Green Customer Behavior on Eco-Friendly Products: Innovation Approach

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Abstract

This aim of the study investigates the correlation of perceived innovation, service innovation and green perceived value on eco-friendly products, to improve customer decision of product with moderation of sex and educational background. The study of eco-friendly product has been common in the world. Indonesia is a country which is not very good at circulation of eco-friendly product. The study is conducted with focuses on eco-friendly products; through experiment survey to customer who has bought eco-friendly products in Bandung city. The research found that perceived innovation, service innovation and green perceived value have correlation. However green perceived value as based of purchase decision of customer can only be improved by perceived innovation of eco-friendly products. Furthermore, sex and customer’s educational background can truly support the correlation of perceived innovation with green perceived value of customer. This research finding explained how important perceived innovation supported by the characteristics (sex, educational background) of customers.

Keywords:
Perceived Innovation; Service Innovation; Green Perceived Value.

INTRODUCTION

Eco-friendly products give truly the best service for its customer with the content is free from chemical material which harms to customer’s body (Tung et al., 2012). However, the more expensive price is compared with common price (Suki, 2013), make this product is not a top choice. Besides that, eco-friendly products cannot be easy to get, like organic vegetables in Indonesia is only traded at Supermarket (Syarifuddin & Alamsyah, 2017). Based on those phenomena, it is needed customer’s green perceived value. Because its impact on purchasing of customer’s decision (Chen & Chang, 2012) and customer’s green awareness on eco-friendly products (Syarifuddin & Alamsyah, 2017).

The study of eco-friendly products has been common in the world (Atănăsoaie, 2013), it is marked with the appearance of eco-friendly products and advertisement that use the issue of environmental product (Tiwari et al., 2011). It gives assessment itself for customer who cares to environment, through product selection depends on information of eco-friendly products which is not assessed good by customer (Alamsyah et al., 2017). Referring to eco-friendly products which are more expensive than the conventional products. Based on those phenomena, it seems the importance of customer’s green perceived value relates to environmental product.

Indonesia is a country which is not very good at developing circulation of eco-friendly products, it is marked by the weak of customer’s desire to consume organic products sold by Supermarket (Alamsyah et al., 2017). Meanwhile Indonesia is one of the agraria countries with the tropical climate (Wardhana, 2016), which is suitable for farming the organic products as eco-friendly products.

However, customer’s decision to consume eco-friendly products depend on customer’s green perceived value, so it is needed product’s innovation in order to encourage the improvement of customer’s perceived value.

It is known that through green perceived value, customer’s interest in conducting the selection of better product (Rizwan et al., 2014). It takes place on customer’s mind during they have full of trust for environmental product that is assessed (Chen & Chang, 2012).

Green perceived value is customer’s perception for all attributes which is on eco-friendly products after evaluating with conventional product (Wu & Chen, 2014). Those perceptions grow depend on the previous study for product assessed (Chen & Chang, 2012). It means that green perceived value can be improved truly its value through the value which contained in product like product innovation (Chang & Chen, 2013).

Eco-friendly products is a product that has more value compared with conventional product (Alamsyah et al., 2017), those cases are called perceived innovation that assessed by customer. It is known before that perceived innovation is one of which can influence customer’s perceived value on eco-friendly products (Wu & Chen, 2014). In the review of innovation, it is known that there are three important service factors in the company like product innovation, process innovation, service innovation (Zhu et al., 2016).

Service innovation is one of innovation that becomes the attention to company today. In which if service innovation is controlled properly by company, it can provide competitive advantage of company (Chen et al., 2016). It is found by creation value for company’s product and service is customer (Awa, 2010). Eco-friendly products is closely related to service innovation (Shamah, 2012), where this product gives the best service through product’s packaging like organic product or better service given by company to delivering its product. Reviewing of those cases assumed that service innovation give improvement of customer’s green perceived value and purchase decision to eco-friendly products.

