

The Factors Affecting Green Consumer Behavior: Evidence from Malang, East Java, Indonesia

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Article Info

Volume 82

Page Number: 7560 - 7570

Publication Issue:

January-February 2020

Abstract:

Green consumers recognize the importance of buying food that uses the environmentally friendly packaging. The concept of marketing also pays attention to the green consumer behavior. Food products with green packaging are sold more expensive, so that consumers' willingness to pay (WTP) is needed. Purpose - The research purpose is to identify and analyze the influence of WTP, demographic, psychographic, and religiosity factors toward the consumer behavior in buying food with the green packaging and toward disposal behavior of the food packaging. Design/methodology/approach – The study was conducted in Malang, with samples from the academic community at UMM, as well as urban communities in Malang City and rural communities in Malang Regency. Primary data was obtained by interview and questionnaire filling. Data analysis used the Structural Equation Model which was supported with WarpPLS software. Findings - The results show that three latent variables namely WTP, psychographic and religiosity affect green buying behavior. Demographic factors also affect green buying behavior with a lower level of significance. The factors influencing disposal behavior are religiosity and psychography. Religiosity affects green buying behavior and disposal behavior with highest path coefficient and significance. Practical implications - Recommendation is given to some parties. The agribusiness has to replace the food packaging with the green one, and step by step eliminate usage of plastic packaging. The stakeholders of environment should educate people not only about disposal behavior but also about green buying behavior. Specifically, the religious organizations are hoped to give environmental awareness as part of religious activities. Originality/value – The study is the first to analyze the effect of religiosity on the green consumer behavior and green disposal behavior. The result indicates that religiosity is an important factor in affecting green buying behavior, besides willingness to pay and psychography.

Keywords: Green consumer, religiosity, willingness to pay

Article History

Article Received: 18 May 2019

Revised: 14 July 2019

Accepted: 22 December 2019

Publication: 04 February 2020

I. Introduction

The use of food packaging potentially pollutes the environment. Currently, most food and beverage packaging is made from plastic. Plastic is a

material that is difficult to decompose in nature, so it pollute the environment that threatens environmental sustainability in general, and in particular the preservation of agricultural land.

The efforts to preserve the environment have been being encouraged by the government, researchers, as well as organizations and people who care of environment. In line with these efforts, the food industry has begun to develop environmentally friendly packaging that can be recycled, such as paper packaging.

Marketing is managing a more profitable customer relationship. The important marketing objectives are to target new customers by promoting superior value as well as maintaining and growing existing customers by delivering satisfaction (Kotler & Armstrong, 2012). Marketing strategy is a marketing logic where the company hopes to create customer value and achieve profitable customer relationships (Kotler & Armstrong, 2012).

According to Porter (1979), to reach benefit in the long run, a business has to respond strategically to the five forces in competition, namely: competitors, customers, suppliers, new business player (entrant) and substitute products. Customers are important factor in marketing strategy. Ideally, the pro-environment customers choose the pro-environmental products. Proofing this matter needs support from the adequate research.

Lancaster (1966) stated that: 1) The good possesses characteristics which rise utility to the consumer; 2) In general, a good will possess more than one characteristic, and many characteristics will be shared by more than one good; 3) Goods in combination may possess characteristics different from those pertaining to the goods separately. It is clear that many intrinsic qualities of a single product can be transferred to several characteristics. An example is the consideration of choosing between foods with the same brand with different packaging. The difference of packaging includes the pro-environmental materials.

The consumer's awareness on environment is also important for companies to design products and marketing strategies to take consumer safety and loyalty in the long-term (Krukaset & Sahachaisaeree, 2010). Consumers who aware of environment realize the importance of purchase food with environmentally friendly packaging. The marketing concept has also begun to respond the pro-environmental consumer behavior. Therefore, the green products has been being developed, so that there are green buying consumers (Gonçalves et al, 2016).

Many researches about pro-environment consumers has been done extensively in broad countries. The purchasing situation influences the behavior of pro-environment consumers in purchasing products (Grimmer et al, 2016). The Consumption values that psychologically owned by consumers also influence environmental friendly (green) purchasing behavior (Gonçalves et al, 2016).

Awareness to the environment and the influencing factors have been studied in several civitas academic. Several factors influence college students' awareness to the environment (Yasici & Babalik, 2016). Several instructional approaches develop environmental awareness of the school students (D'Souza et al., 2014).

