

FROM ENVIRONMENTAL KNOWLEDGE TO CONSERVATION BEHAVIOUR

by Dyah Sugandini

Submission date: 28-May-2020 08:14PM (UTC+0700)

Submission ID: 1333414242

File name: QAS_FROM_ENVIRONMENTAL_KNOWLEDGE_TO_CONSERVATION_BEHAVIOUR.pdf (125.41K)

Word count: 6464

Character count: 38169

From Environmental Knowledge to Conservation Behaviour

Dyah SUGANDINI¹, Mohamad Irhas EFFENDI², H.M. THAMRIN³, Unggul PRIYADI⁴, MUAFI⁵

¹Corresponding author, Lecturer of Management Department, Economic and Business Faculty, Universitas Pembangunan Nasional "Veteran" Yogyakarta, Indonesia; E-mail: dyahsugandini2016@gmail.com

²Lecturer of Management Department, Economic and Business Faculty, Universitas Pembangunan Nasional "Veteran" Yogyakarta

³Lecturer of Magister Management Department, Economic and Business Faculty, Universitas Muhammadiyah Tangerang

⁴Lecturer of Economic Department, Economic Faculty, Universitas Islam Indonesia

⁵Lecturer of Management Department, Economic Faculty, Universitas Islam Indonesia

Abstract

Conservation behaviour is a topic that always evolving in the study of the consumerism behaviour. Conservation behaviour is behaviour that leads to consume products that protect nature, leading to environment. Conservation efforts while concerning the benefits that can be gained in the present and future in sustainable. The purpose of this study was to analyze the causal factors of conservation behavior in the term of internal consumer aspect. Research is conducted on the community located in the Yogyakarta Province, Indonesia which consists of 5 districts. The analysis unit in this study is individual. Data are collected from respondents who are shopping in supermarkets and shopping centre in five districts in Yogyakarta Province. The number of samples of each district is 60 people, but the lack of questionnaires of 268 respondents. Statistical technique is using AMOS. The result explains that there is a significant positive effect of; (1) environmental knowledge (EK) on awareness of consequences (AOC); (2) environmental knowledge (EK) on environmental attitudes (EA); (3) awareness of consequences (AOC) on personal norm (PN); (4) personal norms (PN) on conservation behaviour (CB) and (5) environmental behaviour (EA) on conservation behaviour (CB).

Keywords: *environmental knowledge; awareness of consequences; environmental attitude; personal norms; and conservation behavior.*

1. Introduction

Conservation behavior is a specific behavior. A specific behavior is usually thought to be a product of an opportunity and intent, the latter of which is a product of knowledge and attitudes (Fishbein 1967, Zimbardo and Ebbesen 1969). Lately, consumers have changed their behavior toward environmental sustainability (Nguyen et al., 2016), that called as conservation behavior. Usually, conservation behavior is mostly associated with purchasing green products. The emergence of conservation behavior is based on changes in consumer behavior. Consumer behavior has many oriented to environmental protection (Sugandini et al., 2018b). Consumers prefer to consume goods that are not damage the environmental and harmless to his body health.

Some theories that underlie conservation behavior are the theory of reasoned action (TRA), theory of planned behavior (TPB) and the norm activation theory (NAT). The innovation adoption theory of Rogers (2003) is also used to observe consumer adoption behavior related with conservation behavior. TRA developed by Ajzen and Fishbein states that the best prediction of someone's behavior is intention. Behavioral intention is based on two main factors, namely: attitudes and subjective norms. TPB is an extension of TRA that is someone's intention behavior is shaped by three main factors, namely: attitude toward the behaviour, subjective norms and perceived behavioral control (Fishbein and Ajzen, 1975; Azjen, 1991). NAT theory assumes prosocial behavior is the result of the personal norms activation which is defined as a moral action to perform or refrain from certain actions (Schwartz and Howard, 1982).

NAT states that personal norms are already active when a person is admitting and responsible for a certain pro-social behavior that have certain consequence. If the consumer does not act prosocial, it would have a negative consequence on others (Awareness of consequences) and being responsible on pro-social action that has certain consequence (Ascription of Responsibility). If the personal norm is not enabled, no pro-social action is admitted as usual and no pro-social action would follow.

Some pro-environment products can be categorized as innovative products. The previous literature on the adoption of innovative products is not always easily accepted by consumers with certain characteristics (Horsky, 1990; Rogers, 2003; Martin and Bateson, 2007). Holness (2004) adds that the adoption or non-adoption decisions of product innovation always involves the formation of attitudes toward innovation. Considerations for not easily adopting innovative products include risk perceptions, lack of consumer knowledge of product use and the presence of inappropriate marketing strategies.

This study discusses the issue of attitude influence on behavior. Attitude relationship on pro-environment behavior still need to be reviewed because there are several different findings. Previous research Schultz et al., (2004); Albayrak et al., (2013) suggest that the attitude's role toward environmental behavior has varied relationships. The attitude toward environment has not always influence on the pro environment behavior. In fact, Akehurst et al., (2012); Nittala, 2014) indicating that the relationship of attitudes and environmental behavior is very weak. Kasier et al., (1999) reinforce that some research results show moderate, weak and even no relationship between pro-

environment attitude³ and behavior. Kasier et al., (1999) findings confirm that there is a positive relationship between environmental attitude and ecological behavior and also find a significant correlation between environmental knowledge and value of environment. According to Kasier et al., (1999), knowledge and environmental value are a prerequisite for the intention of behaving ecologically which area prerequisite for pro-ecological behavior.

