“Green product buying intentions among young consumers: extending the application of theory of planned behavior”

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GREEN PRODUCT BUYING INTENTIONS AMONG YOUNG CONSUMERS: EXTENDING THE APPLICATION OF THEORY OF PLANNED BEHAVIOR

Abstract

Green products present as one of the solutions for environment sustainability issue. This research reveals the factors explaining the purchase intention toward green products among young consumers. Young consumers are beginner consumers who are going to play an important role to take a responsibility in preserving the environment. Theory of Planned Behavior (TPB) is selected as the main theoretical framework in this research alongside some other variables (environmental concern, environmental knowledge, and willingness to pay), which are added in the research model to expand TPB application. Three hundred and twenty-six respondents were interviewed through a survey and the data are analyzed using Structural Equation Modeling (SEM).

The findings illustrated that not every explanatory variable influenced the purchase intention toward green products among young consumers. Environmental concern and attitude did not influence the purchase intention toward green products among young consumers.

Keywords sustainability, green product, TPB, purchase intention, young consumer, SEM

JEL Classification M11, M31, O32

INTRODUCTION

Environmental damage and its consequences for human sustainability is one of the important issues which garnered the attention of academicians, government, and world organizations (Haytko & Matulich, 2008). Steg and Vlek (2009) argued that environment quality depends heavily on human's behavioral patterns. Human behavior can gravely damage the Earth and further threaten human's and other species' lives in the future (Lehman & Geller, 2004). Mendleson and Polonsky (1995) stated that the trend concerning environmental awareness have changed consumer behavior and demand toward green products.

The increase of consumer awareness about health and environmental issues has improved the consumption on green products and organic food these last few years (Ertz, Karakas, & Sarigollu, 2016; Smith & Paladino, 2010; Roitner-Schobesberger et al., 2008). The research of Yadav and Pathak (2016a) showed that the intention to use green products is not limited to only adult consumers, but also to the young ones. Wier and Calverley (2002) stated that consumers' interests in green products (especially organic food) have increased tremendously in some industrial counties within this decade. Organic food is one of the most marketable food products, which multiplied remarkably in Europe, North America, Australia, and Japan (Makatouni, 2002).

Tarkiainen and Sundqvist (2005) believed that the sales of organic food as one of green products would increase significantly in the future.

Referring to various researches on green products, there are still few researches focused on the purchase intention toward green products in developing country and among the young consumers (Yadav & Pathak, 2016a; Biswas & Roy, 2015; Khare, 2015). Yadav and Pathak (2016a) explained the purchase intention toward green products based on TPB. This research is constructed by combining the researches of Yadav and Pathak (2016a) and Prakash and Pathak (2017). The research framework is expected to provide a deeper understanding about the purchase intention toward green products among young consumers using TPB and other explanatory variables, namely environmental concern, environmental knowledge, and willingness to pay.

1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

1.1. Theory of Planned Behavior

TPB is the theory used to explain the relationship between various variables and the purchase intention toward green products. TPB itself is the extension of the Theory of Reasoned Action – TRA (Schiffman & Kanuk, 2010, pp. 253-254). According to Assael (2004, p. 226), TRA and TPB models are frequently used to explain the relationship between beliefs, attitude, social influence, purchase intention, and consumer behavior toward certain object in marketing. TPB provides the posit that one's intention to behave in a certain way reflects one's attitude to a certain object, social influence, and perceived behavioral control – PBC (Ajzen, 1991).

PBC helps TPB to improve its explanatory capability on intention and behavior to be better than TRA (Madden et al., 1992). Hassan et al.'s (2016) research findings showed that TPB can also explain consumption behavior on ethical products, more than TRA. Specifically, empirical findings on environmentally-friendly products' consumption also confirmed that TPB's explanation about purchase intention was better than TRA (Paul et al., 2016). However, extending TPB by adding other explanatory variables provides a much better explanatory capacity than TPB and TRA. Based on such consideration, this research is based on TPB which is extended by several explanatory variables, namely environmental concern, environmental knowledge, and willingness to pay.

Based on TPB, one's behavioral intention is not only determined by individual factor and social influence, but also depends on his/her perceived control (PBC) to perform certain behaviors (Ajzen, 1991; Ajzen, 1988, pp. 132-134). In previous researches on green products' purchase intention, three components of TPB were used as predictors (Yadav & Pathak, 2017; Ko & Jin, 2017; Paul et al., 2016).

