

EFFECT OF ECOLOGICAL AWARENESS, PERSONAL NORMS AND ECOLOGICAL ATTITUDE TO CONSERVATION BEHAVIOR

Rahajeng Arundati¹
Heru Tri Sutiono
Ignatius Agus Suryono

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ABSTRACT

This research aims to analyze the conservation behavior that becomes the new lifestyle of consumers. The need for the preservation of consumers and green products further increases consumer demand. This study examines the variables of ecological awareness, personal norms, and environmental attitudes that affect conservation behavior. Conservation behavior is behavior that leads to environmental sustainability. This research was conducted because there are several empirical issues related to the findings of the relationship of attitude to behavior. The relationship of attitude to conservation behavior still needs to be reviewed because there are several different findings. Previous studies have shown that the role of attitudes towards conservation behavior still has varied relationships. This study uses respondents who are pro-environment. The number of samples was 152 people. Data analysis techniques using PLS-SEM. The results showed that ecological awareness, personal norms, and ecological attitudes influence conservation behavior.



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1. INTRODUCTION

Rapid population growth in developing countries leads to increased consumption of products and, ultimately, to environmental problems. Ozone depletion, loss of biodiversity, global warming, land degradation and Lack of drinking water make the ecological unsafe. Industrial waste from untreated factories, coal-fired power plants; diesel power; and vehicle gas emissions are some of the main examples of pollution causes (Shahnaei, 2012). Governments, NGOs, businesses and individuals have taken various actions to preserve the environment. The type of activity taken by the

legislature is the presence of Law of the Republic of Indonesia Number 32 of 2009 concerning the disallowance on ecological insurance and the board which incorporates the denial of contamination, embeddings perilous and poisonous items (B3), entering waste into natural media, land clearing by consuming, etc.

Phenomena that occur in Indonesia concerning environmental awareness can be seen among others from the government's concern for environmentally friendly conservation behavior. Namely, the issuance of the Menteri Riset Technology and Pendidikan Tinggi

¹ Corresponding author: Rahajeng Arundati
Email: ajeng.arundaty@gmail.com

instruction number 1 / M / INS / 2019 regarding the prohibition on the use of disposable plastic drinking water bottles and plastic bags in the Ministry of Research, Technology and Higher Education. This shows that environmental issues have become a concern and need. Examples are (1) Appeal not to use plastic bags when shopping at supermarkets (Superindo, Indogrosir, Lottemart). (2) Appeal not to use plastic straws in fast-food restaurants (McD, KFC). (3) The use of recycled paper for wrapping products.

Nguyen et al. (2016) state that conservation behavior is an activity that refers to environmental sustainability. This conservation behavior is a behavior that leads to efforts to preserve the environment while taking into account the benefits that can be obtained now and in a sustainable manner. Green behavior by consumers is to buy environmentally friendly products daily. Producing and consuming green products has been done in stages by consumers who have become mindful of the benefit of sustainable nature protection. The concept of green products or green products is the keyword for nature conservation (Nguyen et al., 2016). Green behavior is about how consumers integrate environmental considerations into every purchase decision. In addition to several phenomena that show concern for conservation behavior, this study was also conducted because there were several empirical issues related to the results of research on the connection between ecological-attitude and pro-environment activities. The influence of attitudes on conservation activities (pro-environment) still needs to be reviewed because there are several different findings. Research by Albayrak et al. (2013) states that the existence of attitude towards conservation behavior (pro-environment) has varied relationships. Not always, this attitude towards the environment influences pro-environment behavior. Even Akehurst et al. (2012) and Nittala (2014) confirmed the existence of a weak relationship between attitudes and activities that lead to the environment. Kasier et al. (1999) showed that, although the level of public attention to the environment was high, he concluded that a portion of the results of the application indicated a moderate connection between attitudes and pro-environmental behavior, some showed a weak relationship, and others found no relationship between both.