There are several researches on pro-environment topics in Indonesia. For example, pro-environment consumers in usage of plastic bags (Saraswaty, 2018), pro-environment consumers in the campus environment (Ursula et al, n.d.), the relationship between pro-environment attitudes and behavior (Palupi & Sawitri, 2017).

Willingness to pay (WTP) is the most powerful factor influencing green purchasing behavior (Moser & Moser, 2015). The behavior of pro-environment consumers often has implications for the WTP more expensive for the environmentally friendly products. Eco-friendly wine consumers

are willing to pay more, even though there is a gap between the statement of WTP and the actual price paid (Barber et al, 2012).

No research has been done to analyse religiosity factor on the pro-environment consumer behavior. Religiosity is important to be added as an independent factor to complement the WTP, demographic, and psychographic factors. The study focus on packaging of food products is very important, because the food packaging waste has become an environmental pollution problem.

The research objectives include: 1) Identifying consumer behavior whether it is environmentally friendly, in purchasing packaged food and disposing food packaging; 2) Analyzing the influence of WTP, demographic, psychographic, and religiosity on green buying behavior and disposal behavior of the food packaging.

II. The Previous Research

Research on pro-environment consumers has been done extensively in foreign countries. Birgelen et al. (2009) analyzed the relationship of individual factors of consumer in selecting beverage packaging and packaging disposal behavior. Beverage products in Germany use a lot of packaging. The individual factors analyzed are awareness, attitudes, subjective norms, and behavior. The results showed that the purchasing behavior of environmentally friendly beverage and decisions of disposal are related to the environmentally friendly attitudes. The research model was adopted in this study, with application on the packaged food products to adapt the consumer situation in Indonesia. The demographic, psychographic, and religiosity factors were added to the model.

Grimmer et al. (2016) analyzed the influence of the purchasing situation on the pro-environmental consumers' behavior on purchasing products. The analytical method used is multiple linear regression. The results show that the purchasing

situation weakens the relationship between intention and behavior, and that time, price, willingness to travel long distances, willingness, and ease of purchase affect the relationship. The similarity of this research is the focus on pro-environment consumers, but the difference is the focus on purchasing decisions and food packaging disposal behavior.

Gonçalves et al. (2016) analyzed the effect of consumption values that psychologically owned by consumers on green purchasing behavior. Variables analyzed include functional, social, emotional, conditional, and epistemic values. The analytical method is qualitative comparative analysis (QCA). The results show that functional value is always important, but the only functional value is not enough to predict pro-environment behavior. There are three values that are always combined with functional values, namely emotional, conditional and social values. This research equation focuses on pro-environment purchasing behavior, however the difference is the model formulation and analyzes.

Research topics on pro-environment consumers in Indonesia are still limited. Ursula et al. (n.d.) analyzed the consumer behavior on pro-environment in the campus. The variables analyzed include aspects of individual differences, psychography, demographics, internal and external influences on environmentally friendly consumption behavior. The analysis used is qualitative description. The results shows that the factors influencing the environmentally friendly consumers behavior are individual differences (demographics and psychography), environmental awareness. This study completes various variables, mainly the really new is religiosity.

Palupi & Sawitri (2015) analyzed the relationship between attitudes and pro-environmental behavior. Variables analyzed include attitudes and behavior of pro-environment. The analysis method is descriptive qualitative. The results show

a positive attitude towards pro-environment influences pro-environmental behavior. This study has similarities in using theory of plan behavior (TPB), but the SEM model is different.

Relawati et al. (2017) analyzed the influence of psychographic and economic factors on the demand of local and imported apples. The psychographic factors include concern for environmental sustainability and environmental friendly apple cultivation, trust of pesticide free, and free of bacterial contamination. Various psychographic factors are related to pro-environmental attitudes. The analysis used was multiple linear regression. The results show that environmental factors, attention to environmentally friendly cultivation, and trust of pesticide free had a positive effect on demand of local apples. The similarity of this study is to examine consumer concern for the environment, but the difference is focused on pro-environment food packaging.

Relawati et al. (2017) analyzed the hedonic price of apples which are influenced by product quality attributes, price, and place to purchase. Data were analyzed by multiple linear regression to determine the effect of independent factors on apple hedonic prices. The results show that the taste attribute and various other attributes had a positive effect on the price of local and imported apples. The difference in this study uses the price variable with the concept of willingness to pay (WTP) because pro-environment food products have higher price.

Saraswaty (2018) analyzes the pro-environment consumers behavior of in using plastic bags. The difference of this research is more focused on the use of plastic or other packaging for food.