Green perceived value is customer’s perception that is actually known can be improved by perceived innovation (Wu & Chen, 2014)
and customer’s service innovation (Komalade - wi, 2015) for eco-friendly products. The current study aims to at to the existing literature by examining data from retail. This research has novelty in the development on moderating of customer’s characteristic which is sex and customer’s educational level, at least it improves customer’s decision of product. Remembering that it has known, customer’s perspective is very different for environmental product, if it is observed in terms of sex (Syarifuddin & Alamsyah, 2017). This is the same as the cases with customer’s educational level where it wants to know the support on the knowledge of customer’s green perceived value. However, there are still rare studies that test this issue.

**Hypothesis Development**

**Green Perceived Value of Customer**

Basic theory of perceived value is a consumer’s overall evaluation of the net benefit of a product or service based on a consumer’s appraisal (Chen & Chang, 2012). The implied meaning of perceived value relates to customer’s evaluation for product or service that is assessed by customer. Relating to eco-friendly products known as green perceived value (Syarifuddin & Alamsyah, 2017), where in its principle relates to the evaluation of product or service on eco-friendly products. Today, green perceived value is evaluated by company relating to its impact on customer’s intention on product offered by company (Wu & Chen, 2014).

It is not often some efforts done by company to improve its green perceived value. Nowadays, the major reason of customer purchase decision to eco-friendly products like organic vegetables products is because the content of the product is free from chemical material (Radman, 2005). This is meaningful that environmental product has good value which is expected by customer (Joosse & Hracs, 2015). On some loyal customers, it is known that environmental product is suitable with their expectation which is better packaging (Davies et al., 1995). Through green perceived value, customer knows the existence of care from producer on environmental sustainability (Rezai et al., 2011). So it is not often company’s image will improve well assessed by company.

There are five types of perceived value such as functional value, social value, emotional value, epistemic value, and conditional value (Sheth et al., 1991). It is known that these fifth types can influence customer’s behavior relates to its assessment for product. Furthermore, in measuring perceived value above there is dimension, like emotional, social, quality, and monetary (Sweeney & Soutar, 2001). However eco-friendly products is known some measurements, which is good value, expectation, environmental concern, environmental friendly, and environmental benefit (Chen & Chang, 2012).

**Perceived Innovation of Eco-Friendly Products and Green Perceived Value**

Innovation always talks about new product or the product which has novelty inside (Sutapa et al., 2017), both in technology content or other contents that overs another similar products (Wu & Chen, 2014). In environmental friendly product like organic products, there is obviously innovation inside. It relates to nutritional content from organic product which is better from similar product or conventional product (Wirth et al., 2011).

Those innovations are assessed and evaluated by customer and it will be useful information as starting for customer in selecting and making decision to purchase eco-friendly products (Chang, 2011). Perceived innovation is the basic measurement from customer’s point of view towards environmental product (Wu & Chen, 2014). In innovation, it usually relates to three cases, such as product innovation, process innovation and management innovation (Triguero et al., 2013). Environmental friendly product relates to all of innovation explained above. Customer is common to evaluate those innovations from several things like recognize any improvement in its quality, functions, and benefits (Charlet, 2015). Those assessments gives description of innovation finally on environmental product (Tsai et al., 2012). Because all of attributes
which is on environmental product attaches to one image that is assessed by customer, particularly customer who cares to environment.

In the previous study stated that perceived innovation is source of customer’s knowledge, or it is assessment basic of customer on green perceived value (Biswas & Roy, 2015). For environmental product, there are some cases that must be assessed for perceived innovation, such as improvement product, innovation concept, functional different, different of design, saving more, clean effect, creative promotion, attracting promotion and innovation outstanding (Wu & Chen, 2014), then, it might assumed that:

H1: Perceived innovation had positive influence on the improvement of customer’s green perceived value.

H2: Customer’s sex could encourage improvement on the correlation of perceived innovation with customer’s green perceived value.

