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Promoting Ecofriendly Transportations among Students in Bandung, Indonesia

[1]S.A. Pratminingsih, [2]Ni PutuNurwita, [3]Nunu Nugraha

Abstract*---Environment degradation is a crucial issue in various countries including Indonesia. Awareness of the environment will change someone in buying a product or service. This study aims to examine the effect of environmental awareness, green product awareness and green perceived value on the decision to use ecofriendly transportation. 200 respondents involved in this study who were selected by accidental sampling. A set of questionnaires distributed to the respondent face by face. The results of this study indicate that environmental awareness, green product awareness and green perceived value influence the decision to use ecofriendly transportation. This point implies that government must be more active in socializing the importance of the environment and promoting ecofriendly transportation to the public.*

Keywords*---Environmental awareness, Green product awareness, Green perceived value, Ecofriendly transportation.*

I. INTRODUCTION

Transportation is a daily necessity of modern society especially in cities. There are various types of transportation that can be used by the public, including: private cars, buses, bicycles or other public transportation and motorbikes. Bandung is one of business cities in Indonesia which experienced a significant level of economic growth and is the third most populous city in Indonesia. Increasing the number of population as well as the welfare of the community is the reason for the increase in the number of vehicles in Bandung. The Regional Revenue Office of West Java Province (2016) said that the composition of vehicles in Bandung consisted of 27.12% cars and 72.88% for two wheels (Bandung City Central Bureau of Statistics, 2017: 29). This very high increase in the number of vehicles causes air pollution, noise and congestion. This is in accordance with previous researches that prove that vehicles or transportation are a source of air pollution, noise and large congestion (Jia, Appoloni, Wang, 2017; Chan, Lau, Zou, Cao, lai 2002).To overcome this problem, it is necessary to reform transportation management by inviting the public to use ecofriendly transportation modes. The environmentally friendly modes of transportation are bus rides/subway, walking, bicycle riding and carpooling (Chen Kai and Liang Haokai, 2015). One of the government's efforts to build community interest to use efficient and environmentally friendly transportation technology is through the Bandung Eco Transport movement (Nuryaman, 2018). This movement was initiated by the Bandung City Transportation Agency in 2016. In the mobility and transportation sector, in particular, awareness of the environment, awareness of green product products and perceived value proved to have a positive influence on the use of environmentally friendly transportation (Afroz, Masud,Akhtar,Islam, Duasa, 2015; Groth, Buchauer and Scholg, 2018)).

The purpose of this research is to examine the relationship of environmental awareness, green product awareness, perceived green value on ecofriendly transportation decisions. This research will first discuss various theories relating to the purchase of ecofriendly transportation such as: environmental awareness, ecofriendly product awareness, ecofriendly perceived value and ecofriendly purchase. Based on this review, the framework is described. Furthermore, data analysis is performed to prove the hypothesis and finally to draw conclusions.

[1]***Widyatama University***
[2]***Widyatama University***
[3]***Widyatama University***

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II. LITERATURE REVIEW

II.I. Ecofriendly Purchase

As the consumers 'awareness towards increasing consumers, products and services for product or services. Ecofriendly purchases aim to reduce environmental damage and the health and preservation of living things (Lee, 2009; Tilikidou, 2007). In purchasing green products, consumer goods will carry out several stages consisting of: 1) there is a need for products / services to meet their needs and desires; 2) Information seeking; 3) evaluation of alternatives; 4) choose the best alternative; 5) make a purchase (Kotler, Keller, 2016). In transportation, ecofriendly transportation, transportation, energy savings, reducing transportation, such as buses, bicycle rides, train rides, roads, bus rides or more (Hao kai, 2015). These factors include: environmental awareness, green product awareness, green perceived value.

II.II. Environmental Awareness

Environmental awareness is the cognitive dimension of environmental behavior (Hartman and Ibanez (2006). Environmental awareness will guide someone to make consumption choices on products that are environmentally friendly, not damaging to health, and biodegradable (Bartels and Onwezen, 2014; Borin Mullikin, Krisnan, 2013). Consumers who are environmentally conscious will give more value to products that are environmentally friendly and they tend to choose these products (Magistris & Garcia., 2008; D'Soza, 2006) In terms of transportation, environmental awareness is one of the important factors in deciding the choice of transportation modes. Consumers who has appreciation towards environmental issues he will choose the ecofriendly transportation (Afroz, Masud, Akhtar, Islam, Duasa, 2015).

II.III. Green Product Awareness

With the increasing level of public awareness of environmental conservation, their buying behavior also changes. Consumers who are starting to become environmentally conscious will look for environmentally friendly products. Green products are products whose production processes are carried out in a way that does not negatively impact the environment, does not use harmful ingredients, can be reused, uses natural ingredients and in human health, including in the process of distribution, promotion and consumption (Tomasin, Pereira, Borchardt, Sellitto, 2013, Ottman, 2008; Shrum, McCarty, Lowrey, 1995; Pavan 2010; Borin etal, 2013). Green product awareness is the ability of consumers to identify a product based on their memory about environmental preservation. A person who is not aware of green products tends not to choose green products to meet their needs. So it can be said that environmental awareness encourages someone to be aware of the need for green products (Yu et al., 2019).