This study focuses on the effect of attitudes on behavior. The underlying reason for this research is that the decision to adopt pro-environment products requires complex decisions. Complex decision making with high involvement requires rational decisions, meaning that consumers can still determine other alternatives. The conservation behavior phenomena is in line with the Holness (2004) research result which shows that the adoption and non adoption decision of product innovation always involves the formation of attitude toward innovation.

2

2. Literature Review and Hypothesis Development

2.1. Conservation Behaviour

This research based on some basic theory, such as TRA, TPB and NAT. In general, TRA, TPB and predictors models of environmental behavior explain the linear model of the environmental knowledge influence that leads to environmental awareness and concern and it will impact on pro-environmental behavior. Kollmuss and Agyeman (2002) explain that there is a linear relationship between knowledge, attitude, and behavior. Knowledge and attitudes affect behavioral intentions which can shape behavior and actions.

Kaharanna (1993) shows that positive attitudes and intentions are not always followed by positive behavior. There are several factors that cause the attitude-to-behavior relationship is not unidirectional. One of them is a situational factor. According to Belk (1975), this situation aspects can cause a person who already has a positive attitude on the purchase of a product discouraged to buy. Fitzimon (2000) states that situational factors cause a person's positive attitudes are not followed by behavior.

The study that do not address the effects of attitudes to behavior are more accurately explained by the behavioral approach which gives less emphasis on thought processes and consumer behavior. The most relevant behavioral approach is used when consumer cognitive activity is minimal. This happens when the consumer is in a low-involvement situation. When in a low-involvement situation, the consumer is in a passive condition and purchases products that have previously been purchased as long as it is satisfactory for them.

In contrast with the more relevant cognitive approach applied to important products with high involvement. In this situation, there is a consumer problem solving involving information retrieval and product evaluation (Schiffman and Kanuk, 2010). When involvement is increases, consumers have stronger motivation to pay attention, understand, and elaborate information related to their purchases. In other words, the higher level of a person's involvement, the higher degree of information retrieval. Important implications in understanding consumer attitudes made marketers easy to influence consumers before deciding on a particular action.

It is conducted by arranging a certain strategy before the consumer decides a particular action. When conservation behavior is explained by the attitude or cognitive aspects of the consumer, it will bring important understanding in practical way. Marketers gain an understanding of certain aspects that can be modified to influence consumer decisions in the long term. On the consumer side, consumers learn the most important innovation aspects so that consumers obtain some informations to decide on purchase (Sugandini et al., 2018b).

Conservation behavior's motive is unique for every con-

sumer. Usually, the conservation behavior occurs within a community. The community of people who love the environment, usually has the intention of behaving towards a high conservation (Sugandini et al., 2018a). One rational reason is people who have the motivation to preserve the environment have unique consumption motivations that are different from other consumers and they support each other to preserve the environment. The conservation behavior occurs voluntarily. Conservation behavior makes consumers more careful in consuming their products. For example, consumers choose environmentally friendly products such as bio-diesel for fuel, low pesticide products, recyclable products and energy-efficient products. Conservation behavior is a consumer behavior that leads to environmental sustainability by considering the sustainability of its products (Kaiser, et al., 2005).

Stern (2000) defines conservation behavior as a behavior to preserve a sustainable environment. Stern (2000) also states that conservation behavior will change resource availability and protect ecosystems. Gough (2002) says that it is difficult to justify conservation behavior properly because conservation is not simple. Sometimes conservation options can disrupt ecosystem habitats, even in a small degree. For example, when we need environmentally friendly solar products, many forests are converted to plantations. Many forests are cut down to expand the jatropha plantation area as biodiesel feedstocks.

McKenzie-Mohr and Smith (1999) suggest that understanding conservation behaviors is important for defining behavior clearly. Conservation behavior is a specific action that leads to environmental activities. Stern (2000); Winther, et al., (1994) and Hungerford and Volk (1990) describe five points to understand conservation behaviour better: (1) become environmental activists by actively participate in environmental conservation activities, (2) politically participate in signing petitions leading to environmental sustainability, (3) consumer behavior by purchasing green products, recycling products, reducing energy use (buying an efficient hot water heater), and changing consumption habits (e.g using public transport, changing environmentally friendly soaps when washing), (4) ecosystem behaviors (e.g putting up bird boxes, planting sea oats, counting wildlife populations, promoting prescribed fire) and (5) other behaviors in the workplace, such as reducing waste production, energy efficiency and sued environmental polluters.

□ Environmental knowledge, Awareness of consequences and Environmental Attitude

Pro-environmental behavior is defined as a conscious behavior that attempts to minimize the negative impact of one's actions on nature (Kollmuss and Agyeman 2002). The initial model of pro-environment behavior is based on environmental knowledge that leads to environmental awareness, which in turn is considered to lead pro-environment behavior. There are three types of environmental knowledge (1) knowledge of the environment, (2) knowledge of environmental conservation; and (3) knowledge gained from one's involvement in nature and the environment⁷.

