Understanding the Consumers' Perspective in Accepting the Ecolabel Product by a Structural Reasoned Model Assessment

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Abstract. The present research investigates the characteristic of consumers' intention in accepting the ecolabel product. A theory of reasoned action (TRA) is used to investigate the consumers' intention, and contains three factors, namely, attitude, subjective norms, and behavior intention. Three statements are designed based upon the consumers' data, each corresponding with a factor. The Indonesia *Ekolabel* is used as a case study. A total of 93 respondents, collected from January to March 2016, were used in conjunction with the factors. A Structural Equation Model (SEM) analysis was used to assess the TRA model, and the SEM showed the entire significant result from the model. The SEM shows that the Consumers' intention is positively influenced by the attitude and subjective norms factors. The TRA model validates the proposed two hypotheses. Theoretical and implications of the findings are discussed and can be used as a good input for producers of ecolabel products as well as for the policy makers of Indonesia in supporting the implementation of environmentally friendly products, which will bring the benefit to sustainability environment.

Keywords: consumers, intention, ecolabel product, Indonesia *Ekolabel*, theory of reasoned action

1. INTRODUCTION

Damage sustained by the environment is a negative situation that many governments worldwide are coping with constantly. To ensure the sustainability of environment, their societies must protect the environment. Numerous pro-environmental activities are performed to reduce the negative impact on environment (Lin et al., 2015; Persada et al., 2015, 2015a, 2015b; Razif and Persada, 2015a, 2015b; Razif et al., 2015; Chin and Lin, 2015, 2016; Persada, 2016; Razif and Persada, 2016), one of which includes the production of environmentally friendly products, otherwise known as, the eco product. The eco product is advantageous to the environment, as it does not contribute to the negative impact in one or more of its life cycle. The eco product has an identification label attached within it to differentiate from similar products and to show that the product has the pro-environmental influence in its process. It is commonly recognized as the ecolabel. Many countries implement the ecolabel in order to support the pro-environmental organizations such as *Blue Angel* in Germany, *Nordic Swan* seal in several European Countries, *Ecomark* in South Korea, *Green Mark* in Taiwan, and *Ekolabel* in Indonesia (US EPA, 1998; Lin et al., 2015; Razif and Persada, 2016). The implementation of ecolabel procedures is commonly regulated independently by local governments. Agencies are usually appointed in each country, and are tasked to either certify the green products and/or regulate emissions. The manufacturing companies can label their product with ecolabel when they have passed the certification process. The certifications will ensure that the product is beneficial to the environment and therefore, the consumer. Although the Government, related agency and manufacturing companies, play a large role within the overall acceptance of the *Ekolabel* product within the market, consumers have the largest impact of the success of the product in the market. If the target market is large and impactful, many companies will be inclined to redesign their product into an eco-friendly product. Thus understanding the consumers' perspective in accepting the ecolabel product will bring much beneficial to market in partial and environment in global.

The present study, therefore, investigates the consumers' perspective in accepting the ecolabel product. The Theory of Reasoned Action (TRA), famous behavioral model assessment, is used within the study, and the *Ekolabel* in Indonesia is used as the case study. The study expects to reveal the consumers' intention to use the ecolabel product and to suggest the recommendation in order to increase the behavior in accepting the ecolabel product. Increasing the intention will lead to the increasing the potential of eco-product usage and it will bring the advantageous to the environment. The format of this paper is presented as follows. Chapter 2 explains the *Ekolabel* literature and the use of TRA model in assessing the citizens' intention. Several formats of hypotheses are proposed in this chapter. Chapter 3 shows the methodology used in this research. Chapter 4 reveals the result of the TRA model assessment. Chapter 5 summarizes the study and describes several limitations as well as the suggestions on future research consideration.