II.IV. Ecofriendly Perceived Value

Consumers will evaluate a product or service by comparing the benefits received with the sacrifices that will be incurred in obtaining certain products. Companies that want to maintain a good and strong relationship with consumers and have competitive advantages must be able to provide high value and unique products offered (Roig, Garcia, Tena, 2009). McDougall and Levesque (2000) state that perceived value is the result or benefits received by the customer in relation to the total cost (including the price paid plus other costs associated with the purchase). When associated with the purchase of goods or services that are environmentally friendly, the value to be obtained is called green perceived value. According to Chen and Chang (2012) green perceived value is a comprehensive assessment of the benefits of a product or service made by consumers by comparing what they receive and what they release based on their desires and expectations regarding the environment and conservation needs. The higher the value of green perceived value, the higher the desire to buy an item or service. In terms of transportation, perceived green value is what consumers will get by using ecofriendly transportation for the environment and for themselves (Kahn and Morris, 2008).

Table 1:*Research Hypotheses*

No	Hypotheses
1	Environment awareness has significant influence on green product awareness.
2	Green product awareness has significant influence on green perceived value.
3	Green perceived value has significant influence on decision to use ecofriendly transportation.
4	Environmental awareness has significant influence on Green perceived value
5	Green product awareness has significant influence on decision to use ecofriendly transportation.
6	Environmental awareness has significant influence on decision to use ecofriendly transportation.

II.V. Research Method

This study uses a quantitative approach. With the aim of understanding the influence of environmental awareness, green product awareness and perceived value on the decision to use ecofriendly transportation. Respondents from this

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study were university students. Students are chosen as respondents because as prospective leaders must be aware of the importance of buying environmentally friendly goods in an effort to preserve the environment.

All measures were taken from the various previous studies and were adapted to suit the current study context. The authors develop questionaire consisting of two parts: The first part is the questions related to respondents' demographic such as: gender, age, department, years of entry. The second part are questions related to the research variable : environmental awareness, green product awareness, perceived value of green transportation, ecofriendly transportation choice. Question was evaluate using a 5point Likert scale of ranging 1 (strongly disagree) to 5 (strongly agree). The respondent of this study were private university students in Bandung, Indonesia. A self-administered questionnaire was handed to 200 students in a private university in Bandung using accidental sampling method. Data distribution is done directly by meeting students because in this way the questionnaire return rate is higher compared to other methods. Data analysis is done using SPSS.

III. RESULT AND DISCUSSION

III.I. Respondent Profile

Table 2 summaries the respondent profile. The respondent consists of 47% is male and 52.50 is female. Most of the respondents are in the age of 17 years to 25 years old (99.50 %) and most of them study in their second and third year in the university.

Table 2:*Respondent Profile*

Variable	Description	Frequency	Percentage
Gender	Male	95	47.50
	Female	105	52.50
Age	<17 years old	0	0
	17 – 20 years old	109	54.50
	21 – 25 years old	74	37.00
	>25 years old	17	8.50
Years of Entry	2018	9	4.50
	2017	111	55.50
	2015	65	32.50
	2016	15	7.50
Pocket Money	<1.000.000 IDR	21	10.50
	1000.000 – 3.000.000	84	42.00
	3,100.000 – 5.000.000	68	34.00
	➢ 5.000.000	27	13.50

III.II. Validity and Reliability Test

Validity is a measure that indicates the degree of conformity of the instrument in measuring the research t variable. A question is said to be valid when the validity coefficient value was greater than or equal to 0.30 (Sugiono, 2014). The validity of research instruments is measured by calculating the actual square root of each variable. The results reveal that the square roots of each variable ranges from 0.311 to 0.522. All the root square values are above the table value, indicating good validity of the construct.

Table 3:*Validity Test*

Environmental Awarness			
Items	**Corrected item total correlation**	**Criteria**	**Conclusion**
EA1	0.686	0.3	Valid
EA2	0.513	0.3	Valid
EA3	0.493	0.3	Valid
EA4	0.702	0.3	Valid
EA5	0.694	0.3	Valid
EA6	0.684	0.3	Valid
EA7	0.691	0.3	Valid
EA8	0.739	0.3	Valid

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EA9	0.682	0.3	Valid
EA10	0.793	0.3	Valid
EA11	0.782	0.3	Valid
Green Product Awarness			
Items	Corrected item total correlation	Criteria	Conclusion
GP1	0.609	0.3	Valid
GP2	0.610	0.3	Valid
GP3	0.717	0.3	Valid
GP4	0.575	0.3	Valid
GP5	0.677	0.3	Valid
GP6	0.680	0.3	Valid
GP7	0.750	0.3	Valid
GP8	0.700	0.3	Valid
GP9	0.473	0.3	Valid
Green Perceived Value			
Items	Corrected item total correlation	Criteria	Conclusion
PV1	0.541	0.3	Valid
PV2	0.543	0.3	Valid
PV3	0.611	0.3	Valid
PV4	0.690	0.3	Valid
PV5	0.759	0.3	Valid
PV6	0.724	0.3	Valid
PV7	0.635	0.3	Valid
PV8	0.656	0.3	Valid
PV9	0.643	0.3	Valid
PV10	0.655	0.3	Valid
PV11	0.711	0.3	Valid
PV12	0.745	0.3	Valid
PV13	0.708	0.3	Valid
PV14	0.657	0.3	Valid
Ecofriendly transportation purchase			
Items	Corrected item total correlation	Criteria	Conclusion
D1	0.513	0.3	Valid
D2	0.379	0.3	Valid
D3	0.630	0.3	Valid
D4	0.619	0.3	Valid
D5	0.449	0.3	Valid