Many theoretical frameworks have been developed in an attempt to understand and explain pro environmental behavior and have identified several factors that have an influence on positive or negative pro-environmental attitudes. Van Liere & Dunlap (1980); Kollmuss & Agyeman (2002); Evans et al., (2007) have identified factors that influence pro-environment attitudes, namely: demographic factors, external factors (institutional, economic, social and cultural) and internal factors (motivation, pro-environmental knowledge, awareness, value, attitude, notion, and locus of control). Kasier et al., (1999) confirm that there is a positive relationship between environmental attitudes and ecological behavior and find a significant correlation between environmental knowledge and environmental values. According to Kasier et al., (1999), environmental knowledge and values are a prerequisite for ecological behavior intentions which is a prerequisite for pro-ecological behavior. Sugandini et

al., (2018a) conducted a study aimed at analyzing the adoption behavior of mangrove conservation. The results showed that the decision to conserve was influenced by perceived environmental responsibility, human nature orientation, environmental knowledge and environmental attitudes.

H1: There is a significant positive relationship of environmental knowledge (EK) on awareness of consequences (AOC)

H2: There is a significant positive relationship of environmental knowledge (EK) on environmental attitude (EA)

□ Awareness of consequences and Personal Norms

Awareness of the consequences combined with increased social responsibility enhances moral behavior or personal norms. Schwartz's (1977) altruistic behavioral model is linear. Altruistic behavior has positive and negative effects on other community members. According to this altruistic model, a person determines his behavior if there is a connection between awareness of consequences and personal norms. Furthermore, Schwartz's model asserts that norm activation is likely to occur when individuals have two types of belief. First, the acting individual must be aware of the consequences of his actions on the subject of the norm. Second, the individual must be responsible for the cause and prevent this consequence. If the individual values these norms but his decision harms his personal interests, he should implement a defensive strategy. Later, he could reject the consequences of the behavior of neutralizing norm (Schwartz, 1977).

H3: There is a significant positive relationship of Awareness of Consequences (AOC) on personal norms (PN)

□ Personal norms and Conservation Behaviour

Personal norms are personal internal conditions that reflect how far a person is responsible to act morally when faced with an ethical situation (Haines et al., 2008). Personal norms are self-concepts that reflect feelings and moral obligations to perform certain behaviors (Schwartz, 1977). Compliance with personal norms is associated with pride feelings, while disobedience to personal norms is associated with guilt feelings (Onwezen et al., 2013). In an environmental context, research shows that people who have a moral duty to protect the environment tend to reduce the consumption of non-environmentally friendly products (Thøgersen and Olander, 2006). Personal norms have a close relationship with behavior.

Personal norms are the main determinants of one's actions to adopt pro-environment behavior (Stern, 2005). Sanctions and rewards are related to personal norms and are usually attached to self-concept. Personal norms are personal expectations to gain self-esteem, pride, and security. Conversely, non-compliance with personal norms leads to loss of self-esteem, depression, and guilt (Tangney, et al., 2007). Several studies have investigated the relationship between personal norms and the willingness to involve in pro-environment behavior (Dolnicar, 2010). Mehmetoglu (2010) finds that the moral obligation to protect the environment is positively related to pro-environment behavior. Interestingly, personal norms are stronger predictors of other psychological variables (eg personal values, environmental concerns) or socio-demographic characteristics (eg age, education level, political orientation). Additional support for the view that personal norms may influence pro-environmental behavior stems from field experiments conducted by Brown et al., (2010). Thøgersen (2006; Van der Werff and Steg, 2015) shows empirically that people morally obliged to involve in environmentally responsible behavior. Furthermore, a consumer survey by Whitmarsh (2009) argues that personal morality is the dominant motivation for environment action.

H4: There is a significant positive relationship of Personal norms (PN) on conservation behavior (CB)

□ Environmental attitude and Conservation Behaviour

In studying environmental attitudes, it is important to understand pro-environment behavior (Fransson and Gärling, 1999).

In a broad sense, Environmental refers to general attitudes toward the environment and special attention about how one's behavior and the behavior of others towards various environmental issues (Fransson and Gärling, 1999; Kim and Choi, 2005). The operational definition of environmental attitude varies in various studies. By using environmental values, Schwartz (1992) and Stern et al., (1993) develop an ecological value typology that is composed of altruistic (ie values that reflect concern for human welfare), biospheric (ie values emphasizing the quality of the environment and biosphere) and value-oriented egoistic (ie values that focus on maximizing personal outcomes) (Dietz et al., 2005; Steg et al., 2014).

Environmental attitude is important for understanding consumer's ecological awareness (Chan, 2001). Environmental attitude reflects emotional reactions to issues such as food contaminated by pesticides, pollution caused by company operations, and government efforts to control pollution (Chan and Lau, 2000). Attitude is one of the internal factors that has strong influence on behavior. In general, attitudes are harmonious with behavior, although it takes other psychological factors that bridge the intention / behavior intention (Fishbein and Ajzen, 1975). Sheth (1981) argues that, attitude is one of the internal factors that has strong influence on behavior. Attitude is an evaluative predisposition. Attitude has consequences for the way people act on others and the taken actions.

