Purchase intention: implementation theory of planned behavior (Study on reusable shopping bags in Solo City, Indonesia)

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Abstract. Plastic shopping bags have been used in everyday life. In fact, plastic bags production from polyethylene will cause greenhouse gas emission when broken down into small pieces, and hence they contribute to anthropogenic climate change sources. The aim of this study is to examine the effects of environmental knowledge, perceived value and price, product appearance, attitude, subjective norm, perceived behavioral control and intention to purchase reusable shopping bags. The purposive sampling method was used in choosing respondents and the criteria were the respondents who already knew the reusable bag product and had the intention to buy it. Overall, 110 respondents were considered fit to meet the predefined criteria and fill out the questionnaire completely. The instrument testing and also hypothesis testing were tested by Structural Equation Model-Partial Least Square (SEM-PLS). With regard to Hypothesis Testing, the level of confidence was 95% while the rule of thumb for t-test was even having more than 1.96. The results found that environmental knowledge has a positive effect toward attitude, perceived price on influenced attitude, perceived value affecting at attitude (t-students’ value: 2.495; 3.325; 3.932; and 10.028 successively). Furthermore, attitude, subjective norm, and perceived behavioral control influenced the intention to buy. (t-students’ value: 3.907; 2.292; 2.932 respectively).

1. Introduction
The research conducted by Jenna [1] explained that Indonesia is one of the 2nd biggest plastic contributing countries in the oceans after China. The main cause of plastic waste accumulation in Indonesia is due to the public’s habit of using plastic bags as a trading facility given by traditional market traders or retail market for free since consumers rely heavily on plastic bags. KLHK (Ministry of Environment and Forestry) states that plastics from 100 stores or members of APRINDO (Association of Indonesian Retail Entrepreneurs) has reached 10.95 million pieces of plastic bag in just one year. This phenomenon puts Indonesia in the condition of “garbage emergency”.

The “garbage emergency” almost covers all cities in Indonesia, including Solo city [2]. In 2012, Solo had a plastic waste composition reaching 12.30% and then in 2013 and 2014 rose to 13.39% of the total waste in landfill (TPA). In 2016, plastic waste has reached 20% of 260 tons of waste managed by the City Sanitation and Gardening Agency.

Retail stores, traditional markets, and street vendors are the biggest plastic waste contributor. An effective solution to reduce plastic bags uses is replacing them with reusable shopping bags [3].
Reusable shopping bags are kind of shopping bag which can be used many times. The use of a reusable shopping bag in line with the 3R (reduce, reuse, and recycle) movement which is as a form of waste management. Reduce is a behavior to minimizes the use of materials that can damage the environment. Reuse is an activity to use more and more in the same function or others function. Recycle is a waste processing method into a new product. Reusable shopping bags are in line with the reduce concept because the materials used in reusable bags are eco-friendly materials.

Reusable shopping bag usage is one of adoption 3R movement. This behavior is predicted by the Theory of Planned Behavior (TPB). TPB stated that every consumers’ decision based on some reasons which can be predicted by attitude, subjective norm, and perceived behavioral control [4]. This research was conducted in order to attract people in Solo to reduce the use of plastic bags and switch to use the reusable shopping bags.

2. Methodology

2.1. Population and sampling method
The population described in this study is people in Surakarta who know the reusable shopping bag. Since this study is a survey research with a non-probability category of population, thus many samples were put into the account. In line the category of population, the purposive sampling method should be applied for sampling, and the criteria were the respondents who already knew the reusable bag product and had the intention to buy it.

2.2. Data analysis
To test the hypotheses that have been formulated, SEM (Structural Equation Modelling) - PLS (Partial Least Square) software was considered the best analysis tools in this matter. This software is fit to measure the relation among research variables when only the data size is small, that is approximately 100 respondents or less than 200 respondents.

3. Instrument development

3.1. Environmental knowledge
Environmental knowledge is how much a person knows about ecological issues that can affect consumers’ perspective [5]. According to that definition, that variable is understood by the level of consumer understanding of environmental issues that affect a person's attitude in responding to the surrounding environmental issues. According to Chan and Lau [6], there are five indicators of environmental knowledge, that is, understand the product which can be used repeatedly (reuse), product which can be recycled (recycle), understand the product which can reduce plastic waste (reduce), understand the meaning of eco-friendly product symbols, and understand the advantages of eco-friendly products.

3.2. Perceived price
Peter and Olson [7] stated that perceived price is about how price information is received and understood entirely by consumers and gives meaning to consumers so that consumers can make comparisons in their minds. The operational definition of perceived price is the consumer's assessment of the price set by the seller whether it is appropriate or not by considering the product attributes. According to Dinawan [8], there are three indicators of perceived price, namely affordability, economically and logically.

3.3. Perceived value
Perceived value is an overall consumer assessment of the usefulness of a product or service based on perceptions of the benefit of the offered product [9]. The operational definition of value perception is a comparison of benefit and cost incurred on the product. Perceived value is measured based on the
product value in accordance with the benefits, the product value with product specifications, and the product quality in accordance with the money sacrificed.