The consumer behavior on pro-environment often implies willingness to pay more expensive for the environmentally friendly products. Krystallis & Chrysohoidis (2005) analyzed the WTP of

organic food products. The variables analyzed were consumer attention and WTP on organic products. The factor analysis was used, followed by t test. The results show that the WTP and factors differed between types of organic food. These factors include food quality and safety, trust in certification, and brand names. Organoleptic characteristics, price and socio-demographic profile of consumers are not determinants of WTP for organic products.

Barber et al. (2012) measured psychographic factors to assess purchase intentions and WTP of environmentally friendly wine. The results show that consumers are willing to pay more for environmentally friendly wine, even though there is a gap between the statement of willingness to pay and the actual price paid.

3. Methods

The research was conducted in the City and Regency of Malang, focussing on the civitas academic of UMM, as well as the urban and rural communities. Primary data was obtained from interviews and questionnaires. The number of consumer respondents from various criteria was 152 people.

Hypothesa were proposed for the second purpose, formulated as follows.

- 1) The Factors of WTP, demography, psychography, and religiosity affect the pro-environmental purchasing behavior of the packaged foods.
- 2) The Factors of WTP, demography, psychography, and religiosity affect the pro-environmental disposal behavior of food packaging.

III. Data analysis uses SEM (Structural Equation Model) method.

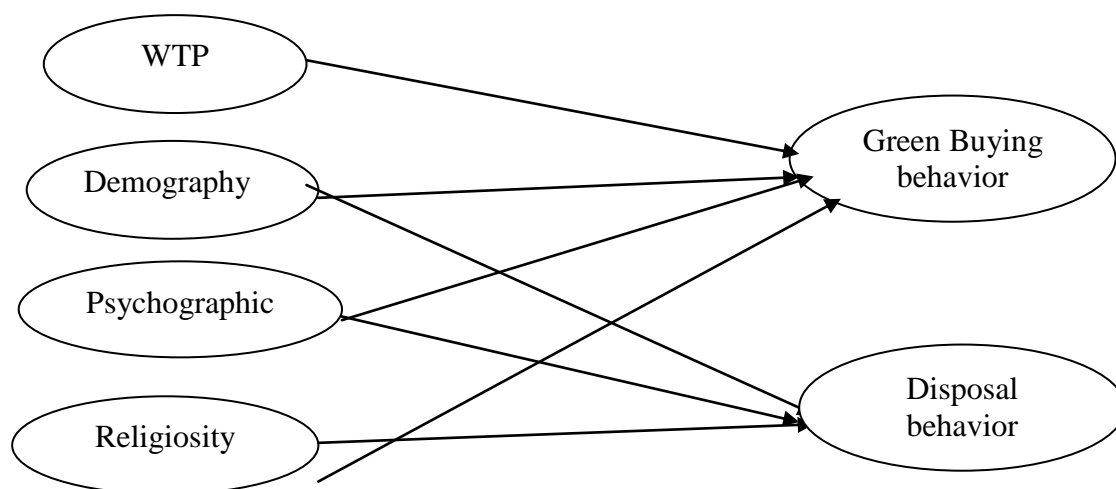


Figure 1. The SEM model for the pro-environmental consumer behavior

Table 1. The latent variable and indicators of the SEM model

Latent Variable	Indicator	Measurement
WTP	Willing to pay more expensive for the green food packaging	Score: 1 – 5
Demography	Gender	1 = male; 2 = female
	Age	age in years
	Education	1 = Elementary School 2 = Junior High School 3 = Senior High School 4 = Diploma and Under Graduate 5 = Master and Doctorate
Psychographic	Environmental awareness	Score: 1 (lowest) – up to 5 (highest)
	Attitude to the environment	Score: 1 (lowest) – up to 5 (highest)
	Self control to the environment	Score: 1 (lowest) – up to 5 (highest)
Religiosity	Observance of worship according to his/her religion	Score: 1 (lowest) – up to 5 (highest)
	Active in religious activities	Score: 1 (lowest) – up to 5 (highest)
	Active in religious organization	Score: 1 (lowest) – up to 5 (highest)
	Believes that protecting the environment is part of faith	Score: 1 (lowest) – up to 5 (highest)
Green buying behavior	Buy food with green packaging (paper, etc.)	Score: 1 (lowest) – up to 5 (highest)
	Avoid food plastic packaging	Score: 1 (lowest) – up to 5 (highest)
Disposal behavior	Separate trash	Score: 1 (lowest) – up to 5 (highest)
	Burn plastic waste	Score: 1 (lowest) – up to 5 (highest)
	Utilize/sell recycled waste (can, cardboard, bottle, etc.)	Score: 1 (lowest) – up to 5 (highest)
	Process green waste	Score: 1 (lowest) – up to 5 (highest)