According to the attitude theory of Schiffman and Kanuk (2010), the consumer's positive attitude toward something is followed by positive behavior. It shows when consumers have positive beliefs about the consequences of choosing something, consumers decide to behave appropriately with their beliefs. Chan and Lau (2000) revealed that ecological affect gives an indirect effect to buying behavior of green products, through buying intention. Other studies by Li (1997) and Fraj and Martinez (2007) suggest a positive relationship of ecological affect, green product consumption and ecological behavior. Sugandini, et al., (2018a), examined the environmental attitude effect and environmental behavior in predicting the conservation behavior of mangrove forest. The results showed that environmental knowledge affects the environmental attitude and conservation behavior. Sugandini et al., (2018b), also conducted research to analyze the behavior of nature batik adoption for craftsmen in Special Region of Yogyakarta, Indonesia. The results state that there is perceived influence on environmental responsibility to the environmental attitude and the adoption of batik nature staining.

H5: There is a positive relationship of environmental attitude (EA) on conservation behavior (CB)

3. Research Method

This study embraces the positivism paradigm. The positivism paradigm holds that reality is something that is singular, real, divisible and emphasizes the occurrence of causal relationships whose tests are conducted on a free value basis (Lutz, 1989). So far, there has been no dominant paradigm in consumer behavior (Hunt, 1989). All paradigms are considered capable to underlie the study of consumer behavior. This positivism paradigm focuses on the causes of consumer decision making so that research results are directed to the purpose of marketing practice. This study was conducted in two stages of research. First, the study begins with an exploratory study which is an inductive approach to obtain a clearer picture of phenomena associated with conservation behavior. Second, the research is conducted by a deductive approach using survey design to test the causality relationship between the constants studied.

This study uses survey because it observes a number of factors that explain the existence of the studied phenomenon (Lutz, 1989); Simonson, Carmon, Dhar, Drolet and Nowlis, (2001). The survey is a field study that provides valuable insight into the real context, information about the strength of

ENVIRONMENTAL MANAGEMENT

phenomena, real environmental conditions, and able to identify variables related to the internal and external individual conditions (Simonson et al., 2001). The used data is primary data that obtained through in depth personal interviews and questionnaires filling. In-depth personal interviews are used to explore environmental knowledge, personal norms, awareness of consequences, and environmental attitudes toward conservation behavior. Questionnaires are used to obtain data that are general and that have been described by the theory.

Population in this research is all people in Special Region of Yogyakarta who have conducted conservation behavior. Sampling is conducted by purposive sampling. Criteria of respondents are individuals who involved in the family decision-making process. Respondents may act as initiators, influencers, users, or decision makers at the household level. The unit of analysis in this study is individual. Data were collected from respondents who are shopping at supermarkets and shopping centers in the five regency in Special Region of Yogyakarta. Respondents were asked to voluntarily complete a survey on site and gifted provided souvenirs by the researcher. The sample size of each district is 60 people and the total number of samples are 300 people. After the questionnaire was distributed, only 268 respondents were eligible for further analysis. The time period for data collection is one month from November to December 2017. The number of samples taken is refers to Hair et al., (1998) which states that the minimum number of samples for a data test to have statistical power that can be accountable is five to ten times the parameters analyzed. The number of parameters analyzed in this research is 50. So the minimum sample is 250

respondents. It has already qualified for sample adequacy.

Environmental knowledge, personal norms, awareness of consequences, environmental attitudes and conservation behaviors are essentially subjective. Thus, it based on individual respondents. These five variables are measured using a 5-point Likert scale. This method provides a number of possible alternative responses that can help reduce probability of errors. Each question item is rated by "1" (Strongly Disagree), "3" (Neutral), and "5" (Strongly Agree). Environmental knowledge measurement was adapted from studies conducted by Kaiser et al., (1999); Kaiser and Scheuthle (2003), Chan and Lau (2000) and Sugandini et al., (2018a). Environmental attitude is adapted from the study of Chan and Lau (2000) and Sugandini et al., (2018b). Awareness, personal norms and conservation behaviour is adapted from Kaiser et al., (2005); Nguyen et al., (2016) and Sugandini et al., (2018b). Each variabel is measured using 10 question items. The statistical technique used in this research is AMOS.

3. Results

3.1. Profile of Respondent

Respondents identity categorized by sex, age, education, occupation and income can be seen in Table 1. Table 1 shows that of 268 respondents 51% are male and 49% are female. The most respondents are 41-50 years old (50%), bachelor degree (47%), private employment (45%), income range IDR 3,000,000 – IDR 4,000,000 (37%).