III.III. Reliability Test

To measure the reliability of the tools used in this study, alpha Cronbach's coefficient was used, where the value must be greater than 0.7. Based on the results of the calculation, the results show that all propositions are valid because they have a value> 0.7. The results can be seen in table 3

Table 4:*Cronbach Alpha coefficient*

Variabel	Items	Cronbach's Alpha	Kriteria	Kesimpulan
Environmental Awarness	11	0.916	0.6	Reliable
Green Product Awarness	9	0.887	0.6	Reliable
Green Perceived Value	14	0.927	0.6	Reliable
Decision to use ecofriendly transportation	5	0.749	0.6	Reliable

IV. RESULTS

The purpose of this study was to see the relationship between environmental awareness of green products, perceived value and the ecofriendly transportation decision to use. From table 4, it can be seen that the environment of awareness has a positive relationship with green product awareness of 0.661. Ecofriendly product awareness was predicted by environmental awareness 43.7% (R2 = 0.43.7) of the variance in ecofriendly product awareness, indicating a moderate R squared value. This is in accordance with the research carried out by Kumar, Grag and

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Makkar (2012) who conducted research in India on the behavior of young generation. It is clarified that people will be aware of the importance of the product if they are aware of the importance of the environment. Thus, H1 was supported. Green perceived value was predicted by green product awareness, 39% (R2 = 0.39) of perceived value, indicating a moderate R square value. Therefore, H2 was accepted. Green perceived value has a positive and significant impact on purchasing green products (Raharjo (2015). Furthermore, green perceived value is also proven to have a significant influence on environmentally friendly transportation decisions. H3 is accepted. Environmental awareness also influences green perceived value significantly which is 13.8%, H4 is accepted, and finally H5 and H6 are also accepted because green product awareness and environmental awareness are significantly proven to have an influence on ecofriendly transportation decisions.

Table 5:*Hypotheses Testing*

Hipotesis	Path	Coefficients	Sig.	Decision	r^2
H_1	EA => GP	0.661	0.000	Supported	0.437
H_2	GP => PV	0.624	0.000	Supported	0.390
H_3	PV => D	0.394	0.000	Supported	0.155
H4	EA => PV	0.372	0.000	Supported	0.138
H_5	GP => D	0.226	0.001	Supported	0.051
H_6	EA => D	0.126	0.042	Supported	0.016

V. DISCUSSION

Students as the next generation who will become leaders of the nation are expected to behave environmentally friendly in consuming goods or services. The results of this research prove that awareness of the environment will make people aware of the need for environmentally friendly products or services. This research shows that students have an awareness of the environment and also have an awareness of the need for environmentally friendly products. Previous studies have shown that awareness of the environment is one of the main determinants of people being aware of the need for green products and subsequently using environmentally friendly transportation (Siddique, Hossain, 2018; Kumar etal, 2015, Afroz,et al 2013, Heffner, Kurani, Turentine, 2007). This study also proves that green product awareness has an effect on green perceived value. Seeing this, of course, the government and businessmen should continue to disseminate the importance of environmental awareness because of the increasingly critical condition of our environment. Individual who has an awareness of the environment, in purchasing their needs will realize the importance of green products. In terms of transportation, the government should be more active in promoting ecofriendly transportation to the community. The government can provide information to the community how the impacts of transportation public health and the environment degradation

Furthermore, green perceived value influences purchasing decisions. So, in choosing environmentally friendly modes of transportation consumers make a careful assessment of whether the benefits obtained will be in accordance with their personal and environmental benefit. Therefore, entrepreneurs must communicate the benefits or benefits of environmentally friendly transportation for the community and the generation that will come. As explained by Kotler and Keller (2016) that integrated marketing communication is very important to persuade consumers to buy the products offered.

VII. CONCLUSION

This research discusses how the influence of environmental awareness, awareness of green products, and green perceived value on the decision to use environmentally friendly modes of transportation among students. With the increasing level of public welfare and the level of industrialization in Indonesia, the use of environmentally friendly transportation will be increasingly needed. Public awareness of environmental problems, especially in the younger generation, needs to be improved both through government regulations and by the community action. This is important because people who are aware of environmental preservation will certainly prefer to buy environmentally friendly products.

This research certainly has some limitations. The first limitation is that the number of respondents used in this research consists of only 200 students from private universities. For the future, the respondent should be larger and from various universities. The second limitation is methods used in this research only questionnaire surveys, it will be better if in the next research, the researchers use several research methods so that it will have more comprehensive results.

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