Researchers, including Ajzen (2001), consider that attitudes are not sufficiently capable of creating environmental behavior. In fact, consumers who have a clear attitude to items that are oriented towards environmental sustainability do not always show green buying behavior. The inconsistency of this attitude-behavior relationship is also supported by the results of research by Lakatos et al. (2016). According Lakatos et al. (2016), who analyzed the effect of customer attitudes in Romania on the decision to carry on in an earth amicable way and to preserve the environment, produced a non-significant relationship. The results of

this research also report that a conclusive attitude towards natural insurance cannot produce activities that lead to the pro-environment. On the other hand, the results of research led by Sugandini et al. (2018) state that conservation behavior is influenced by environmental attitudes felt by mediating environmental attitudes.

This research focuses around the impact of attitudes on behavior dependent on TRA and the model of Predictors of Environmental Behavior (PEB). In general, TRA and PEB models explain the linear relationship between environmental awareness and concern and conservation behavior. However, Kollmuss and Agyeman (2002) argue by basing on the aftereffects of past exact research on the relationship of attitudes that are not always supported. Kollmuss and Agyeman (2002) also show that TRA and PEB are not strong enough to explain the linear relationship between attitudes and behavior. on the other hand, Kollmuss and Agyeman (2002) show that knowledge and attitudes will influence intentions that ultimately create behavior. Based on several empirical findings that there are still various debates about the results of research related to pro-environment attitudes, this study analyzes conservation behavior with antecedents of ecological awareness, personal norms, and ecological attitudes.

2. LITERATURE REVIEW

2.1 Social Marketing Theory

Nanda's (2015) states that the term social marketing was instituted by Kotler and Zaltman in 1971. Social marketing forms a design of activities in solving environmental problems by creating motivation to implement healthy lifestyles (Nanda, 2015). According to Kotler and Keller (2016), social marketing is a marketing activity to develop valuable communication so that it can influence beneficial behavior; social marketing topics usually include public health and environmental sustainability. In social marketing business showcasing procedures that start from the investigation, arranging, usage, and assessment of projects are intended to impact conduct that leads to voluntary personal and community welfare.

Four main ideas in social marketing according to Vazifehdust et al. (2011) namely: (1) Focus on voluntary behavior change: in social marketing there is no compulsion in behavior. (2) Social marketers adhere to the principle that behavioral change must have clear benefits for customers (3) Social marketing also starts with marketing research, segmentation, targeting and positioning. (4) Social marketing aims to improve welfare for individuals and society.

2.2 The Theory of Green Marketing

The idea of environmentally friendly marketing, according to Agyapong et al. (2014), can be likened to green marketing, environmental marketing, and eco-friendly marketing. Green marketing is a process undertaken by companies to carry out activities of sending ecologically merchandise/maintenance to make consumer enjoyment (Soonthonsmai, 2007). Green marketing is useful for serving customers in a sustainable and profitable way, it is an environmentally responsible management process. Green marketing is regularly utilized conversely with social promoting, eco-friendly marketing, or environmental marketing. Usually, a pro-environment company will face many challenges and high production costs.

Ward (2017) claims that a holistically environmentally responsible process for meeting customer and community needs is environmentally friendly marketing. Companies that implement green marketing will ensure that the production process does not damage the environment (Chen, 2010). Pro-environment marketing can be seen from the activities of product modification, green production processes, green packaging, and advertising changes that lead to pro-environment (Wahab, 2018).

Marketing challenges today are (1) ecological and social issues. Companies must be able to adapt to changing customer needs, new regulations, and social conditions due to increasing socio-environmental issues for business processes. (2) the concept of sustainability demands a paradigm shift in the marketing function.

2.3 Conservation behavior (CB)

Conservation behavior is a consumer behavior that leads to environmental sustainability by paying attention to the sustainable balance of nature (Kaiser et al., 2005). Stern (2000), defines conservation behavior as behavior to preserve a sustainable environment. Furthermore, Stern (2000) states that conservation behavior changes the availability of resources and protects ecosystems. Conservation behavior is a specific action that leads to environmental preservation activities. Stern (2000) described five activities in understanding conservation behavior: (1) Being an environmental activist (actively participating in environmental conservation activities). (2) Politically participating in the signing of the petition that leads to environmental sustainability. (3) Consumer behavior leads to purchasing green products, recycled products, reducing energy use (buying an efficient water heater), and changing consumption habits (such as: using public transportation when traveling, replacing environmentally friendly soap when washing). (4) Ecosystem behavior (such as planting mangroves, planting plants for greening, protecting wild animals, reducing the risk of forest fires). (5) Other practices in the workplace, for example, are reducing production waste, energy efficiency, demanding environmental

