):
 - Have low perception to organic products.
 - Very rare to consume organic products.
 - Would like to try organic products.
- b) Consumers who know green product and care about environmentally friendly have characteristic (C2):
 - Have high perception to organic products.
 - Often to consume organic products.
 - Pay attention to health, especially the health from food being consumed.
 - Consumers who know the meaning of label that shown in the package of organic product.
- c) Consumers who know who know green product but do not care about environmentally friendly have characteristic (C3):
 - Consumers who have enough perception to organic products.
 - Consumers often enough to consume organic products.
 - Have enough understanding on meaning of the logo of organic products but still do not care about to organic products.

Public Education Model for Green Marketing Oriented

To educate the public in order that environmentally oriented is not easy, because it relates to customs, culture, education, environment, information obtained, awareness of healthy living and lifestyle. Educate the public relation to the environment must be integrated in society, academia, government and media company or pentahelix.

1. Society

- Sorting waste by category of organic material, an organic and paper waste.
- Giving priority to buy products with green packaging
- Buying and using green products

2. Academics

- Conducting research and educate the public on environmental oriented.
- Provide input on government policy.

3. Government

- Create a policy on the environment that could be implemented well. An example of a Government policy implementation is not good use policy including of paid plastic bags in supermarkets. However, because the price is cheap, the consumer is not deter to use plastic bags, so this policy is not effective and not applicable. As the result, the peoples back to the original habit of using plastic bags.
- Socialization of government programs relating to the environment.

4. Company

- Reduce waste so that it is free of toxic substances.
- Waste can be recycled naturally or through a biological process.
- Results of recycled waste could be improved capacity.
- Provision of energy that is easy to provide and other things that are environmentally safe.
- Using the CSR funds for activities related to the environment and has great benefits for the community.

5. Media

Educate the public to provide information relating to the environment, in this case the communication environment. Environmental problems are very complex, so they are different in their delivery from regular communication. In the implementation, communication environment related to the science of environmental psychology, legal environment, political environment, cultural environment, and economic environment.

Constraints in educating people for green-oriented marketing

Constraints in educating people for green-oriented marketing are:

1. Society

- Lack of awareness in sorting the waste by categories of organic waste trash an organic and paper waste.
- Lack of awareness of using green packaging

Penta-helix

Intelligent urban region through ability to collaborate.

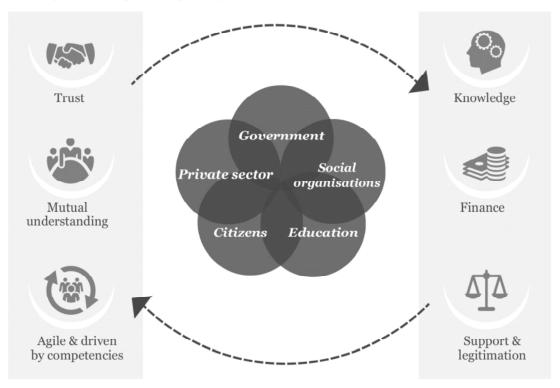


Figure 3: Public Education Model for Green Marketing Oriented Involving Pentahelix

Lack of awareness of purchasing and using green products

2. Research

- Research related to the environment are not yet integrated between problems and solutions.
- Lack of data relating to green marketing.
- The research funds are limited

3. Government

- Government policies relating to the environment is still limited.
- Lack of socialization government programs relating to the environment.
- Regulation Law No.18 Year 2008 about waste management, Law No. 81 in 2012 about household waste management has not been effective implementate.

4. Company

There are still many companies that dispose of chemical waste into the river, which eventually pollute the environment.

- Waste not yet fully recyclable naturally / biological processes.
- CSR is not optimally used for activities related to the actual environment of great benefit to society.
- Still a few companies doing business social that the public is less aware of the importance of protecting the environment.

5. Media

- The role of the media has not balanced in informing the activities related to the environment among the interests of society, businesses and governments.
- Ineffectiveness of communication related to the improvement of product and process.

5. CONCLUSION

The peoples in areas of research already familiar will the concept of green marketing, but in daily life behavior has not been oriented on green marketing. Variable information, age, location of residence, education and employment Cluster distinguish people who understand and do not understand the green marketing. The role of society, academia, corporations, Governments and media or pentahelix play an important role in educating people-oriented green marketing. Constraints in educating people for green marketing-oriented awareness include, costs, limited government policies relating to the environment, many companies have not recycled waste and unbalanced role of the media in informing the environmental activities between the interests of society, businesses and governments.

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Appendix

Data Analysis

	Tree	Tree structure 1 (Split Input Data into Training and Testing Samples (Classification))									
	Depe	endent	variable	: Green Ma	rketing						
		Options: Categorical response, Tree number 1									
	Left	Right	Size of	N in class	N in class	Selected	Split	Split	Split	Split	
1	2	3	114	36	78	Understand	Complete		Not Complete		
2			19	11	8	Not Understand					
3	4	5	95	25	70	Understand	Age	37.0			
4	6	7	80	17	63	Understand	Location		Rural		
6			1	1	0	Not Understand					
7	8	9	79	16	63	Understand	Education		Bachelor	Others	
8			11	0	11	Understand					
9	10	11	68	16	52	Understand	Sex		Female		
10	12	13	32	11	21	Understand	Age	20.5			
12			10	6	4	Not Understand					
13	14	15	22	5	17	Understand	Occupation		Official		
14			2	2	0	Not Understand					
15			20	3	17	Understand					
11	18	19	36	5	31	Understand	Occupation		Enterpreneur		
18			8	3	5	Understand	·				
19	20	21	28	2	26	Understand	Location		Outskirt		
20			1	1	0	Not Understand					
21			27	1	26	Understand					
5			15	8	7	Not Understand					

Tree structure 1 (Split Input Data into Training and Testing Samples
(Classification)) Dependent variable: Green Marketing Options: Categorical
response. Tree number 1

	<u>response, rree r</u>	esponse, Tree number 1			
	Observed	Predicted Cukup Paham	Predicted Paham	Row Total	
Number	Not Understand	29	7	36	
Column Percentage		60.42%	10.61%		
Row Percentage		80.56%	19.44%		
Total Percentage		25.44%	6.14%	46.15%	
Number	Understand	19	59	78	
Column Percentage		39.58%	89.39%		
Row Percentage		24.36%	75.64%		
Total Percentage		16.67%	51.75%	68.42%	
Count	All Groups	48	66	114	
Total Percent		42.11%	57.89%		

The results of the calculation accuracy of prediction models

	Pred	diction	The accuracy of
1 100000	Not Understand	Understand	classification
Not Understand	19	8	70.37%
Understand	1	38	97.44%
	The accuracy of total classifica	tion	86.36%

Based on the results of testing data, calculations were obtained that the model tree above has a good classification accuracy (over 70%).