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# THE PERCEPTION AND CONSUMER BEHAVIOR OF ORGANIC PRODUCTS IN SUPPORTING A SUSTAINABLE ENVIRONMENT

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**Abstract**

Environmental problems must be addressed properly, one of which is by producing and consuming organic products. Although it is currently impossible to meet the demand of organic products in the world, it can at least reduce environmental problems. Consumer knowledge of a sustainable environment is seen from the knowledge of green products, Green Finance, Green Living, Green Transportation, Green Producers, Green Consumers, Green Communication , Green Institutions and Green Creativity. The purpose of this study is to see the perception and consumer behavior of organic products in supporting a sustainable environment. The study was conducted in June – October 2022 with 183 respondents using simple random sampling. The consumer criteria are consumers who often buy from these three organic commodities in daily shopping patterns and the data is analyzed with Multidimensioan Scalling (MDS). The results showed that consumer perceptions of sustainable environmental trends say that organic vegetables and chickens have similarities, then rice and organic vegetables. While rice and organic chicken have no similarities. Consumer behavior that is oriented towards being environmentally friendly is revealed that consumers in buying organic rice consider many factors including green products, green producers, green communication, and green institutions. As for organic chicken factor green consumer, and green creativity. Furthermore, for organic vegetables, only green finance. Thus, consumers in buying organic rice consider many factors compared to buying organic chicken and vegetables. This indicates that knowledge of sustainable environment still needs to be conveyed to the community considering that rice is a staple food in Indonesia and also other countries in the world.

Keywords: Cluster, perception, behavior, organic products and Multidimension Scaling (MDS)

## 1. Introduction

Environmental problems must be addressed properly, one of which is by producing and consuming organic products. Although it is currently impossible to meet the demand of organic products in the world, it can at least reduce environmental problems. In connection with this alternative farming systems have been developed including 'Organic', 'biological', 'biodynamic', 'ecological',

and 'low input' (Reganold et al, 1990). The purpose of an ecological farming system or organic farming is to pay attention to the importance of the ecological basics of the existing agricultural system. Organic farming has been proposed as an important means of achieving these goals (Seufert, 2012). Organic farming can solve all of the above problems and organic farming is considered one of the best options to protect/ maintain soil health, and get a lot of important things in agriculture today (Surekha, *et al*, 2013; Christopher and Radha. 2022).

The development of organic farming is also supported by a healthy lifestyle or back to nature. Some people who expect healthy food, free of pesticide residues and an-organic chemical content, and also encouraged by farmers who have limitations in the procurement of agro-inputs. Another benefit of organic farming is significant improvements in soil physique, fertility and biological properties in some organic farming experiments (Pathak et al., 1992; Carpenter Boggs et al., 2000). It also allows ecosystems to better adapt to the impacts of climate change, and increases the potential for carbon sequestration from the soil (Bhooshan et al., 2011)

## 2. Theory

At present not only top level who consume organic product, but also middle and low levels. Trend of this society becomes opportunity of producer to produce many kinds of organic products. Likewise in developed country demand for organic products has increased (Padel and Foster, 2005; Gifford and Bernerd, 2006). The quantity of organic products should be considered critically by society whether or not those products are truly organic and processed organically. Several studies revealed that reason of consumer to purchase organic product food is because of health reason and concern on environment (Wandel and Bugge, 1997; Diekmann and Preisendorfer, 2003; Kriwy and Rebecca, 2012). Besides, not only health reason but also even more on other motive such as food safety and ethical concern (Magnusson et al., 2003; Michaelidou, 2008), however according to Tarkiainen and Sundqvist (2005) health factor was not the reason of consumers to buy organic products.

Organic label including eco-label which provides information that its product is environmental friendly, and when it is not true then producer responsible to this wrong information (Cason and Gangadharan, 2002; Inabez and Groulleau, 2008; Kirchhoff, 2000). Organic label is needed because consumer cannot see its process therefore not sure whether it will destroy environment or not, and indicate that organic product is superior as compared to non organic product (Crespi and Marette, 2005). In addition, organic label is for reducing assymetric information between producers and consumers about organic products (Hamilton and Zimmerman, 2006; Mason, 2006; Ibanez and Groulleau, 2008). Organic label should give benefit either to consumers or producers (Magnusson, *et al*, 2001). For consumers organic label must have uniqueness, i.e. from “taste better” and “longer shelf-life” and for producers it can increase sales. However, young generation still associates eco-labels product as low quality products and often

unwilling to purchase those products. If consumer did not feel “private benefit” consumer will not buy premium price for eco-label product (Gallastegui, 2002; Peattie and Crane, 2005).