pollutants. Nguyen et al., (2016) show indicators of conservation behavior as follows: (1) Do not use aluminum foil and plastic containers, but utilize reusable containers (2) save water when washing, showering, etc. (3) turn off the lights when leaving the space to spare vitality (4) refusing to buy products with packaging that cannot be recycled (5) utilizing public facilities or walking when traveling.

2.4 Conservation behavior (CB)

A characteristic of people who have environmental awareness is someone who has the capacity for the interpretation of the intercourse between environmental quality sustainability and current human behavior (Liu et al., 2014) and their ability to take part in environmental activities (Mei et al., 2016). Du et al. (2018) divide environmental awareness into three components, namely: ecological behavior, perception, and attitude. Environmental awareness creates environmental sensitivity in the community, social groups, and individuals (Omoogun et al., 2016). Indicators of ecological awareness, according to Bronfman et al. (2015), are (1) Pay attention to environmental problems and sources of information about those problems (2) Caring about green purchases, (3) Consciousness of environmentally friendly products (eco-products).

Ecological awareness is a person's concern for something around him, including environmental stewardship, environmental knowledge, and perceptions of consumer effectiveness (Angelovska et al. (2012). Du et al. (2018) conducted research on the causes of changes in environmental awareness in rural Chinese communities which ultimately had an impact on environmental management. The results show that ecological awareness (EA) can influence conservation behavior. Ma, Rau & Guo (2018) explore the effect of EA on the aim to buy green products. The results show that EA influences environmental attitudes, and intention to buy green makeup.

H1: Ecological awareness influences ecological attitude

EAs on green products are important for green buying behavior (Rather & Rajendran, 2014; Ma et al., 2018). Du et al., (2018) did an observation using Analytic Hierarchy Process (AHP) to determine changes in ecological consciousness in the scope of rural communities. The conclusion of his research indicate that EA influences ecological attitudes and conservation behaviors. Mei et al. (2016) examined environmental performance related to climate change and water quality in Malaysia. The consequences of his research display that there is a connection between EA and conservation behavior (water contamination, air contamination, squander the board, and environmental change).

H2: Ecological awareness affects conservation behavior

2.5 Personal Norms (PN)

Personal Norms are self-concepts about moral obligations to perform certain behaviors. Bronfman et al. (2015) claim that moral obligations towards society and the environment are encouraging individuals to have a pro-environment attitude. Moral obligations shape attention to the results that the conduct of individuals affects the environment so that the behavior of these individuals will lead to saving the environment and the responsibility of preserving the environment. Stern (2000) suggests the Value Norm Theory (VBN) Model to evaluate the behavior of pro-environment individuals showing that PN influences an individual's general beliefs about the environment. PN shapes individual awareness and the consequences of their behavior on the environment.

Jansson et al. (2015) show that VBN theory includes personal norms related to attitudes, values, and beliefs. VBN theory incorporates awareness of environmental problems, responsibility, and environmental compliance as antecedents of PN. Indicators of Personal Norm according to Bronfman et al., (2015) namely (1) Morally responsible for protecting nature, (2) Demands feeling to preserve the environment in daily behavior, (3) Encouraged to do environmental protection, (4) Feelings of guilt if consuming too much energy and water. PN is a form of individual ethical responsibility to protect the environment, so the formation of certain behaviors is based on the belief that the activity is all in all correct to do. Shaw et al. (2015) also define PN as an individual's moral obligation to be careful in an environmental community. Moral obligations in pro-environmental research are identical to PN (Stern, 2000). PN becomes a center segment for the Norm actuation model and the Value-conviction standard hypothesis (Stern, 2000). Both of these theories have been used to predict pro-environment behavior (Barbarossa et al., 2016).