Perceived Service of Eco-friendly Products and Green Perceived Value

Service innovation is the important factor for company which relates to business competition (Ndubisi & Agarwal, 2014). In which service innovation becomes one of unsure that can improve company value. In product, service innovation is used by company as additional value for product and to improve customer’s decision of products (Chen et al., 2016). Eco-friendly products is one of products that have service innovation, where the selling of its products is evaluated more exclusively by customer. In Indonesia, eco-friendly products like organic product is only sold at Supermarket with specific service which is different place, additional information on the different product and packaging (Alamsyah et al., 2017). It delivers customer’s point of view for environmental product that it has service innovation on product. Service innovation always relates to technology in its delivering, it is same with eco-friendly products like vehicles or home electronic products that use technology (Gnizy et al., 2014).

In other environmental friendly products like organic product, there is actually technology in its creation, such as the creation of green house (Wirth et al., 2011). The most important thing of service innovation is as source from customer’s ideas for the implementation of environmental product. It means that all the implementation of innovation on environmental product becomes the important assessment for customer to make decision.

This results are congruent with the previous study that has shown direct relationship between service innovation and customer’s perceived value (Chen et al., 2016). The implementation of service innovation through product can maintain the old customer in company and it becomes a chance to get new customer (Ndubisi & Agarwal, 2014) also to improve customer’s purchase decision.

The offering used by company through premium product which is eco-friendly products (Biswas & Roy, 2015), at least it is the basic from service innovation. However customer often needs additional information for product (Griffin & Sun, 2013), so it often happens to customer’s interaction with product or producer. The important part of environmental product is delivering system of product stated to customer is always different with conventional product (Chen & Chang, 2012) and technology used (Mayrowani, 2012). In addition, the study also aimed towards examining sex and educational background acts as a moderators variable in evaluating service innovation on environmental product (Komaladewi, 2015), then it might be assumed that:

H3: Perceived service had positive influence on the improvement of customer’s green perceived value.

H4: Customer’s background study could encourage improvement on the correlation of perceived innovation with customer’s green perceived value.

Regarding to the study of research variable, then it was stated research paradigm as the aim of study (Figure 1).
METHOD

This was experimental study focused on green perceived value, perceived innovation and service innovation for eco-friendly products in Indonesia, to find some theories or models to improve purchase decision of eco-friendly products. The research object was customer who had bought environmental product. By using the sample products assessed is the organic vegetable products in Selfservice Retail. With the examples of products assessed are organic vegetable products in Retail. So it was conducted experimental research to 100 customers Retail in Bandung City.

This quantitative research used questionnaire with the determining answer. The same scale was adapted for use in Indonesia. Questionnaires were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). To determine whether the theoretical relationships specified at the conceptualization phase are supported by the data, regression analysis was applied by SPSS.

There were some indicators used to measure green perceived value (i.e. good value, expectation, environmental concern, environmental friendly, and environmental benefit) (Chen & Chang, 2012). There were several indicators to measure perceived innovation (i.e. improvement product, innovation concept, functional different, different of design, saving more, clean effect, creative promotion, attracting promotion and innovation outstanding) (Wu & Chen, 2014). There were several indicators to measure service innovation (i.e. service offering, customer interaction, new delivery sistem, technology) (Komaladewi, 2015).

In this study, there was other variable like customer’s characteristic which was divided into two factors; sex and educational background. Those variables became moderating variable that could improve or decrease the correlation among the major research variable. Moderating analysis by distributing the questionare based on sex and educational background, then it is reprocessed through regression analysis. So, it found the difference of correlation values based on responden characteristics. This is in line with the previous research recommendation, that the respondent characteristics are able to be a moderate which strengthen or weaken the customer behavior on eco-friendly products. (Syarifuddin & Alamsyah, 2017).

RESULT AND DISCUSSION

Results

Table 1. Demographics Result

<table>
<thead>
<tr>
<th>Information</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>52%</td>
</tr>
<tr>
<td>Male</td>
<td>48%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>&lt; 20</td>
<td>1%</td>
</tr>
<tr>
<td>20-30</td>
<td>20%</td>
</tr>
<tr>
<td>31-40</td>
<td>24%</td>
</tr>
<tr>
<td>&gt; 40</td>
<td>55%</td>
</tr>
<tr>
<td>Family Member</td>
<td></td>
</tr>
<tr>
<td>&lt; 2</td>
<td>5%</td>
</tr>
<tr>
<td>2-5</td>
<td>75%</td>
</tr>
<tr>
<td>&gt; 5</td>
<td>20%</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td>58%</td>
</tr>
<tr>
<td>Bachelor/Master</td>
<td>42%</td>
</tr>
<tr>
<td>Income</td>
<td></td>
</tr>
<tr>
<td>2-6 million</td>
<td>55%</td>
</tr>
<tr>
<td>6-10 million</td>
<td>31%</td>
</tr>
<tr>
<td>&gt; 10 million</td>
<td>4%</td>
</tr>
</tbody>
</table>