Referring to Ajzen (1991), attitude toward behavior is one's evaluation about a certain behavior, whether it's favorable or unfavorable. Individual evaluation is the keyword for various definitions of attitude, which are listed by the researchers (Petty et al., 1997). If someone is more favorable toward a certain behavior, then intention to behave in such a way will be higher. Next, subjective norm, as the second component, is defined as social pressure perceived by an individual to behave in a certain way (Ajzen, 1991). If the social support felt by individual is bigger, intention to perform such behavior will be higher. Finally, the third component of TPB is PBC. Ajzen (1991) defined PBC as a perception of an individual on the ease to perform a certain behavior. PBC is related positively to behavioral intention (Ajzen, 2002).

Meta-analysis results from Scalco et al.'s (2017) research shows that TPB is a robust model to explain consumer behavior on green products. Riebl et al. (2015) also stated that TPB is an effective framework to understand consumption behavior among young consumers. Some previous researches, which used TPB to explain consumption behavior for green products among young consumers, also presented various findings. Yadav and Pathak (2016a) showed that three components of TPB positively influenced purchase intention toward green

products. However, on other researches, subjective norm did not have significant influence on purchase intention toward organic food among young consumers (Yadav & Pathak, 2016b). Yazdanpanah and Forouzani (2015) showed that only attitude had positive influence on purchase intention toward organic products among young consumers. Therefore, based on previously discussed TPB frameworks, the following hypotheses are suggested:

H1: Young consumers' attitudes toward the green products positively influence purchase intention.

H2: Subjective norm positively influences purchase intention for green products among young consumers.

H3: Perceived behavioral control positively influences purchase intention for green products among young consumers.

1.2. Extending Theory of Planned Behavior

Even though TPB is a robust and efficient model in explaining behavior, it can also be modified by adding other predictor variables to enhance its capacity (Ajzen, 1991; Conner & Armitage, 1998). The research findings by Paul et al. (2016) showed that adding relevant variables in TPB model can enhance its explanatory capability and improve understanding on purchase intention toward green products. Therefore, environmental concern, environmental knowledge, and willingness to pay are used as the additional explanatory variables in this research model.

1.2.1. Willingness to pay

Green products are generally perceived as more pricey compared to the conventional ones (Smith & Paladino, 2010). Exorbitant price frequently hinders green products' consumption (Aertsens et al., 2011; Lea & Worsley, 2005). Benedetto et al. (2014) argued that price attribute can be a significant consideration for young consumers in consuming green products. However, green products' consumers are not usually over-sensitive with regard to price (Grankvist & Biel, 2001), because they understand the products' benefits, which are considered equal to the premium price (Padel & Foster, 2005). Consumers are demanded to be willing to pay premium price in order to consume green products (Rana & Paul, 2017). The higher their willingness to pay, the bigger their intention to buy the green products (Prakash & Pathak, 2017). The research findings of Yadav and Pathak (2017) proved that the positive influence of willingness to pay on purchase intention was not supported by empirical data. Referring the the discussion on the role of willingness to pay premium for green products, the fourth hypothesis is stated as follows:

H4: Willingness to pay premium positively influences purchase intention toward green products among young consumers.

1.2.2. Environmental concern

Environmental concern refers to one's awareness to be actively and personally involved in providing solution about environment problem and support environmental conservation's efforts (Paul et al., 2016). Yadav and Pathak (2016a) defined environmental concern as the efforts done individually to save the environment. Several previous researches in TPB framework showed that environmental concern positively (directly or indirectly) influenced purchase intention through attitude (Lin & Syrgabayeva, 2016). Pagiaslis and Krontalis (2014) argued that the higher environmental concern, the more positive one's attitude to green products will be. Smith and Paladino (2010) showed that environmental concern positively influences attitude toward organic products; however, it failed to show positive influence of environmental concern on purchase intention. Likewise, Yadav and Pathak (2016b) also showed similar results in terms of organic products' purchase intention. It showed that only environmental concern positively influences attitude and is supported by empirical data. In some previous researches, the positive influence of environmental concern on purchase intention toward green products was not only shown in consumers' attitude, but also in their purchase intentions (Paul et al., 2016; Yadav & Pathak, 2016a). Therefore, the following hypothesis is formulated:

H5: Environmental concern positively influences attitude toward green products among young consumers.