H3: Personal Norms influence the ecological attitude

Barbarossa et al. (2016); Van der Werff and Steg (2015) states that individuals who feel an ethical commitment to the environment will be liable for their condition. Whitmarsh (2009) argues that PN will motivate individuals to act pro-environment and recycling behavior. Nguyen et al. (2016) tested EA in Vietnam and showed results that PN affected CB (Bronfman et al., 2015)

H4: Personal Norms influence conservation behavior

2.6 Personal Norms (PN)

According to Schiffman's and Kanuk's (2010) attitude theory, positive attitudes of consumers towards objects are followed by positive behaviors. This shows that when consumers have positive beliefs about the

consequences of something choices, then consumers decide to behave following beliefs. This attitude refers to psychological tendencies expressed by evaluating certain entities with several levels of like or dislike. Referring to Fishbein and Ajzen (1975) the function of attitude is very strong for predicting behavior on certain objects. This implies the more explicit the demeanor measure, the more precise it is in predicting behavior.

Manzanal et al. (2007) define attitudes as emotional tendencies that can be assessed. Attitudes can be defined as feelings that are beneficial or disliked towards characteristics of the physical environment or related problems. Environmental attitudes or environmental concerns are seen as the basis for motivation to behave ecologically (Geiger et al. 2018). EAtt is characterized as a mental propensity in evaluating the likes and dislikes of individuals in the environment. Attitude is an inherent construction, so it can't be watched straightforwardly.

EAtt, according to Kaiser et al. (2005) are (1) perspectives toward the earth, and (2) mentalities towards natural conduct. Attitudes towards the environment generally refer to environmental problems. EAtt is measured independently of the cognitive and affective components. Bronfman et al. (2015) reveal the variables that determine CB, namely: norms, values, personal capacities, attitudes, beliefs, habits, and contextual strengths. Schultz et al. (2004) state that EAtt as an assortment of convictions that influence one's behavioral intentions relevant to the environment.

This entity considers itself to be an intact part of the natural environment. ecological problem according to most environmental sociologists is a natural human attitude towards the environment. Nguyen et al. (2016) conducted a study to build attitudes toward behavior that was designed to address gaps related to pro-environment consumer behavior. The results show that ecological attitude influences conservation behavior.

H5: ecological attitude influences conservation behavior

3. RESEARCH METHOD

This research is explanatory research with a survey approach. This research was conducted to test the hypothesis. The population of this study is pro-environment consumers who live in the Special Region of Yogyakarta, Indonesia. The sample in this study was that most consumers in the Special Region of Yogyakarta behaved in an environmentally friendly manner. Sampling is done using the method of non-probability sampling. Criteria for respondents are individuals who have carried out or been involved in environmental conservation activities. Respondents can act as initiators, influencers, users, or decision-makers. The number of samples refers to Hair et al., (2012), with

the minimum sample for statistical power that can be accounted for is 5-10 times the parameters analyzed.

Data collection procedures in this study used a list of questions or questionnaires. The data in this study were obtained by providing a list of questions or questionnaires to respondents online, using this research using a structural equation analysis model that explains the relationship between variables. The data analysis tool used in this study is Smart PLS 3.2.8. PLS-SEM is one of the techniques Structural Equation Modeling (SEM) that can analyze latent variables, indicators, and measurement errors directly. PLS can be used with a small number of samples and can be applied at all data

scales. PLS-SEM analysis uses a two-step approach, (1) evaluation model is the model measurement model outer used for instrument testing, and (2) the inner model used for testing hypotheses from the path analysis proposed in the study.

4. RESULT

4.1 Respondent Characteristics

This study used 152 respondents to analyze CB with antecedent EAtt, EA, and PN. Table 1 present the characteristics of the respondents used in this research.

Table 1. Description of respondents

Characteristics	Description	Amount
Gender	Male	62
	Female	90
Ages	18-21 years old	81
	22-25 years old	36
	26-30 years old	10
	>31 years	25
Education level	High school / vocational	63
	Diploma / Bachelor Degree	89

Characteristics of respondents 'data indicate that respondents' ratings of the question items raised are high because they have an average answer ranging from 3.43 to 4.22.