Detail of respondent profiles show in the Table 1. Research result is started with delivering the profile of research respondent; there are 100 respondents which have valid for data questionnaire. From those data, it is known that most of customers live in urban which are 69%
and the rest of them live in sub-urban which are 31%. It is assumed, more customer interact is customer who is in urban, because some of eco-friendly products like organic product is sold at Retail which is in urban. So it is precise to do the research about eco-friendly products in urban area.

Based on result of Table 2, it is known that the value of all research instruments is Pearson Correlation above 0.300 and the value of Cronbach’s Alpha is above 0.700. It is stated that all of research instruments on research variable is valid and reliable for next it is processed and analyzed. Then, it is analyzed for research model through factor analysis to know the value of Loading Factors of latent variables with manifest variable. Based on the result of Table 2, it is known that the value of Loading Factors per high of each variable is good value for green perceived value, creative promotion for perceived innovation and customer interaction for service innovation of eco-friendly products.

The next research result is the result of research hypothesis test. Hypothesis test is conducted and it uses t-test for the correlation between variable with Hayes’s theory to test moderating variable for customer’s characteristic variable (Sex, Educational Background). Here, the result of hypothesis test that is presented detail on Table 3.

Table 2. Validity and Reliability Test of Research Instrument

<table>
<thead>
<tr>
<th>Variables</th>
<th>Instruments</th>
<th>Pearson Correlation</th>
<th>Cronbach’s Alpha</th>
<th>Load. Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Perceived Value</td>
<td>Good Value</td>
<td>.751</td>
<td>.794</td>
<td>.753</td>
</tr>
<tr>
<td></td>
<td>Expectation</td>
<td>.564</td>
<td></td>
<td>.406</td>
</tr>
<tr>
<td></td>
<td>Env. Concern</td>
<td>.714</td>
<td></td>
<td>.785</td>
</tr>
<tr>
<td></td>
<td>Env. Friendly</td>
<td>.743</td>
<td></td>
<td>.805</td>
</tr>
<tr>
<td></td>
<td>Env. Benefit</td>
<td>.698</td>
<td></td>
<td>.703</td>
</tr>
<tr>
<td>Perceived Innovation</td>
<td>Improvement Product</td>
<td>.359</td>
<td>.701</td>
<td>.518</td>
</tr>
<tr>
<td></td>
<td>Innovation Concept</td>
<td>.323</td>
<td></td>
<td>.562</td>
</tr>
<tr>
<td></td>
<td>Functional Different</td>
<td>.397</td>
<td></td>
<td>.558</td>
</tr>
<tr>
<td></td>
<td>Different of Design</td>
<td>.402</td>
<td></td>
<td>.676</td>
</tr>
<tr>
<td></td>
<td>Saving More</td>
<td>.368</td>
<td></td>
<td>.538</td>
</tr>
<tr>
<td></td>
<td>Clean Effect</td>
<td>.400</td>
<td></td>
<td>.456</td>
</tr>
<tr>
<td></td>
<td>Creative Promotion</td>
<td>.314</td>
<td></td>
<td>.772</td>
</tr>
<tr>
<td></td>
<td>Attracting Promotion</td>
<td>.349</td>
<td></td>
<td>.676</td>
</tr>
<tr>
<td></td>
<td>Innovation Outstanding</td>
<td>.548</td>
<td></td>
<td>.692</td>
</tr>
<tr>
<td>Service Innovation</td>
<td>Service Offering</td>
<td>.679</td>
<td>.714</td>
<td>.709</td>
</tr>
<tr>
<td></td>
<td>Customer Interaction</td>
<td>.775</td>
<td></td>
<td>.816</td>
</tr>
<tr>
<td></td>
<td>New Delivery Sistem</td>
<td>.681</td>
<td></td>
<td>.737</td>
</tr>
<tr>
<td></td>
<td>Technology</td>
<td>.557</td>
<td></td>
<td>.395</td>
</tr>
</tbody>
</table>