2. LITERATURE REVIEW

2.1 *Ekolabel* in Indonesia

Indonesia adopts the *Ekolabel* program in 2004 (Putri, 2014) and began to implement in large realization on 2006 (Suminto, 2011; Putri, 2014). The main intention of *Ekolabel* program is to protect the environment, to urge the environmental friendly in industry innovation, and to develop the citizens' awareness on environmental friendly products (Suminto, 2011). The benefits of *Ekolabel* product in national scale include the product acting as a [possible] management strategy for environmental protection as well as the product acting as a medium to [or 'as a catalyst for'] increase the overall competitiveness of Indonesia's green products in world market (Naim, 2006; Putri, 2014). Based on Indonesia National Accreditation Committee (*KAN-Komite Akreditasi Nasional*), the *Ekolabel* product types are various types of detergent, textile products, leather products (including shoes), unwrapped printed paper, and dry batteries. However, based on Indonesian National Standard (*SNI-Standar Nasional Indonesia*), the types are wrapper and tissue paper for cleaning (Naim, 2006).

Indonesia is the only nation in which the ecolabel program operates through an accreditation system (Suminto, 2011), in which the published ecolabel certificates or the licenses on using the *Ekolabel* mark are endorsed by an ecolabel certification agency [,] (*LSE-Lembaga Sertifikasi Ekolabel*) that has been [or 'which must be'] accredited by National Accreditation Committee (Suminto, 2011; Ministry of Environment of Indonesia, 2014). The Ministry of Environment of Indonesia published the regulation regarding the inclusion of ecolabel logo in attempt to realize and to accelerate the implementation of environmental protection and management regulation. In more detail, there are two logos in which contain logo type 1 and logo type 2 (Figure 1 and Figure 2). The logo type 1 is based on multiple criteria and considers the analysis result on its lifecycle, which covers the material, production, consumption and product end of life. The logo type 2 is given based upon the manufacturer's self-declaration of its eco-friendly product, along with one or more environmental parameters that are declared. It shows that the producers may have a non-environmentally friendly process in its product's life cycle as well as an environmentally friendly process. A partial environmentally friendly process will be endorsed by logo type 2.

Figure 2. *Ekolabel* Type 1 (full lifecycle)

Figure 1. Ekolabel Type 2 (Self-declared)

2.2 Theory of Reasoned Action

The Theory of Reasoned Action (TRA) is a behavioral assessment model presented by Ajzen and Fishbein (1975) for investigating the individual intention in effort to conduct a particular behavior (Ajzen, 1991). The TRA model contains three factors, namely Attitude (AT), Subjective Norm (SN) and the Behavior Intention. Specifically, AT and SN are the predictors of BI of individual in performing a specific behavior. BI is a person's motivation to exert an effort in conducting a particular behavior (Conner and Armitage, 1998; Lin et al., 2015; Persada et al., 2015a; Chin and Lin, 2016). AT is a level of individual favorable perception to perform a particular behavior (Lin et al., 2014; Nadlifatin et al., 2015a). SN is the individual perception of a scenario originating from a significant other, a group of close friends, or relatives that have a strong influence to conduct a particular behavior (Jani et al., 2015; Nadlifatin et al., 2015b). The present research utilizes the TRA model in order to understand the citizens' BI in accepting the *Ekolabel* product. The overall construct of the TRA model is shown in Figure 3 and the derived hypotheses statements are shown as followed:

H1: Attitude (AT) is positively correlated to Behavior Intention (BI) of citizens in accepting the *Ekolabel* product.

H2: Subjective Norm (SN) is positively correlated to Behavior Intention (BI) of citizens in accepting the *Ekolabel* product.