3.4. Product appearance
Schoorman [10] said that product appearance variable is nothing but all things seen from the product that can cause perceptions inevitable the product attributes. The operational definition of product display is consumers’ assessment of the physical impression of the product. Product appearance can be measured aesthetically (color, picture, shape), symbolically (multifunctional, easy to carry, easy to recycle, easy to use).

3.5. Attitude
Attitude is an action that represents what consumers like and dislike [11]. The operational definition of attitude is an evaluation that maked by consumers about their likes or dislikes on some external stimulus. Attitude measured using four items, namely, good, interesting and right decisions.

3.6. Subjective norm
Ajzen [12] showed that subjective norms are a function of individual perceived expectations when one or more people around them (such as relatives, peers) agree on certain behaviors and motivate the individual to obey them. Its operational definition is a form of evaluation of a person to do something based on the considerations from their nearest person. According to Chan [13], subjective norms were measured using four indicators, ie friends references, family references, references to the nearest person, and as a form of contribution.

3.7. Perceived behavioral control
Perceived behavioral control is an individual motivation that is influenced by the perception of how difficult a behavior can be [13]. The operational definition of perceived behavioral control is the level of evaluation of ease or difficulty of a behavior performed. According to Do Valle et al. [14], perceived behavior control is measured using six indicators, that is, having the ability to buy, feeling to the full decision in yourself, feeling to be able to buy in the future, having the resources, the time, the willingness and chance.

3.8. Purchase intention
Purchase intention is a tendency of consumers to purchase products or services [15]. By operational definition, the purchase intention is the consumer’s desire to buy a product. According to Diallo [16], purchase intention is measured by using four indicators, planning to buy, having a budgeted money to buy, considering to buy, and having the tendency to buy.

4. Research model
Figure 1 describes the relationships among variables constructed in this study. The independent’s variable is environmental knowledge, perceived price, perceived value, and product appearance. Those are an antecedent of attitude which together with the subjective norm and perceived behavioral control influence purchase intention.
The research model is constructed from Kumar [17], Ramayah et al. [18], Hasan et al. [19], Chen and Hung [20]. This research model shows that there is relationship between eight variables, such as environmental knowledge influence to attitude (H1), perceived price influence to attitude (H2), perceived value influence to attitude (H3), product appearance influence to attitude (H4), attitude influence to purchase intention (H5), subjective norm effect on purchase intention (H6), and perceived behavioral control influence to purchase intention (H7).

5. Result
Table 1 indicates the statistical output in the examination of the model research which all variables tested comprehensively. SEM PLS is a good tool to complete it.

Table 1. The output of PLS analysis

| Original Sample (O) | Mean Sample (M) | Standard of Deviation (STDEV) | T Statistics | P Values |
|---------------------|-----------------|-------------------------------|--------------|---------|
| AT -> PI            | 0.414           | 0.441                         | 3.907        | 0.000   |
| EK -> AT            | 0.131           | 0.132                         | 2.495        | 0.006   |
| PA -> AT            | 0.530           | 0.532                         | 10.028       | 0.000   |
| PBC -> PI           | 0.285           | 0.262                         | 2.932        | 0.002   |
| PP -> AT            | 0.228           | 0.230                         | 3.235        | 0.001   |
| PV -> AT            | 0.278           | 0.279                         | 3.932        | 0.000   |
| SN -> PI            | 0.149           | 0.138                         | 2.292        | 0.011   |

AT: Attitude; PI: Purchase Intention; EK: Environmental Knowledge; PA: Product Appearance; PBC: Perceived Behavioral Control; PP: Perceived Price; PV: Perceived Value; SN: Subjective Norms
Source: SEM PLS (2017)

The results showed that all independent variable, they are environmental knowledge, product appearance, perceived price, and perceived value influence attitude when T statistics are more than 1.96 at 5% significance level. Based on the value of the original sample, product appearance has the biggest influence on the attitude variable. Furthermore, purchase intention is affected by attitude, perceived behavioral control, and subjective norms. At this point, the attitude variable has the most influence on purchase intention since the score of the original sample is the highest (0.414) among the
subjective norm and perceived behavioral control. The results of this study are in accordance with Ajzen [12], Chan [5][6], and also Chen [20].

6. Conclusion
The intention of consumers to use environmentally friendly products depends on consumers’ attitude. Attitude is an accurate predictor for performing intention. Moreover, the attitude variable is influenced by several independent variables such as environmental knowledge, product appearance, perceived price, and perceived value. To sum all arguments in a nutshell, the purchase of environmentally friendly products is a complex decision for consumers.

To reduce the effect of greenhouse gas emission as a result of plastic waste, government have to reformulate a good regulation in the usage of a shopping bag. That regulation should consider some variables that effect to purchase intention on a reusable shopping bag. In line with this study, consumer behavior is influenced by attitude, subjective norm and perceived behavioral control. Therefore, some treatments have to done to shape the attitude toward adopting reusable shopping bag such as product appearance, perceived value.

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