Table 3. Research Hypothesis Test

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Path Coefficients</th>
<th>t-value</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Innovation → Green Perceived Value</td>
<td>H1</td>
<td>.398</td>
<td>6.414</td>
</tr>
<tr>
<td>Service Innovation → Green Perceived Value</td>
<td>H3</td>
<td>-.260</td>
<td>-.280</td>
</tr>
</tbody>
</table>
From the hypothesis test result, it is known that perceived innovation has significant correlation (Support) with green perceived value. It is different with service innovation, where the result is not significant (Unsupport). Furthermore, it is conducted moderating test through Hayes’s Theory, in which data is processed again with classifying of questionnaire data which depends on sex (female, male) and educational background (bachelor/ master, high school). Moderating test is only conducted on the correlation of perceived innovation with green perceived value; remember the previous data processing result is stated to be significant. Based on Figure 2, it is known that the correlation value increased. It is shown by the moderate line that the value is above real line, which is on male and bachelor/ master educational background. It means that sex and educational background are able to improve customer behavior in green perceived value.

The result is sex (male) has the improvement of correlation value among variable. The same case also happened on education level, where the correlation value of perceived innovation on green perceived value is above the previous value (real). Based on those results can be stated that hypothesis 2 and hypothesis 4 supported.

Discussion
The Influence of Perceived Innovation on Green Perceived Value

Customer’s purchase decision is based on green perceived value which adopted by customer to eco-friendly products and it depends on product evaluation. Perceived innovation based on research result is stated that it has the correlation with green perceived value. The value is quite big which is about 0.398, it means that green perceived value can be improved through implementation on perceived innovation of environmental product. This finding is in line with previous research (Wu & Chen, 2014), that the value adopted by customer through green perceived value is sourced from customer’s point of view for product innovation.

In perceived innovation that is assessed by customer consists of improvement product, innovation concept, functional different, different of design, saving more, clean effect, creative promotion, attracting promotion and innovation outstanding. From all of measurements used, there is the dimension of the most impact on the formation of perceived innovation product, such as creative promotion, attracting promotion, innovation outstanding and different of design. It means that producer needs to see detail in running marketing strategy that has the major goal is improving perceived innovation from environmental product. Because not all of perceived innovation indicators can shape perceived innovation well.

Finding on this research completes previous research, with the conclusion that perceived innovation from eco-friendly products can truly influence the improvement of green perceived value customer, and at least it can provide customer’s decision of eco-friendly products. Because all of values contained on environmental product, is innovation owned by product and it has impression for customer (Hau & Kang, 2016).

Customer feels that the creative marketing effort through brochure and attractive information on environmental product become the important assessment (Rahmi et al., 2017). Besides that, the point of view about innovation that also becomes customer’s attention is on benefit differences (Singh et al., 2014) and packaging for environmental product compared with conventional product (Paul, 2012). It assumed some cases that emerges customer in evalu-
ting to be good for eco-friendly products, so customer’s green perceived value is improved. Green perceived value is based on customer’s decision of eco-friendly products, that shows the importance of green perceived value from customer and to explore by marketing manager.

The Correlation of Service Innovation and Green Perceived Value

Service innovation is stated by company on eco-friendly products which it is useful to improve product value (Chen et al., 2016). However, service innovation that is given unable to improve green perceived value. Reviewing from research result is known that service has a very weak correlation (-0.26) on green perceived value. It marks that everything is tried from service innovation; it will not be able to improve customer’s green perceived value. This finding is surely not in line with previous research (Komaladewi, 2015), it is realized that actually the previous study does not focus on eco-friendly products. It means that the correlation of service innovation with customer’s perceived value can not be used for eco-friendly products.