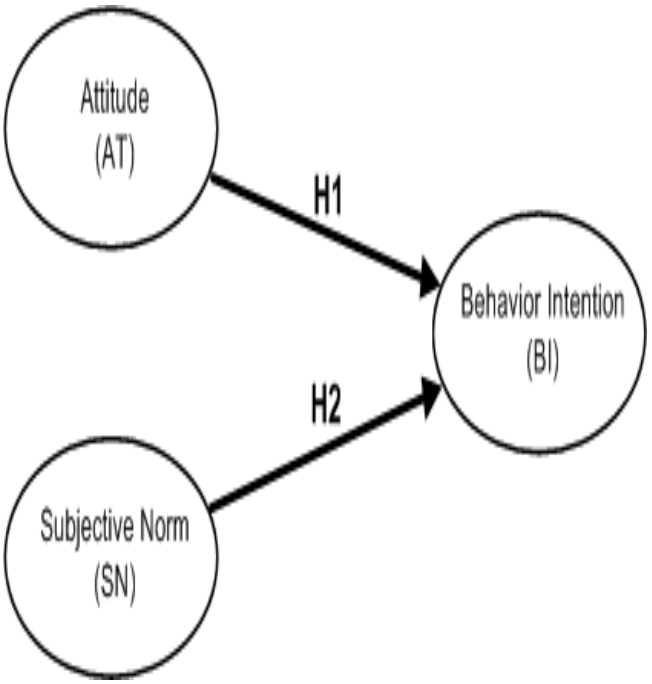

Figure 3. The TRA model used for assessing the citizens' BI

3. METHODOLOGY

The study employs the TRA as the assessment methodology to evaluate the citizens' behavior in accepting the *Ekolabel* product. As a result, three factors, Behavior Intention (BI), Attitude (AT) and Subjective Norm (SN) were included. The data collection was performed in between January to March 2016 using online and offline media-based questionnaires. The target respondents are Indonesian citizens with a minimum age of 17 years old. The age of 17 signifies a citizen who has a full right in law and is of a productive age. The questionnaire contained two sections, of which the first section asks about the representation of factors' questions, and the second section collecting the background information such as age, gender and place of origin. The first section of the questionnaire uses a 5-Likert scale, which contains statements scaling from 1 as "I strongly disagree" to 5 as "I strongly

agree". The description of questionnaire design section 1 is shown in Table 1.

4. ANALYSIS RESULT

A total of 93 respondents' data were collected. The ages of the respondents have ranged between 17 to 54 years old, consisted of 42 numbers male, 51 numbers female and originated from 29 cities. Specifically, 78 respondents are from a western region of Indonesia, 14 respondents are from a central region of Indonesia and 4 respondents are from an eastern region of Indonesia. As a result, the proportions of sample represent the relative ratios of the Indonesian regional population. A descriptive statistical analysis is performed on the mean and standard deviation of data. The statistical result shows that the citizens speak the neutral and agree answers, which the values are ranging from 3.32 to 4.22. While the value of standard deviations is ranging from 0.93 to 1.10, which represents the deviation of answers as shown in Table 2.

A further data fit test is performed by evaluating the data with three parameters. The parameters contain of Cronbach's α, Composite Reliability (CR) and Average Variance Extracted (AVE). The Cronbach's α is a statistical test aimed to check the consistency between the variable. CR, which is similar to Cronbach α, provides a more precise comparison by considering the factor loadings value, where factor loadings are the representation of a factor's dimensionality. AVE is a test to reveal the average value of variance in observed variable where the factor can be described. The minimum values of 0.7 are suggested for α, CR and factor loading, while a minimum value of 0.5 is suggested for AVE value (Cronbach, 1951; Lin et al., 2015; Persada et al., 2015a; Chin and Lin, 2016).

Table 1: Questionnaire design

Questions	Attitude (AT)	Subjective Norm	Behavior Intention
1	For me, the usage of ecolabel products is very beneficial to myself.	Most of the people who are important to me push me use the ecolabel products.	I am willing to use the ecolabel products.
2	For me, the usage of ecolabel products is preferred by myself.	Most of the people who are important to me recommend me to use the ecolabel products.	I plan to use the ecolabel products.
3	For me, the use of ecolabel products is loved.	Most of the people who are significantly important to me introducing me to the ecolabel products.	I will try to use the ecolabel products.

Table 2: Descriptive statistic

Attitude (AT)	Mean	StDev	Subjective Norm (SN)	Mean	StDev	Behavior Intention (BI)	Mean	StDev
AT1	4.22	0.95	SN1	3.43	1.10	BI1	4.10	0.93
AT2	3.95	0.96	SN2	3.32	1.06	BI2	3.93	0.99
AT3	3.78	0.94	SN3	3.52	1.01	BI3	3.98	0.99

Table 3: Data fit test

Questions	Cronbach's α*	Composite Reliability**	Factor Loadings***	Average Variance Extracted****
AT1	0.91	0.91	0.79	0.78
AT2			0.92	
AT3			0.93	
SN1	0.93	0.93	0.88	0.82
SN2			0.93	
SN3			0.90	
BI1	0.94	0.93	0.86	0.80
BI2			0.90	
BI3			0.92	