Table 1. Profile of Respondent

Demographics	Characteristics	%
Sex	Male	51
	Woman	49
Age	< 20 years old	1
	20 -30 years old	8
	31 – 40 years old	41
	41-50 years old	50
Education	Highschool/equals	10
	Diploma/academy/baccalaureate	31
	Bachelor Degree	47
	Master Degree	12
Occupation	Private employee	45
	State-owned enterprise employee	26
	Entrepreneur	20
	Students	9
Income (IDR)	< 1000.000	5
	1.000.000 - 2.000.000	5
	> 2.000.000 - 3.000.000	31
	> 3.000.000 - 4.000.000	37
	> 4.000.000	22

3.2. Hypotesis Testing

Table 2 described the goodness index of fit research model. A low chi-square value with significance level less than 0.05 or 0.01 indicates that the actual input matrix is different from the predicted input matrix (Hair et al., 1998). Chi-square value in this

study amounted to 33.9 and has significance level of 0.01. The high value of goodness of fit shows the model ability to extract high empirical data variance. The study result indicates that the conservation behavior model developed as expected. Table 3 shows that all proposed hypothesis are accepted.

Goodness of fit type model	Goodness Index of fit Model	Recommended value	Results	Description
Absolute fit measures	Chi-Square Statistic (χ^2 atau CMIN)	Small	23.10	Excellent
	P	≥ 0.05	0.012	Excellent
	GFI	≥ 0.90	0.965	Excellent
	RMSEA	≤ 0.08	0.081	Excellent
Incremental fit measures	AGFI	≥ 0.90	0.919	Excellent
	CFI	≥ 0.94	0.971	Excellent
Parsimonious fit measures	Normed χ^2 (CMIN/DF)	$1 \leq \text{Normed } \chi^2 \leq 5$	3.725	Excellent

Table 2. Goodness of Fit Value the Main Empirical Model

	Relationship	Expected Direction	Actual Direction	Coefficient Path	CR	Description
H1	AOC ← EK	+	+	0.256	3.092	Supported
H2	EA ← EK	+	+	0.211	3.936	Supported
H3	PN ← AOC	+	+	0.335	2.538	Supported
H4	CB ← PN	+	+	0.394	4.896	Supported
H5	CB ← EA	+	+	0.232	2.687	Supported

Table 3. Summary result of direction test and significance relationship between hypothesized variable

The result shows that the EK effect on AOC is significant, the coefficient path value of 0.256 with a positive direction, and CR value of 3.092. The EK effect on EA is significant, coefficient path value of 0.211 with positive direction, and CR value of 3.936. The AOC influence on PN is significant, coefficient path value of 0.335 with positive direction, and CR value is 2.538. The PN effect on CB is significant, coefficient path value of 0.394 with positive direction, and CR value 4.896. The EA effect on CB is significant, coefficient path value of 0.232 with positive direction, and CR value of 2.687. Thus, it can be concluded that at the level of significance of 0.01, all hypotheses are accepted.

4. Discussion

The purpose of this study is to examine the conservation behavior model that is influenced by EA and PN. The results show that all hypotheses are accepted. The first and second hypothesis state that environmental knowledge has a significant positive effect on awareness of consequences is supported. This indicates that the consumer's knowledge about the good environment is related to the perception of the consequences that resulted from the environmental sustainability orientation. In addition, environmental knowledge can also affect consumer attitudes toward nature. A consumer who understands the natural protection will protect the nature. This research supports the research results of Sugandini et al., (2018b); Can and Lau (2000); Nguyen et al., (2016) and Kaiser et al., (1999).

A third hypothesis states that awareness of consequences has a significant positive effect on personal norms is supported. Consumer who are aware if the consumers do not protect the nature, they would receive consequences for nature destruction and feels guilty. This guilty feeling causes personal norms of a consumer are increasing. The better the awareness of the consequences of their behavior, the more it increases consumer's personal norms. The results of this study support a statement from Stern et al., (1993) using social psychological theory and norm activation model that Schwartz (1977) argued. Awareness of consequences will increase social responsibility that will ultimately increase moral behavior or personal norms.

The fourth hypothesis states that personal norms have a significant positive effect on conservation behavior is supported. It means that if one is aware of the behavior consequences that he did to nature, the behavior toward conservation becomes increased. Consumers will avoid products consumption that can damage nature. Consumers are morally responsible for protecting nature so that their behavior tends to lead to protect the nature. The results of this research support the research of Haines et al., (2008); Schwartz (1977); Onwezen et al., (2013); Thøgersen and Ölander, (2006); Stern, (2005); Tangney et al., (2007); Dolnicar, 2010; Mehmetoglu (2010); Brown et al., (2010); Thøgersen, 2006; Van der Werff and Steg, (2015) and Whitmarsh (2009).

The fifth hypothesis states that environmental attitude has a significant positive effect on conservation behavior is supported. Means that if the consumer has an attitude towards the protection of good nature, then the behavior tends to protect the preservation of nature and the environment. For the consumers who love the environment, the consumption behavior will choose products that are environmentally friendly. Consumers

usually will think when taking decision to consume products. The most likely consideration is whether the product can damage the environment or not. The results of this study support studies conducted by Fransson and Gärling (1999); Kim and Choi (2005); Dietz et al., (2005); Steg et al., (2014); Chan, (2001); Chan and Lau, (2000); Nguyen et al., (2016), Fraj and Martinez (2007), and Sugandini, et al., (2018b).

5. Limitation and Future Research Directions

Limitations of this study is indicated by the existence of research scope in certain settings. This study can only be generalized on the research scope that has subject criteria and certain research objects. Research is also limited to the environmentally friendly products category that provide benefit for nature conservation so it can not be generalized to other products. Future research is expected that the research setting is not only on environmentally friendly products but also green products and organic products so that able to reinforce the justification for these three products types and the generalization is more acceptable.