4.2 Outer Model Test Results

The outer model refers to testing the legality and dependability of each research instrument. The Outer Model tests Convergence Validity, Discriminant Validity, AVE, and Composite Reliability. The suggested value is > 0.7 for convergent validity. The results of external loading tests (Convergent Validity and Discriminant Validity) are all valid. All instruments

in this study had AVE values > 0.5 and Composite Reliability ≥ 0.70 . So that all research instruments are said to be reliable.

4.3 Inner Model Test Results

Inner Model (Structural Model) or also called the influence test or hypothesis test. The test result's outer model shows that all the instruments analyzed are valid and reliable so that they can proceed with testing the inner model. The testing of inner models includes the coefficient of determination (R^2), Q^2 predictive relevance, and Goodness of Fit (GoF). In table 3 illustrates the results of the structural test/inner model.

Table 3. Results of Inner Model

Testing	Results	Criteria
The coefficient of determination (R-square) Attitude (R_1^2) Conservation behavior (R_2^2)	0.337 0.323	Moderate
<u>Q^2 predictive relevance</u> = 0.2168	21.68%	Good, meaning that the observed values have been reconstructed well with the predictive relevance
The goodness of Fit (GoF) $GoF = \sqrt{AVE \times R^2}$ = 0,079	7.9%	Small

4.4. PLS - Algorithm

PLS algorithm can be seen in Figure 1. Interpretation of these results: R^2 Indicates that attitude is influenced by ecological awareness and Personal Norms for the remaining 33.7% by 64.3%, influenced by other

components that are excluded from the model. While conservation behavior is influenced by EAtt, EA, and PN by 32.3%, the remaining 67.7% is influenced by other factors not included in the model.

CB is affected by Attitude, awareness, and personal norms of 21.68, meaning that the values observed have been reconstructed well with predictive relevance. The goodness of Fit (GoF) is utilized to approve on the

whole structural model. Criteria in assessing Goodness of Fit (GoF) are 0.1 (small GoF), 0.25 (GoF medium), and 0.36 (large GoF) (Ghozali, 2015). Goodness of Fit (GoF) value in this study is 0.079, which means small.

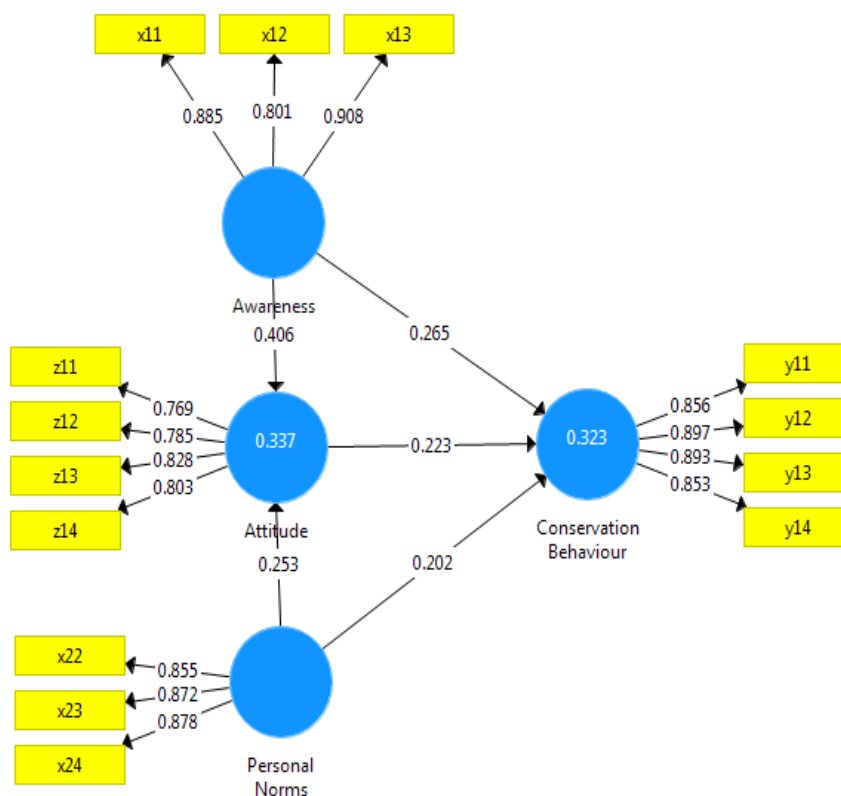


Figure 1. PLS-Algorithm Model of Conservation Behavior

4.5 Results of Hypothesis Testing

T value and the significance value is performed for hypothesis testing. The recommended t-value is ≥ 1.96 , and the significance value or p-value ≤ 0.05 . Hypothesis test results can be found in table 4.