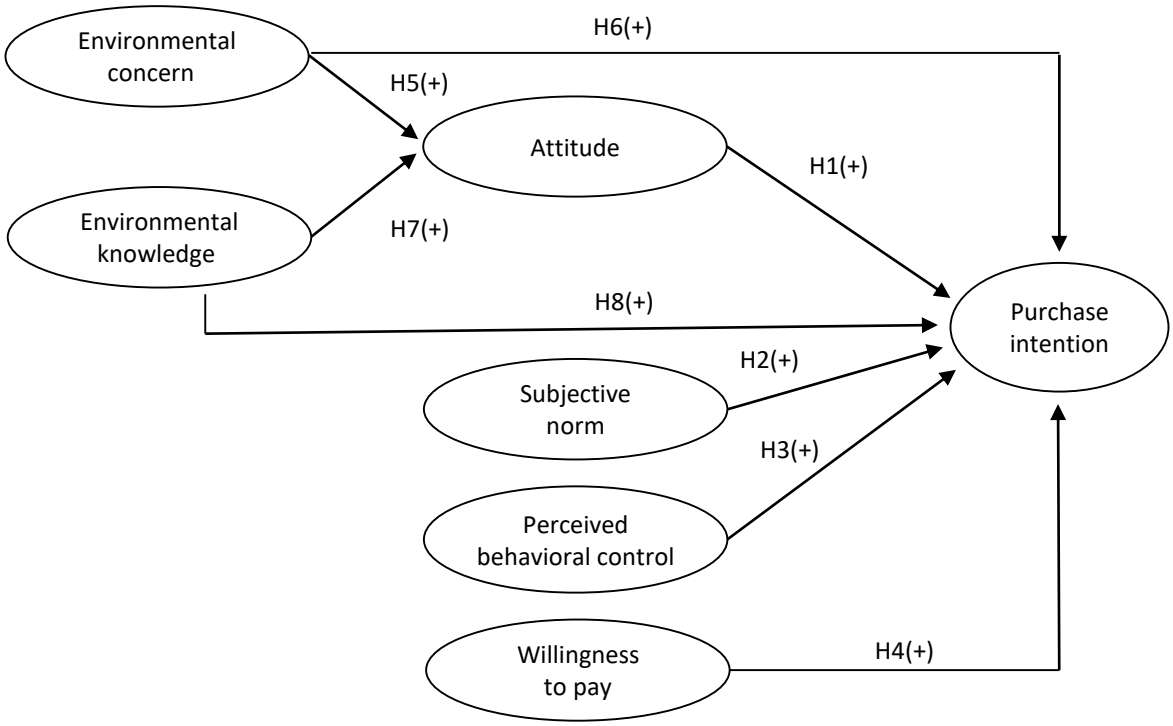


Figure 1. The proposed research framework

H6: Environmental concern positively influences purchase intention toward green products among young consumers.

1.2.3. Environmental knowledge

According to Pagiaslis and Krontalis (2014), environmental knowledge refers to one's knowledge about his/her surroundings as an ecologically interconnected system and tries to get involed in environmental sustainability's development. In a narrow sense, environmental knowledge refers to one's knowledge about environmental issues (Yadav & Pathak, 2016a). Lee (2011) further argues that individual's empirical environmental knowledge can explain buying behavior for green products positively. Mostafa (2007) also illustrates positive influence of environmental knowledge on green products's purchase intention hierarchically; it positively influences attitude and, in turn, also positively influences purchase intention. Ko and Jin (2017) confirms that the higher one's knowledge about his/her surroundings, the higher purchase intention toward green products will be. In the context of environmentally-friendly behavior among young consumers, intention and behavior are also affected by environmental knowledge (Vicente-Molina et al., 2013). Yadav and Pathak (2016a) illustrated that among young consumers, environmental knowledge positively influences attitude toward green products. Therefore, based on the previous research findings, the following hypotheses are stated:

H7: Environmental knowledge positively influences attitude toward green-products among young consumers.

H8: Environmental knowledge positively influences purchase intention toward green products among young consumers.