The results of Deliana’s research (2011) revealed that organic vegetable products include carrots, chicken, and tomatoes. The reason respondents prefer organic vegetables over non-organic vegetables is because organic vegetables are cleaner (57.5%), easy to get (22.50%) and cheap (20%). While consumers choose vegetables non-organic because it is cheap (46.66%), clean (28.33%), and easy to get (25%). Consumers expect that there will be a clear marker on the packaging that distinguishes between organic and non-organic vegetables that currently not all organic vegetable packaging meets the established standards. The tricky producers intentionally perforate vegetables to be looked like being bitten by insects that can make consumers think that the vegetables are organic which in fact they are produced in non-organic way. With the passage of time rice and organic chicken began to be produced and in demand by the public (Shamsi *et al* , 2022 ; and Zeynalova & Natavan , 2022)

Sustainable environment is seen from economics sustainability, social sustainability, and environmental sustainability (Khan, 1995; Grum, 2020). In distributing products from producers to consumers in relation to the sustainable environment is Green Marketing. The concept of green marketing involves all stakeholders involved in distributing the product. Green Marketing is social marketing or sustainability marketing is marketing in distributing goods or services and related to the environment (Groening et al, 2017; Deliana et al, 2019 ; Osiako, et al, 2022). Variables in green marketing include green product, Green Finance, Green Living, Green Transportation, Green Producers, Green Consumers, Green Communication, Green Institutions and Green Creativity (Deliana, 2017).

## 3. Method

### 3.1 Material and Methods

Research was conducted from June to August 2022 consumers organic in Bandung. The data were primary and secondary, while the sampling technique for consumer was simple random sampling. The respondents have consumed an organic product at least once. In the market, organic product range from carrots, spinac , tomato (vegetable), rice and chicken. As a result, this study focused on that organic product involving 183 respondents secara random. Consumer criteria are consumers who often buy vegetables, chicken or organic rice in their daily shopping patterns. Data were collected through observation, quesionnaires and literature review. The research aims to determine determine the perceptions and behavior of organic consumers in supporting a sustainable environment.

### 3.2 Data Analysis

The research data used a Likert scale of 1 to 5 with very poor (1), poor (2), fair (3), good (4), and very good (5). The questionnaire result data is used "SPSS for windows version 16.0".

Meanwhile, the analysis data used begins with validity tests, reliability tests, and multidimensional scaling analysis.

### 3.3 Multidimensional Scaling Analysis

This study uses a multidimensional scaling analysis method with similarity data. MDS similarity data includes non-attribute data types, which can be analyze nonmetric data (nominal and ordinal) or metric data (interval and ratio). So that the results of the questionnaire obtained can be directly processed using computer software, namely SPSS version 16.0. Previously, validity and reliability tests were carried out as material for consideration first. MDS relates to creating a graph (map) to describe the position of an object with other objects, based on the similarity of these objects.

The troubleshooting steps in the MDS analysis are as follows:

a. Identifying the object of research to be evaluated, namely looking at the perception and behavior of organic consumers in supporting a sustainable environment.

b. Preparing a questionnaire design that wants to know the closeness between pairs of subjects observed based on the perceptions and behavior of organic consumers.

c. Distributing research questionnaires to the sample.

d. Obtain data input in the form of perception and behavior data.

e. Programming the observation data from the questionnaire results into Microsoft Excel.

f. Conducting data adequacy tests (Validity Test and Reliability Test).

g. Conducting Multidimensional Scaling analysis test. With the SPSS version 16.0 program, a perception map with a number of dimensions is obtained

h. Specifies the name of each dimension (labeling). In this case, it is the researcher's judgment that determines the naming. Giving a name to a dimension is done by assessing the similarity of the various object attributes that are determined or come from respondents after seeing the perceptual map. By studying these positions, the strengths and weaknesses of each object can be analyzed.