IV. Result and Discussion

Sample Characteristics

Table 2. Sample characteristics

Demography	Amount	%
Gender		
Male	61	40.1
Female	91	59.9
Age		
<= 20 years	13	8.6
21 – 30 years	87	57.2
31 – 40 years	31	20.4
41 – 50 years	13	8.6
>50 years	8	5.3
Education		
Elementary School	18	11.8
Junior High School	10	6.6
Senior High School	60	39.5
Diploma and Under	51	33.6
Graduate	13	8.6
Master and		
Doctorate		

Respondents are distributed based on gender, age and education (Table 2). Various age and education intervals are represented by a number of respondents, but there is dominant number of female respondents, aged 21-30 years and high school education. The distribution of respondents

on various demographic indicators allows the samples were distributed normally.

Description of purchasing behavior of packaged food

Purchasing behavior of packaged food does not ideally meet the criteria of green buying behavior. Consumers who consistently buy food with environmentally friendly packaging are only 8.6% (Table 3). The highest number (55.9%) is consumers who already have a commitment to buy environmentally friendly packaging but have not been able to do it consistently. The reason is that consumers have not been able to consistently buy food with environmentally friendly packaging because of limited availability in the market.

Consumers could not avoid purchasing food in plastic packaging. The average score of this indicator is very low (2.82) compared to the score for purchasing green packaging. The highest number of them has a score two (44.7%). The reason consumers buy food in plastic packaging is because the majority of foods sold in the market are packaged in plastic.

Table 3. The score of green buying indicator

Green buying behavior	% respondent at each score					Average score
	1	2	3	4	5	
Buy food with green packaging (paper, etc.)	0	16.4	19.1	55.9	8.6	3.57
Avoid food plastic packaging	4.6	44.7	20.4	25.0	5.3	2.82

Description of disposal behavior of food packaging

The environmentally friendly behaviors that are encouraged are consumer's separate the organic and non-organic waste, burning plastic waste (if it is possible), utilizing recycled waste, and processing organic waste. The four activities must be applied to rural communities, because generally there is not any waste transportation services. Meanwhile in urban communities,

burning plastic is not possible because it will pollute the residential environment, but there are available waste collection services.

Table 4 shows the disposal behavior that is good enough is the separating organic and non-organic waste, with an average score of 4.08. Its distribution is 33.6% of consumers who always sort waste, and 51.3% consumers who are not consistent in separating waste. The lowest score is utilizing recyclable waste such as cans, cardboard

boxes, bottles (average 3.44). Even though they could have collected this category of waste and

given or sold it to other people who want to use it.

Table 4. The score of disposal behavior

Disposal behavior	% respondent at each score					Average score
	1	2	3	4	5	
Separate trash	1.3	7.9	5.9	51.3	33.6	4.08
Burn plastic waste	0	11.2	29.6	42.1	17.1	3.65
Utilize/sell recycled waste (can etc.)	1.3	13.2	39.5	32.2	13.8	3.44
Process green waste	3.9	19.1	20.4	17.5	19.1	3.49

4.4 The Result of SEM Analysis

The SEM model meets the test of convergent and discriminant validity. All factor loadings are more than 0.30 and significant (p-value <0.001) so the

analyzed factors meet convergent validity. Each indicator has a loading greater than the cross loading, so it meet discriminant validity. The composite reliability is achieved because (more than 0.70).

Table 5. Model fit and quality indices

Description	Result	Acceptable	Ideally
Average path coefficient (APC)=0.157, P=0.011	0.157		
Average R-squared (ARS)=0.135, P=0.021	0.135		
Average adjusted R-squared (AARS)=0.115, P=0.036	0.115		
Average block VIF (AVIF)	1.147	<= 5	<= 3.3
Average full collinearity VIF (AFVIF)	1.236	<= 5	<= 3.3
Tenenhaus GoF (GoF)	0.281	small >= 0.1 medium >= 0.25 large >= 0.36	
Sympson's paradox ratio (SPR)	1.000	>= 0.7	1
R-squared contribution ratio (RSCR)	1.000	>= 0.9	1
Statistical suppression ratio (SSR)	1.000	>= 0.7	
Nonlinear bivariate causality direction ratio (NLBCDR)	0.857	>= 0.7	

Table 5 shows that all test criteria meet the suitability of the SEM model, some test criteria even meet the ideal criteria. Therefore, the results of SEM analysis can be used in explaining the phenomenon of relationships among variables.