Referring to the previous discussions, literature review, and hypotheses development, this research model is illustrated as follows:

2. METHODS

The research investigates causal relationship between variables using positivist and deductive approach (Saunders et al., 2009, p. 113; Neuman, 2011, p. 95). This research starts by conducting an observation on social reality as the foundation of empirical phenomena. The researchers

then build the hypotheses based on the existing theories and collect some accurate data to test the hypotheses. The results of hypotheses testing shall bring us to either confirmation or development of theories in the future. The causal relationship testing in this research is explanatory (Cooper & Schindler, 2011, p. 141); it means that the researchers attempt to explain the purchase intention toward green products through some explanatory variables, namely attitude, subjective norm, perceived behavioral control, willingness to pay, environmental concern, and environmental knowledge.

Based on the proposed theoretical method, there are seven variables and each function as independent and dependent variable. Attitude (AT), subjective norm (SN), perceived behavioral control (PBC), willingness to pay (WTP), environmental concern (EC), and environmental knowledge (EK) are the dependent variables, while purchase intention (PI) is the independent variable. The operational definitions of seven variables are defined based on the researches of Yadav and Pathak (2016), Prakash and Pathak (2017), and van Birgelen et al. (2009).

The research data were gathered through primary data directly from the source and purposely found in order to seek the relationship between data and phenomena (Cooper & Schindler, 2011, p. 90). The data were then gathered using purposive sampling technique and three hundred twenty-six bachelor degree students were sucessfully obtained as the respondents. They filled in the self-administered questionnaires and returned them after they completed them according to the instruction.

The data were then analyzed using Structural Equation Modeling (SEM). It is a multivariate technique, which combines factor analysis and multiple regression and enables the researchers to test the causal relationship between latent variables at once (Hair et al., 2010, p. 634). SEM modelling strategy applies the two-steps approach suggested by Anderson and Gerbing (1988); Confirmatory Factor Analysis (CFA); and also hypotheses testing for the structural model between variables. The results and discussions shall be presented in the next section.

3. RESULTS AND DISCUSSIONS

As the first step of SEM analysis, the researchers construct a measurement model (CFA). CFA is conducted to ensure the research data are valid and reliable. Referring to Hair et al. (2010, p. 709), good validity is illustrated by the minimum value (0.5) of standardized factor loading (λ) for each indicator and the minimum value (0.4) of Average Variance Extracted (AVE) (Verhoef et al., 2002). After all indicators are declared as valid, a reliability test is conducted. Good reliability is represented by Cronbach's Alpha (α) and Construct Reliability (CR) minimum 0.6 (Hair et al., 2010, p. 710).