Table 4. Results of hypothesis testing

	Original Sample	T Statistics	P Values	Hypothesis
EAAtt→CB	0.223	2.537	0.011	Supported
EA→EAAtt	0.406	5.423	0.000	Supported
EA→CB	0.265	3.050	0.002	Supported
PN→EAAtt	0.253	3.011	0.003	Supported
PN→CB	0.202	2.633	0.009	Supported

5. DISCUSSION

5.1 The Effect of Ecological Awareness on Ecological Attitude

The results of this research show that Ecological awareness effect ecological attitude, which is indicated by the p-value $0,000 \leq 0.05$ and the t-test value of 5.423

≥ 1.96 . (Accept the first hypothesis). EA affects the EAAtt of 40.6%. It can be stated that better consumer awareness of environmental conservation, the more comfortable consumers are to be environmentally friendly. The results of this study support Angelovska et al. (2012) which states that environmental awareness (ecological awareness) which is one's concern for something around him, including caring for the environment, ecological knowledge and perceptions of consumer effectiveness affect consumer attitudes to preserve their environment. Du et al. (2018) also shows that environmental management measures can be changed from someone who has ecological awareness. Ma, Rau & Guo (2018) investigate the impacts of EA and utilization esteems on green buy intentions, which indicate that EA influences EAAtt, and perceptions of consumer effectiveness in EA also have a clear connection with green buy intentions.

5.2 The Effect of Ecological Attitude on Conservation Behaviour

The results of this research indicate that EA has an influence on CB, as indicated by p-value $0.002 \leq 0.05$ and a t-test of $3.050 \geq 1.96$ (Accepting the second hypothesis). EA affects CB by 26.5%. It can be stated that the top the degree of consumer awareness of

environmental preservation, the better the behavior to preserve the environment. The results of this study support Rather and Rajendran (2014), which states that consumer awareness about environmentally friendly products is important in shaping green buying behavior. Ma et al. (2018) also show that a high EA can improve people's ecological care behavior among consumers regardless of their income level. Du et al. (2018) also show that awareness influences EAtt, and EA also influences conservation behavior. Mei et al. (2016) also stated that there is a correlation between EA and Malaysian behavior towards conservation behavior.

5.3 The influence of personal norms and ecological attitude

The conclusion of this research indicate that PN has an impact on EAtt. Indicated by the p-value of $0.003 \leq 0.05$ and a t-test of $3.011 \geq 1.96$ (Accepting the third hypothesis). PN has an influence on conservation behavior by 25.3%. It can be stated that the higher the morale and responsibility of consumers towards environmental preservation will shape the positive behavior of customer towards environmental conservation. The results of this research support Shaw et al., (2015), which states that people perform certain behaviors because the person believes that what he is doing is right. Shaw et al. (2015) show that customer who have a ethical commitment to act with caution in communities and environments that are vulnerable to their activities influence attitudes to behave to protect their environment (Stern, 2000). Barbarossa et al. (2016) show that personal norms are used to anticipate assorter pro-environmental attitudes in the theory of norms of value-trust, including conservation behavior (Van der Werff & Steg, 2015). Bronfman et al. (2015) also showed that personal norms influence ecological attitude.