Brucks (1985) describes three categories of consumer knowledge of product class used in consumer behavior research: (1) *subjective knowledge*; the individual's perception of how many consumers know the product (2) *objective knowledge*; the measure of what an individual really knows the product (3) *The previous experience*; the amount of purchase or consumer experience of using the previous product that have already consumed. According to Philippe and Ngobo (1999), subjective measurement is based on the interpretation and perception of knowledge possessed by individuals, not based on actual knowledge levels. The actual use of knowledge level will be helpful because it can test the real consumer's understanding. Subjective knowledge is related to the use of personal information and other sources when making decisions (Brucks, 1985).

This study only analyzed conservation behavior from the consumer side who have conducted conservation or consumer in consuming the products have already oriented to the nature sustainability. Future research is expected to analyze conservation behavior from consumer side who have not willing to do conservation or refuse to preserve the environment so that there is comparison result from all those three and increase generalization of research findings.

This study only analyzed the factors that influence conservation behavior in terms of environmental knowledge, awareness of conservation, personal norms and environmental attitude. There are other factors that can be used to predict conservation behavior, such as volunteerism, risk aversion, environmental value, environmental utility, social interaction, intention to conserve, environmental concern, moral obligation and perceived consumer effectiveness.

References

- [1] Akehurst G., Afonso, C & Goncalves H. M. (2012), "Re-examining Green Purchase Behaviour and the Green Consumer Profile: New Evidences", *Management Decision*. Vol. 50(5), pp: 972-988.