*: $\alpha \geq 0.7$; **: CR ≥ 0.7; ***: FL ≥ 0.7; ****: AVE ≥ 0.5

As can be seen in Table 3, all of the values pass the minimum threshold for the data fit test, indicating the adequacy of data as the input for further development and analyzation of a Structural Equation Model (SEM). SEM is

an analysis tool used to investigate the correlation among the factors. By using SPSS AMOS, the present study tests the proposed model and the result is shown in Figure 4, where both path correlations have positive values. The positive values also validate proposed hypothesis 1 and proposed hypothesis 2, as shown in Figure 4. The model results have a Comparative Fit Index (CFI) value of 0.94 (CFI $\geq$ 0.90) and a Normed Fit Index value of 0.91 (NFI $\geq$ 0.90), as can be seen in Table 4. As a result, the proposed model is classified as a good model (Lin et al., 2015; Persada et al., 2015; Chin and Lin, 2016).

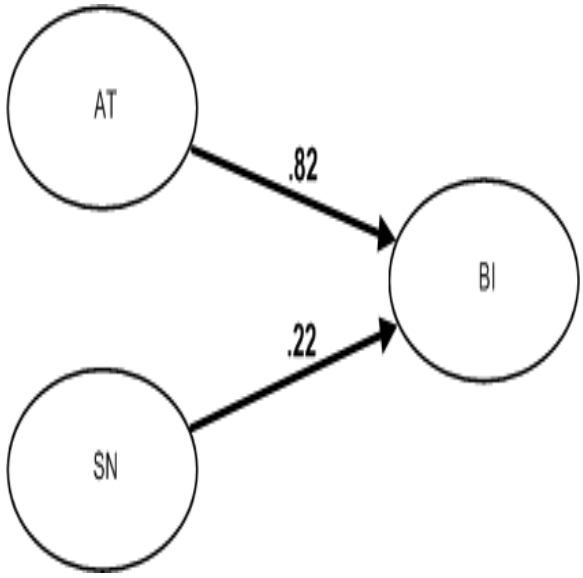

Figure 4. The TRA model result

Based on the model result, hypothesis 1 has a stronger correlation than hypothesis 2. The value indicates the dominant effect of attitude for influencing the individuals' behavior intention in accepting the *Ekolabel* products. Cultural norm indicates that Indonesian people, independently, have a good attitude on *Ekolabel* products, and are less influenced by societal norm. Thus, it is a logical choice for *Ekolabel* producers to sell the green product based upon consumer opinion, rather than social norm. From the policy makers' point of view, the positive attitude of the citizens towards the green products will allow for more emphasis on the consideration of inserting an eco-friendly policy in many aspects citizens' daily activity.

Table 4: The model test

Parameters	Result in this study	Threshold
CFI	0.94	0.90
NFI	0.91	0.90

5. CONCLUSIONS

The present study investigates the consumers' perspective in accepting the *Ekolabel* product. The behavior model assessment, the Theory of Reasoned Action (TRA), is used to assess the Behavior Intention (BI) of Indonesia citizens to use *Ekolabel* product. A series of data collections are performed and 93 respondents are analyzed by the TRA model. The TRA model reveals that Attitude (AT) is dominant over Subjective Norm (SN) in influencing the citizens' BI. The result also shows the suitability of the TRA model in predicting citizens' BI for accepting and using the *Ekolabel* product. As a result, it is suggested for *Ekolabel* producers to sell the green product, as the trade offers good opportunity. From the policy makers' perspective, an approach to insert the green policy in every aspect of citizens' daily activity is also suggested, as it would allow for possible improvements within the environment along with an increased consumption of eco-friendly products.

However, this research contains limitations. The first limitation is the amount of sample data that was collected. Although 70 is considered as the minimum number of individual data sets that should be contained within a Structural Equation Model (SEM) analysis (Sideridis et al., 2014; Jani et al., 2015), collecting up to 200 data sets is suggested, as it will allow for an increase in the accuracy of a simulation. The second limitation is on the number of factors contained within the present study. Adding more factors within the simulation will allow for additional accuracy within the data, and will allow for more data to be collected on the basis of other aspects of logical thinking. Both limitations can be used for future research by adding on more sample and more factors on the developed model.

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