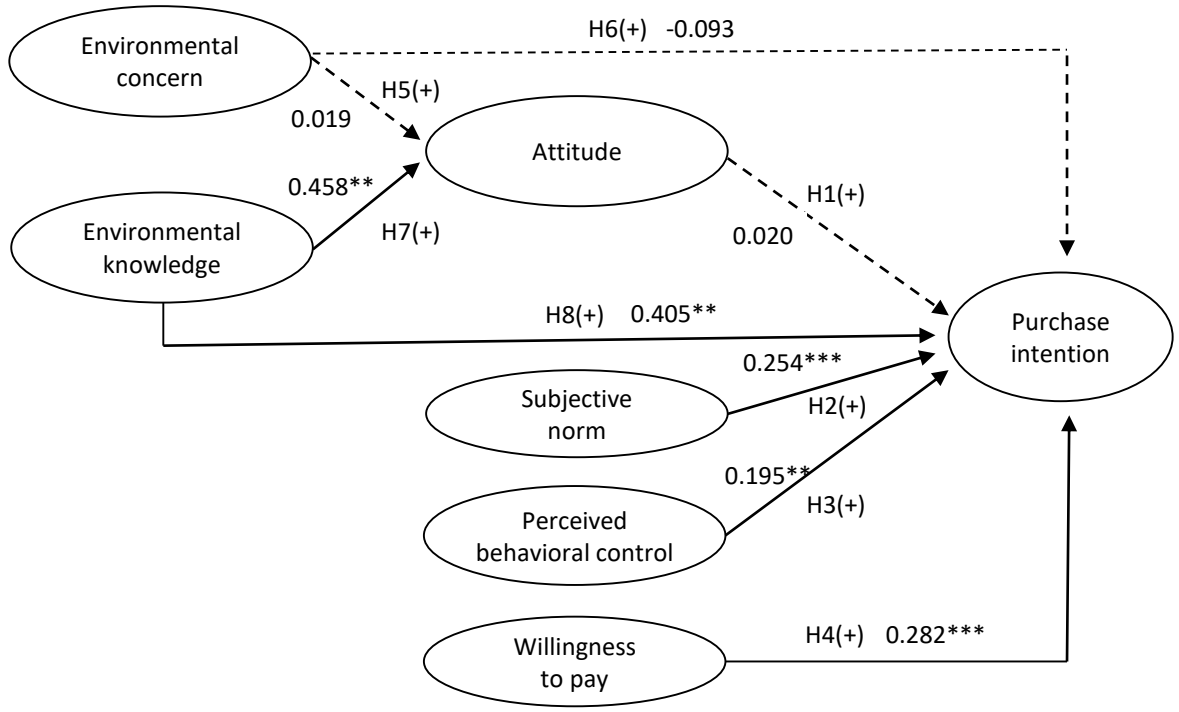
CFA construction on the research data illustrates favorable goodness of fit (GOF) ($\chi^2/df = 2.840$; RMSEA = 0.075; TLI = 0.858; and CFI = 0.869). Hair et al. (2010, p. 672) argued that 3 to 4 GOF index shows a good model. As illustrated by Table 1, CFA analysis results show that the standardized factor loading is recorded at 0.522 for all indicators. It means that all indicators are valid. The validity can also be displayed through AVE values of each variable, which are recorded at more than 0.4 value. After examining the validity, the researchers should also ensure all variables are reliable. The values of Cronbach's Alpha (α) and CR of each variable are above 0.7, which mean that all variables are reliable. Conclusively, the CFA model proves that the research data were obtained from the valid and reliable measurements.

After the research data are proved to be reliable and valid, the next step is to test the research hypotheses. The hypotheses testing is conducted by constructing structural model as the second step of SEM modelling (Anderson & Gerbing, 1988). The structural model analysis is started by examining the goodness of fit. The GOF value shows that the structural model in this research is favorable and can be interpreted further ($\chi^2/df = 2.830$; RMSEA = 0.075; TLI = 0.858; and CFI = 0.869). The results of structural model are illustrated in Figure 2.

The structural model's results in Figure 2 and Table 2 show that not all explanatory variables can influence the purchase intention toward green products among young consumers. Knowledge on

Table 1. CFA – validity and reliability

Construct and indicator	Standardized factor loading (λ)	AVE	Cronbach's α	CR	Remarks
Attitude (AT)					
AT1	0.708	0.560	0.894	0.897	Valid & reliable
AT2	0.522				Valid & reliable
AT3	0.766				Valid & reliable
AT4	0.799				Valid & reliable
AT5	0.783				Valid & reliable
AT6	0.825				Valid & reliable
AT7	0.791				Valid & reliable
Environmental concern (EC)					
EC1	0.785	0.654	0.917	0.919	Valid & reliable
EC2	0.837				Valid & reliable
EC3	0.827				Valid & reliable
EC4	0.874				Valid & reliable
EC5	0.707				Valid & reliable
EC6	0.811				Valid & reliable
Environmental knowledge (EK)					
EK1	0.842	0.537	0.873	0.872	Valid & reliable
EK2	0.835				Valid & reliable
EK3	0.801				Valid & reliable
EK4	0.587				Valid & reliable
EK5	0.717				Valid & reliable
EK6	0.562				Valid & reliable
Subjective norm (SN)					
SN1	0.850	0.585	0.898	0.893	Valid & reliable
SN2	0.881				Valid & reliable
SN3	0.825				Valid & reliable
SN4	0.709				Valid & reliable
SN5	0.628				Valid & reliable
SN6	0.659				Valid & reliable
Perceived behavior control (PBC)					
PBC1	0.749	0.615	0.885	0.889	Valid & reliable
PBC2	0.748				Valid & reliable
PBC3	0.788				Valid & reliable
PBC4	0.850				Valid & reliable
PBC5	0.782				Valid & reliable
Willingness to pay (WTP)					
WTP1	0.863	0.725	0.884	0.887	Valid & reliable
WTP2	0.797				Valid & reliable
WTP3	0.891				Valid & reliable
Purchase intention (PI)					
PI1	0.735	0.599	0.897	0.899	Valid & reliable
PI2	0.841				Valid & reliable
PI3	0.791				Valid & reliable
PI4	0.776				Valid & reliable
PI5	0.665				Valid & reliable
PI6	0.822				Valid & reliable



Note: a Standardized path coefficients provided. Non-significant lines are dashed. ** $p \leq 0.05$, *** $p \leq 0.001$.