- [2] Albayrak T, Aksoy Ş & Caber M, (2013), "The Effect of Environmental Concern and Scepticism on Green Purchase Behaviour", *Marketing Intelligence and Planning*. Vol. 31(1), pp: 27–39.
- [3] Ajzen, I. (1991), "The Theory of Planned Behavior", *Organizational Behavior and Human Decision Processes*. Vol. 50, pp: 179-211.
- [4] Ajzen, I., & Fishbein, M. (1975). "Situational variables and consumer behavior", *Journal of Consumer Research*, Vol. 2, pp: 157-174.
- [5] Brown T.J., Ham S.H & Hughes M. (2010). "Picking up Litter: An Application of Theory-based Communication to Influence Tourist Behaviour in Protected Areas", *Journal of Sustainable Tourism*. Vol. 18(7), pp: 879–900.
- [6] Brucks, M (1985). "The Effects of Product Class Knowledge on Information Search Behavior," *Journal of Consumer Research*, Vol. 12 (June), pp: 1-16.
- [7] Chan R. Y. K. (2001), "Determinants of Chinese Consumers' Green Purchase Behavior", *Psychology and Marketing*, 18(4), 389–413.
- [8] Chan, R. Y. K & Lau, L.B.Y (2000). "Antecedents of Green Purchases: A Survey in China," *Journal of Consumer Marketing*, Vol. 17, No. 4, pp: 338-357.
- [9] Dietz T., Fitzgerald A & Shwom R. (2005), "Environmental Values", *Annual Review of Environment and Resources*. Vol. 30(1), pp: 335–372.
- [10] Dolnicar S, (2010). "Identifying Tourists with Smaller Environmental Footprints", *Journal of Sustainable Tourism*. Vol. 18(6), pp: 717–734.
- [11] Evans, G.W., Brauchle, G., Haq, A., Stecker, R., Wong, K & Shapiro, E. (2007). "Young Children's Environmental Attitudes and Behaviour", *Environment and Behavior*. Vol. 39, pp: 635–659
- [12] Fishbein, M. (1967). "Attitude and the Prediction of Behaviour", In M. Fishbein.(ed.), *Readings in Attitude Theory and Measurement*, 52-83, New York: Wiley.
- [13] Fishbein, M & Ajzen, I. (1975), "*Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*", Reading, MA: Addison-Wesley.
- [14] Fitzsimons, G.J (2000). "Consumer Response to Stockouts," *Journal of Consumer Research*, Vol. 27, pp: 249-266.
- [15] Fraj-Andrés E & Martínez-Salinas E (2007). "Impact of Environmental Knowledge on Ecological Consumer Behaviour: An Empirical Analysis", *Journal of International Consumer Marketing*. Vol. 19(3), pp: 73–102.
- [16] Fransson N, & Gärling T, (1999). "Environmental Concern: Conceptual Definitions, Measurement Methods, and Research Findings", *Journal of Environmental Psychology*. Vol. 19(4), pp: 369–382.
- [17] Gough, S, (2002). "Whose Gap? Whose Mind? Plural Rationalities and Disappearing Academics", *Environmental Education Research*. 8, 3, 273-282.
- [18] Haines R, Street M & Haines D, (2008). "The Influence of Perceived Importance of An Ethical Issue on Moral Judgment, Moral Obligation, and Moral Intent", *Journal of Business Ethics*. 81:387–399.
- [19] Hair Jr., Anderson R.E., Tatham R.L & Black W.C (1998). "*Multivariate Data Analysis*", New Jersey: Prentice-Hall International, Inc Hawkins D.I., Best.
- [20] Holness, D.A (2004). "*The Discontinuance of Innovations in Pharmaceutical Labeling*," unpublished, Doctoral Dissertation, Huizenga Graduate School of Business and Entrepreneurship, Nova Southeastern University.
- [21] Horsky, D (1990). "A Diffusion Model Incorporating Product Benefits, Price, Income, and Information", *Marketing Science*, Vol. 9: 342-365
- [22] Hungerford, H.R. and Volk. T.L (1990). "Changing Learner Behavior Through Environmental Education", *Journal of Environmental Education*. Vol. 21(1) pp: 8-22.
- [23] Hunt, S.D (1989). "Reification and Realism in Marketing: In Defense of Reason", *Journal of Macromarketing*, Vol. 9. (Fall): 4-10.
- [24] Kaharanna, E (1993). "Evaluating Criteria and User Acceptance of End User Information Technology: A Study of End User Cognitive and Normative Pre-Adoption Beliefs," *Doctoral Dissertation*, University of Minnesota.
- [25] Kaiser F.G., Hubner G. & Bogner F.X. (2005). "Contrasting the Theory of Planned Behavior with the Value-Belief-Norm Model in Explaining Conservation Behaviour", *Journal of applied social psychology*, Vol. 35(10), pp: 2150-2170.
- [26] Kaiser, F. G., Ranney, M., Hartig, T., and Bowler, P. A. (1999). "Ecological Behavior Environmental Attitude, and Feelings of Responsibility for the Environment", *European Psychologist*, 4(2): 59-74.
- [27] Kaiser, F.G and Scheuthle, H (2003). "Two Challenges to a Moral Extension of The Theory of Planned Behavior: Moral Norms and Just-World Beliefs in Conservation", *Personality and Individual Differences*. Vol. 35, pp: 1033 -1048
- [28] Kim Y, and Choi S.M, (2005). "Antecedents of Green Purchase Behavior: An Examination of Collectivism, Environmental Concern, and PCE", *Advances in Consumer Research*. Vol. 32, pp: 592-599.
- [29] Kollmuss, A. and Agyeman, J. (2002). "Mind the Gap: Why Do People Act Environmentally and What Are The Barriers to Pro-Environmental Behaviour?", *Environmental Education Research*. Vol 8, pp: 239-260.
- [30] Li, L.Y, (1997). "Effect of Collectivist Orientation and Ecological Attitude on Actual Environmental Commitment", *Journal of International Consumer Marketing*. Vol. 9(4), pp: 31–53.
- [31] Lutz, R. J (1989). "Presidential Address Positivism, Naturalism and Pluralism in Consumer Research: Paradigms in Paradise", *Advances in Consumer Research*, Volume 16, pp: 1-8.
- [32] Martin P. and P. Bateson (2007). "*Measuring Behaviour: an Introductory Guide*", Cambridge University Press, Cambridge.
- [33] McKenzie-Mohr, D. and Smith, W (1999). "*Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing*", Gabriola Island, BC: New Society Publishers.
- [34] Mehmetoglu, M, (2010), "Factors Influencing the Willingness to Behave Environmentally Friendly at Home and Holiday Settings", *Scandinavian Journal of Hospitality and Tourism*. Vol. 10(4), pp: 430-447.
- [35] Nguyen, T.N., Lobo, A., Nguyen, H. L., Phan, T.T.H and Cao, T.K (2016). "Determinants Influencing Conservation Behaviour: Perceptions of Vietnamese Consumers", *Journal of Consumer Behaviour*. Vol. 15, pp: 560–570. In Wiley Online Library (Wileyonlinelibrary.Com) Doi: 10.1002/Cb.1594
- [36] Nittala R. (2014). "Green Consumer Behavior of the Educated Segment in India", *Journal of International Consumer Marketing*. Vol. 26(2), pp: 138-152.
- [37] Onwezen M.C, Antonides G, and Bartels J, (2013). "The Norm Activation Model: An Exploration of the Functions of Anticipated Pride and Guilt in Pro-environmental Behaviour", *Journal of Economic Psychology*. Vol. 39, pp: 141-153.
- [38] Philippe, A and Ngobo, P.V. (1999). "Assessment of Consumer Knowledge and Its Consequences: A Multi Component Approach," *Advances in Consumer Research*, Vol. 26: 569-575.
- [39] Rogers, E.M, (2003), "*Diffusion of Innovations*", (5th Edition). New York, NY: Free Press.
- [40] Schiffman, L.G and Kanuk, L.L (2010). "*Consumer Behavior*", 10th Edition, New Jersey: Prentice Hall International, Inc.
- [41] Schultz, P. W., Shriver, C., Tabanico, J. J., and Khazian, A. M. (2004). "Implicit Connections with Nature", *Journal of Environmental Psychology*. Vol. 24(4), pp: 31-42.
- [42] Schwartz SH, Howard JA, (1982), "*Helping and Cooperation: A Self based Motivational Model in Cooperation and Helping Behavior, Theories and Research*", In Jega VJ, Grzelak J (eds). Academic Press: New York; 327-353.
- [43] Schwartz, S. H. (1977). "Normative Influences on Altruism", In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 10, pp. 221-279). San Diego, CA: Academic Press.