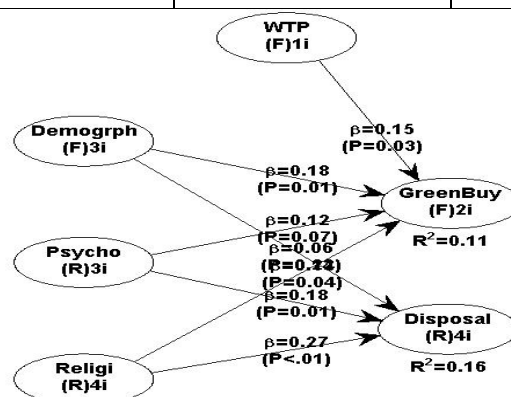


Figure 2. The SEM of green buying and disposal behavior

Figure 2 shows the SEM model and the results of path coefficient between latent variables. The influence of psychographic variables on green buying behavior has a rather large error level (6.8%) but it still significant. One variable is not significant, namely the influence of demographics on disposal behavior. The detailed result is presented in Table 6.

Table 6. Path Coef. And P-value of Each Latent Variable

Dependent Var.	Path Coef. and P-value of Latent Variable			
	WTP	Demographic	Psychographic	Religiosity
Green buying behavior	0.153 (0.025)	0.180 (0.011)	0.118 (0.068)	0.142 (0.035)
Disposal behavior		0.060 (0.225)	0.177 (0.012)	0.271 (<0.001)

Table 6 shows that almost all latent variables significantly influence "green buying behavior" and "disposal behavior". Three latent variables, namely WTP, demographics, and religiosity affect the "green buying behavior" with 5% error. Psychographic variable also affects green buying behavior even with a lower level of significance (6.8%). Based on the path coefficient, the first two most powerful variables are demographic and WTP.

Table 6 also shows the factors influencing disposal behavior, psychography and religiosity, at 1% error rate. Religiosity has a stronger influence, with a greater path coefficient.

Table 7. Profile of Variables

No	Latent variable	Indicator	Factor loading	Average
1	WTP	• WTP	1.000	1.000
2	Demography	• Gender (male and	0.257	-

	female)			
	• Age (years)	-0.814	29.06	
	• Education	0.794	3.20	
3	Psychographic			
	• Environmental awareness	0.774	4.61	
	• Attitude to the environment	0.864	4.42	
	• Self control to the environment	0.775	4.39	
4	Religiosity			
	• Observance of worship	0.661	4.52	
	• Active in religious activities	0.871	4.04	
	• Active in religious organization	0.827	3.82	
	• Protecting environment as part of faith	0.577	4.58	
5	Green buying behavior			
	• Buy food with green packaging	0.666	4.01	
	• Avoid food plastic packaging	0.666	3.82	
6	Disposal behavior			
	• Separate trash	0.483	4.43	
	• Burn plastic waste	0.804	3.86	
	• Utilize/sell recycled waste	0.725	3.94	
	• Process green waste	0.535	3.49	

Note: All p-value <0.001

The effect of WTP on "green buying behavior" has a path coefficient of 0.153 and p = 0.025, so the hypothesis is accepted. The path coefficient

marked positive indicates that the higher the WTP the green buying behavior increases. The results of this study support Krukaset & Sahachaisaeree (2010) that consumers who aware on the environment are beginning to realize the importance of buying food using green packaging; and Barber et al. (2012) who stated that consumers are willing to pay more expensive for the environmentally friendly wines.

The influence of demographic variables on "green buying behavior" has a path coefficient of 0.180 and $p = 0.011$. The consumer's demography influences green buying behavior. The strongest indicator of demography is age with a factor loading of -0,814. The negative factor loading means that the older consumer has the lower green buying behavior. The resent average age of respondents is 29.06 years old. Respondents who are over 40 years old show lower green buying scores. Another indicator that has a high factor loading is education (0.794). The higher education the greater score of green buying behavior. At present the majority of respondents' education is high school graduates. These results are in line with Birgelen et al. (2009) that the purchase of environmentally friendly drinks and packaging disposal decisions are related to environmentally friendly attitudes.