5.4 The effect of personal norms and conservation behavior

The conclusion of this research indicate that Personal Norms have an influence on Conservation Behavior, which is indicated by the p-value of $0.009 \leq 0.05$ and a calculated value of $2.633 \geq 1.96$ (Accepting the fourth hypothesis). Personal norms have an influence on conservation behavior by 20.2%. It can be stated that the higher the morale and responsibility of consumers towards environmental preservation, it will increase the conservation behavior or behavior to preserve the environment. The results of this study support Barbarossa & De-Pelsmacker (2016); Van der Werff & Steg (2015), which states that consumers who feel morally obligated to the environment increase their behavior to be environmentally responsible. The results of this study also support Whitmarsh (2009). They argue that personal norms are the primary motivation for actions related to the environment, and the discoveries additionally uncover that ethical obligations

(personal norms) are the second most well known explanation behind recycling behavior. Nguyen et al. (2016) observing the environment in Vietnam to conduct research on consumer awareness of the surrounding environment. The conclusion indicate that personal norms influence pro-environment behavior (conservation behavior). Bronfman et al. (2015) also showed that personal norms influence conservation behavior.

5.5 Ecological attitude and conservation behavior

The results of this research indicate that EAtt influences CB. This is indicated by a p-value of $0.011 \leq 0.05$ and a t-test of $2.537 \geq 1.96$ (Accept the fifth hypothesis). Ecological attitude has an influence on conservation behavior by 22.3%. It can be stated that the better the attitude of consumers towards environmental preservation, the better the behavior of conservation or behavior to preserve their environment. The conclusion of this research have espouse Schultz et al. (2004). They are shows that EAtt influences CB related to environmental activities. The output of this research also confirms the proceeds of research conducted by Nguyen et al. (2016), which states that ecological attitudes influence conservation behavior.

4. CONCLUSION

This study uses data obtained as many as 152 respondents to the survey with a google-form. Most respondents are students in tertiary institutions and employees in the Special Region of Yogyakarta. Based on data analysis conducted in this study, the conclusions that can be presented from the results of this study are as follows: Ecological awareness and personal norms affect the ecological attitude. Ecological awareness, personal norms, and ecological attitudes influence conservation behavior. This research is expected to provide a reference for future researchers who examine the effect of ecological awareness, personal norms, and ecological attitudes on conservation behavior. This research provides a generalization of findings related to conservation behavior in pro-environment consumers.

The results of this study can be used as information and considerations for companies and governments in defining steps and actions to carry out the practice of green marketing and social marketing related enhancers of an environmental conservation behavior of the consumer. This research can also provide direction for companies and governments in campaigning for conservation behavior to save the environment by considering Ecological awareness factors, personal norms and attitudes in shaping conservation behavior (behavior preserving the environment).

7. LIMITATION AND SUGGESTIONS FOR FUTURE RESEARCH

The results of this research show that ecological awareness has the strongest influence on improving conservation behavior. So it is recommended that every marketer who conducts an environmentally conscious campaign or green products puts more emphasis on increasing individual awareness of environmental issues, caring about buying green products, and awareness of ecological sustainability. Besides, awareness of ecological sustainability (ecological awareness) can also be increased through increased awareness campaigns for the environment so that consumers can behave in an environmentally friendly manner. Thus consumer behavior towards environmental preservation behavior can also be increased, and efforts to protect the environment carried out by the government, companies, and the

community can be achieved. This study shows that the value of R² is moderate. The influence of ecological awareness, personal norms, and attitudes are still reasonable in their impact on the formation of consumer conservation behavior. This research can be replicated again to strengthen the proceeds of this study about conservation behavior that is influenced by ecological awareness, personal norms, and attitude. Future studies are also expected to be able to explore other variables that can predict conservation behavior. Nguyen et al., (2016) showed that the variable environmental interest recognized consumer capability and good commitment could also be considered in predicting conservation behavior.

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RahajengArundati

Faculty of Economy and Business
Universitas Pembangunan Nasional
Veteran Yogyakarta
Indonesia
ajeng.arundaty@gmail.com

Heru Tri Sutiono

Faculty of Economy and Business
Universitas Pembangunan Nasional
Veteran Yogyakarta
Indonesia
heruts@upnyk.ac.id

Ignatius Agus Suryono

Faculty of Economy and Business
Universitas Pembangunan Nasional
Veteran Yogyakarta
Indonesia
agus.suryono@upnyk.ac.id