Figure 2. Structural equation modeling results[a]

the environment and its sustainability provides the largest influence in explaining the purchase intention toward green products. Young consumers' attention toward the environment and their attitude toward green products do not influence their purchase intention. Therefore, H1, H5, and H6 are not supported. These findings are different from those of Yadav and Pathak (2016a), where all hypotheses were supported. The differences in research findings commonly happen and become an intriguing discussion topic, especially because the research setting is different.

The summary of hypotheses testing in Table 3 showed that there are 3 unsupported hypotheses from 8 tested hypotheses. Consumers' attitudes toward green product did not influence purchase intention, so did environmental concern. Research findings about green products consumption are indeed varied. Stanislawski et al. (2013) proved that the three predictor in TPB such as attitude, subjective norm, and PBC have positive impact on purchase intention toward green products for the consumers in Japan after a major earthquake in 2011. Within a basic

Table 2. Hypotheses testing results on the structural model

Structural relationship between constructs	Standardized estimates	Critical ratio	P-value	Remarks
AT → PI	0.020	0.529	0.597	H1 not supported
SN → PI	0.254	4.336	***	H2 supported
PBC → PI	0.195	2.119	0.034	H3 supported
WTP → PI	0.282	6.048	***	H4 supported
EC → AT	0.019	0.107	0.915	H5 not supported
EC → PI	–0.093	–0.785	0.433	H6 not supported
EK → AT	0.458	2.465	0.014	H7 supported
EK → PI	0.405	2.313	0.021	H8 supported

Note: *** Significant coefficient is recorded at p-value < 0.001.

TPB framework, Yazdanpanah and Forouzani (2015) found that only attitude positively influenced purchase intention toward green products among young consumers. Likewise, the findings of Yadav and Pathak's (2016b) research showed that PBC positively and significantly influenced purchase intention toward organic product; yet, subjective norm was failed to influence it. In this research, purchase intention toward green products is more influenced by subjective norm, PBC, willingness to pay premium, and environmental knowledge.

CONCLUSION

This research intends to reveal the factors that influence the purchase intention of green products among adolescents in the context of developing country environment, Indonesia. Employing the essence of TPB, the result of this research provides more understanding about the factors influencing the purchase intention toward green products among Indonesian young consumers. The analysis on three hundred twenty-six empirical data proves that three out of eight hypotheses were not supported. As illustrated in Figure 2, the young consumers' purchase intention toward green products is positively influenced by their level of knowledge on the environment and its sustainability, their willingness to pay, their subjective norm, and their perceived behavioral control, while the attitude and environmental concern do not influence the purchase intention toward environmentally-friendly products. The findings are fascinating to be discussed further.

The result provides theoretical contribution in explaining the purchase intention of green products, especially among young consumers in developing countries. In addition, the result supports TPB as a robust framework in describing the consumption behavior on green products, as stated by Scalco et al. (2017). The addition of environmental concern, environmental knowledge, and willingness to the variables of TPB framework in this study contributes to a better explanation in understanding the purchasing intention of environmentally-friendly products, supporting the statement of Paul et al. (2016). Furthermore, future research needs to consider other explanatory variables that can theoretically influence the purchasing intention toward green products, for instances, product characteristics (van Birgelen et al., 2009), self-identity in the consumption of environmentally-friendly products (Yazdanpanah & Forouzani, 2015), and the consideration of PBC both internally and externally (Ko & Jin, 2017).

Practically, the result of this study gives a managerial insight to educate young consumers to care and preserve environmental sustainability by consuming green products. Through excellent education and marketing strategies, these young consumers are expected to more concern on their environment. A good level of environmental concern will enhance the positive attitudes on environmentally-friendly products that will ultimately and positively impact on purchase intentions. Future research needs to consider the impact of education in improving the positive attitude toward green products, both done in laboratory and field experimental.

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