In service innovation is known as product delivery system (Gunasekaran et al., 2015), those systems has actually a good assessment in customer’s opinion. Actually, it is assumed to be very important in service innovation of eco-friendly products (Komaladewi, 2015). In real, those systems have not run well recently for environmental like organic product in Indonesia. So it causes customer’s point of view for service innovation run for eco-friendly products that has not been optimum. Besides that on organic product, the offering of service given by producer is still limited (Hafeez et al., 2012).

It seems from the promotion limit for eco-friendly products (Lian et al., 2016). Today, customer expects the existence of detail information from eco-friendly products, it is actually still limited the information dissemination of environmental product which is conducted by Indonesia’s government (Syarifuddin & Alamsyah, 2017). It is different from halal product with its halal label (Putri et al., 2017).

So customer’s point of view for service innovation of eco-friendly products does not created properly. As a result, service innovation of eco-friendly products does not impact well on the improvement of customer’s green perceived value. Naturally, all information of eco-friendly products with service innovation will not effect to customer purchase decision on eco-friendly products.

The most important of customer’s view to evaluate eco-friendly products or green perceived value is sourced truly from the characteristic of product which is product’s impact to environment (Carlet, 2015), the attention of product and marketing on environment (Hosseinzadeh & Branch, 2013), and benefit obtained by customer for organic product content (Ellison et al., 2016). It means that producer in evaluating service innovation must be in line with three main things that are noticed by customer for eco-friendly products which is environmental friendly, environmental concern and environmental benefit or good value of the product.

Moderation of Sex and Customer’s Educational Background

Customer’s decision of eco-friendly products has been clear to have different characteristic, particularly in the relation of eco-friendly products that is connected to customer’s sex and educational background (Syarifuddin & Alamsyah, 2017). Those customer’s characteristics actually becomes the main supporter in customer behavior which is on eco-friendly products. Testing is done only on the correlation of perceived value with green perceived value and it depends on research result, it found that the point of view of male and female have the differentiation for eco-friendly products. It is known that male is more concern towards eco-friendly products than female. It is caused by female is more considerate financing that must be spent to consume eco-friendly products, compared with male (Handayani & Prayogo, 2017).

Remember that eco-friendly products is identical to have more expensive price (Hagh-
Based on this finding, it can be concluded that sex can moderate well the correlation of perceived innovation with green perceived value. As well as, with educational background, actually the higher of customer’s education who consumes eco-friendly products, so the better view of eco-friendly products can customer get. It is known from the the correlation value between perceived value on green perceived value, continue to increase on the highest of educational level.

This research finding support the previous researches (Ndubisi & Agarwal, 2014; Wu & Chen, 2014; Komaladewi, 2015), but it has novelty where it is only perceived innovation that can support the improvement of customer’s green perceived value than service innovation. Besides that, customer’s characteristic has also a quite big impact actually in influencing customer behavior. Furthermore, producer of eco-friendly products in Indonesia, it is good to consider perceived innovation depends on customer’s characteristic. So marketing strategy runs is in line with the aims that will be achieved, which is the improvement of customer’s green perceived value and decision customer to eco-friendly products.

CONCLUSION AND RECOMMENDATION

According to the purpose of research, it is found that customer’s green perceived value is as based on customer’s decision for eco-friendly products, it can be improved by perceived innovation product. While service innovation product stated by eco-friendly products has not currently felt to be important the benefit in improving green perceived value. Besides that, customer’s characteristic through sex and educational background has good support on the correlation of perceived innovation with green perceived value.

This study has both theoretical and practical implications. One of the practical implications is that focuses on eco-friendly products, where it needs to give priority to several things in green perceived value like environmental friendly, environmental concern, and environmental benefit or good value. Those customers’ points of view have impact on the creation of customer’s green perceived value, and also it can improve purchase decision on eco-friendly products.

Furthermore, producer also needs to consider the attributes of environmental product and also its marketings or it is known green brand attribute and green advertising, because actually it has impact on the improvement of customer purchase decision. However, those cases need to be tested again in further research to get the generalization.

REFERENCES