The influence of psychography on "green buying behavior" has a path coefficient of 0.118 and p -value = 0.068. The strongest indicator on this variable is attitude towards environment with a factor loading of 0.864. The possitive factor loading means that the more concerned consumer's attitudes towards environment, the better "green buying behavior". Curently the average score of respondents' attitude towards environment is 4.42 (maximum score 5). Other indicators (environmental awareness and self contorl) also have a high factor loading (>0.7). The results of this study are in line with Palupi & Sawitri, (2017) who states that a possitive attitudes

towards pro-environment behavior influence environmental caring behavior; Ursula et al. (n.d.) who found that pro-environmental behavior is influenced by demographic and psychographic factors; and Relawati et al. (2017) that various psychographic factors related to pro-environmental attitudes positibely influence the demand for local apples. The results of this study are also in line with Gonçalves et al. (2016) although with different terms that is emotionally combined with functional values in consuming environmentally friendly foods. Emotional is part of psychological factors.

The influence of religiosity variables on "green buying behavior" has a path coefficient of 0.142 and $p = 0.035$. Consumer's religiosity influences green buying behavior. The strongest indicators in this variable are religious activities (0.871) and activities religious organizations (0.871). The positive factor loading means that the more active in religious activities and religios organization the better consumers' green buying behavior. At present the average scores of religious activities and religious organizations are 4.04 and 3.82 (maximum score of 5).

Latent variables that influence disposal behavior are psychography and religiosity. The influence of psychographic variables on "disposal behavior" has a path coefficient of 0.177 at error rate of 1.2%. Meanwhile the influence of religiosity variables on "disposal behavior" has a path coefficient of 0.271 at an error rate less than 1%. This study supports Palupi & Sawitri, (2015) that a positive attitude towards pro-environment behavior affects environmental care behavior.

Religiosity has a greater path coefficient than psychography. It means that religiosity has higher influence on pro-environmental disposal behavior, rather than psychography. Religious activities often be integrated with lectures about environmental cleanliness, how to be grateful by preserbing God's creation, and others. Religious

organizations often conduct religious activities, although people who participate in religious activities are not members of religious organization. At present, the average score of religious activities and organization are 4.04 and 3.82 (maximum score 5), so that activities and religious organizations are 4.04 and 3.82. Therefore activities in religious organization still need to be increased. The increasing religious activities and religious organizations are expected to increase pro-environmental disposal behavior.

The results of this study have implications for at least two interests, namely the continuity of agribusiness and the environmental sustainability. These two interests can clash each other, if they do not be harmonized. If business people only use the principle of cost efficiency and profit maximization, they will not care about the environmental sustainability. It needs the support of agribusiness actors to eliminate waste that pollutes the environment.

The agribusiness actors of processed food need to pay attention to the recent consumer behavior. The environmental issues and the concept of go-green have influenced the consumers' attitudes and behavior, especially them who already have environmental awareness. Consumers who have middle to upper purchasing power have a willingness to pay (WTP) more expensive for food products that use environmentally friendly packaging. The analysis results are significant in this aspect. Therefore, the agribusiness of packaged food can diversify the packaging, namely go-green packaging for the upper middle market segment, and plastic packaging for the lower market segment. Thus, plastic packaging waste can gradually be eliminated.

The stakeholders of environmental management (government, NGOs, religious organizations, researchers, universities, etc.) have educated many people on disposal behavior that is environmentally friendly. However, the activity

on educating the public as consumers is still limited. The harmonization between environmental stakeholders and agribusiness actors needs to be done. Educating consumer aims to make them aware of buying food products with green packaging. Willingness to pay a little more for green packaging is a big contribution to the environmental sustainability.

Religious organizations are also important parties in preserving the environment. The contents of religious lectures that strengthen efforts to protect the environment are supported by the arguments contained in religious teachings. Public awareness with a religious approach is expected more effective in preserving the environment.

V. Conclusion

Purchasing behavior of packaged food does not ideally meet the green buying behavior criteria, because its availability in the market is still limited. Consumers have not been able to avoid buying food in plastic packaging, because the majority of food sold in the market is still use plastic packaging. The disposal behavior which is quite good is the separating the organic and non-organic waste, but other disposal activities that are more pro-environment have not been carried out.

Green buying behavior is influenced by demography, WTP, religiosity, and psychography. Disposal behavior is influenced by variables of religiosity and psychography. Increasing indicators on all of these variables will increase green buying behavior and disposal behavior.

Recommendations are given to several parties. Food agribusinesses have to use the green packaging, and gradually eliminate the use of plastic packaging. Environmental stakeholders need to educate people not only on green disposal behavior but also on green purchasing behavior. Specifically, religious organizations are expected

to provide environmental awareness material as part of religious activities.

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