ENVIRONMENTAL MANAGEMENT

- [44] Schwartz, S. H. (1992), "Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries", In M. P. T. P. Inanna (Ed.), *Advances in Experimental Social Psychology*. (Vol. 25, pp. 1-65). Orlando, FL: Academic Press.
- [45] Sheth, J.N (1981), "Psychology of Innovation Resistance: The Less Developed Concept in Diffusion Research," *Research in Marketing*, Vol. 4, pp: 273-282.
- [46] Simonson, Z., Camon, R., Dhar, A., Drolet, S. M & Nowlis. (2001). "Consumer research: In search of identity", *Annual review of psychology*, Vol. 52(1), pp: 249-275.
- [47] Steg L., Bolderdijk J.W, Keizer K., & Perlaviciute G. (2014). "An Integrated Framework for Encouraging Pro-Environmental Behaviour: The Role of Values, Situational Factors and Goals". *Journal of Environmental Psychology*. Vol. 38, pp: 104–115.
- [48] Stern P.C. (2000). "Towards a coherent theory of environmentally significant behavior", *Journal of social issues*, 56, 3, 407-424.
- [49] Stern P.C. (2005). "Understanding Individuals' Environmentally Significant Behavior", *ELR News and Analysis*, 35, 10785-10790.
- [50] Stern, P. C., Dietz, T & Kalof, L. (1993). "Value Orientations, Gender, and Environmental Concern", *Environment & Behavior*. 25, 322-348
- [51] Sugandini D., Rahatmawati, I and Anundati R. (2018a), "Environmental Attitude on the Adoption Decision Mangrove Conservation: An Empirical Study on Communities in Special Region of Yogyakarta, Indonesia", *Review of Integrative Business and Economics Research*, Vol. 7(s1), 266-275.
- [52] Sugandini, D., Mujanah, S., Sudiyarto., Indah, P.N., Priyadi, U and Muafi. (2018b). "The effect of integrated marketing communication, environmental responsibility and voluntariness toward electricity saving behavior intention", *International Journal of Civil Engineering and Technology*, Vol. 9, Issue 4, pp. 86-95.
- [53] Tangney J. P., Stuewig J. and Mashek D. J. (2007), "Moral Emotions and Moral Behaviour". *Annual Review of Psychology*. Vol. 58, pp: 345-372.
- [54] Thøgersen J. (2006), "Norms for Environmentally Responsible Behaviour: An Extended Taxonomy", *Journal of Environmental Psychology*. Vol. 26(4): 247-261.
- [55] Thøgersen, J. and Olander, F. (2006), "The Dynamic Interaction of Personal Norms and Environment-friendly Buying Behavior: a Panel Study", *Journal of Applied Social Psychology*, Vol. 36 No. 7, pp: 1758-1780.
- [56] Van der Werff E & Steg L.(2015). "One Model to Predict Them All: Predicting Energy Behaviours with the Norm Activation Model", *Energy Research and Social Science*. 6(0): 8-14.
- [57] Van Liere, K.D. & Dunlap, R.E. (1980). "The Social Bases of Environmental Concern: A Review of Hypotheses, Explanations and Empirical Evidence", *Public Opinion Quarterly*. Vol. 44(2), pp: 181–197.
- [58] Whitmarsh L. (2009). "Behavioural Responses to Climate Change: Asymmetry of Intentions and Impacts", *Journal of Environmental Psychology*. Vol. 29(1), pp: 13–23.
- [59] Winther A.A., Volk, T.L and Hungerford, H.R. (1994). "Issue investigation and citizenship action training: An instructional model for environmental education", In L.V. Bardwell, M.C. Monroe and M.T. Tudor (eds.), *Environmental Problem Solving: Theory, Practice, and Possibilities in Environmental Education*, 22-37. Troy, OH: North American Association for Environmental Education.
- [60] Zimbardo, P & Ebbesen, E.B. (1969), "Influencing Attitudes and Changing Behavior", *Reading, MA: Addison-Wesley*.

FROM ENVIRONMENTAL KNOWLEDGE TO CONSERVATION BEHAVIOUR

ORIGINALITY REPORT

13%

SIMILARITY INDEX

6%

INTERNET SOURCES

8%

PUBLICATIONS

4%

STUDENT PAPERS

PRIMARY SOURCES

1

journals.sagepub.com

Internet Source

4%

2

"Regional Conference on Science, Technology and Social Sciences (RCSTSS 2014)", Springer Science and Business Media LLC, 2016

Publication

3%

3

World Journal of Science, Technology and Sustainable Development, Volume 11, Issue 1 (2014-03-28)

Publication

2%

4

Submitted to Colorado Technical University Online

Student Paper

1%

5

Ihsan Effendi, Miftahuddin Murad, Ahmad Rafiki, Mitra Musika Lubis. "The application of the theory of reasoned action on services of Islamic rural banks in Indonesia", Journal of Islamic Marketing, 2020

Publication

1%

6

Submitted to University of Sussex

Student Paper

1%

7

Submitted to EADA

Student Paper

<1%

Exclude quotes Off

Exclude matches Off

Exclude bibliography Off