### 3.4 Model Fit Size

Borg and Patrick (2013) state that the suitability of the Multidimensional Scaling Model is assessed by the STRESS (Standardized Residual Sum of Square) size. STRESS is a measure of incompatibility (a lack of fit measure) between the output and the actual situation using the STRESS formula as follows:

$$\text{STRESS} = \sqrt{\frac{\sum_{j<k}^{n}\left(d_{jk} - \hat{d}_{jk}\right)^2}{\sum_{j<k}^{n} d_{jk}^2}} \qquad (2.9)$$

where: d_jk = distance between to j and object to k

dˆ_jk = disparities between object to j and object to k

Disparities are the minimum error values between distances and similarity values. From the distance between objects (djk) obtained from the initial configuration, disparities are obtained as a result of estimating the value of object similarity on the perception map. The STRESS value can determine whether the model is feasible with the STRESS suitability value in several of the criteria presented in Table 1.

Table 1. STRESS Suitability Value

| STRESS (S) | Criteria |
|---|---|
| S ≥ 20% | Bad |
| 10% ≤ S < 20% | Good |
| 2,5% ≤ S < 5 | Excellent |
| S < 2,5 % | Perfect |

Table 1. shows that the smaller the STRESS value means that the monotonous relationship that is formed between dissimilarities and disparities is getting better (obtaining compatibility) so that the perception map that is formed is more perfect

## 4. Research Results and Discussion

### 4.1 Characteristics of Consumers

Table 2. Perceptions of Respondents about the Green Marketing

| Description | f | % | Total % |
|---|---|---|---|
| **Environmentally Friendly**<br>Do not Understand about enviromentally friendly<br>Understand about environmentally friendly | <br>64<br>119 | <br>34.97<br>65.03 | 100 |
| **Generation**<br>Boby Boomer (57 - 77 years)<br>Generation X (42 - 57 years)<br>Generation Y (27- 45 years) | <br>47<br>121<br>15 | <br>25.68<br>66.13<br>8.19 | 100 |
| **Information**<br>Media social<br>TV<br>Newspaper | <br>89<br>61<br>33 | <br>48.63<br>33.33<br>18.04 | 100 |
| **Organic Products that are often purchased**<br>Rice<br>Chicken<br>Vegetables | <br>49<br>56<br>78 | <br>26.77<br>30.60<br>42.63 | 100 |
| **Education**<br>SMA (Senior High School)<br>S1 (Bachelor's degree)<br>S2 (Master's degree | <br>42<br>138<br>3 | <br>22.95<br>75.41<br>1.64 | 100 |
| **Gender**<br>Male<br>Female | <br>98<br>85 | <br>53.55<br>46.45 | 100 |
| **Occupation**<br>Entrepreneur<br>Civil servant (PNS)<br>Others | <br>95<br>27<br>61 | <br>51.92<br>14.75<br>33.33 | 100 |

From Table 2. It was revealed that consumers generally understand the concept of a sustainable environment, namely regarding dietary habit, green products, Green Finance, Green Living, Green Transportation, Green Producers, Green Consumers, Green Communication, Green Institutions, and Green Creativity. Consumers in general generation X and of course this generation are looking for information related to organic products from social media (48.63%), have higher education, in general women and their jobs are entrepreneurship. The most frequently purchased organic products in a week are organic vegetables, organic chicken, and organic rice.

This can be understood because vegetables and chicken become side dishes that must always be there, while rice can be replaced with other ingredients such as cereals, bread, potatoes, tubers, and others. Frequency of buying organic vegetables almost every day, organic chicken and organic rice as needed between 2-3 times in a week.

### 4.2 Consumer Perceptions of Organic Products

Perception Data

In this study using a direct approach, with the following steps:

a. Count the number of pairs of each object. Where $a$ is the number of commodity types, namely chicken, vegetables, and rice ($a$ = 3) and $b$ is the number of combinations (b = 2), so that:

$$C_{a,b} = \frac{a!}{b!\,(a-b)!} = \frac{3!}{2!\,(3-2)!} = 3$$

There were 3 pairs of commodity types as follows:

1. Chicken-Vegetables
2. Chicken-Rice
3. Vegetables-Rice

b. Create a questionnaire for perception data using a ranking scale, where the number 1 is for the most similar pairs to 5 for the most dissimilar/very different pair.

After obtaining the ranking results from all respondents, a total score was carried out for each pair of smartphone brands, then the total score was sorted with the smallest value given a score of 1 (rank 1 - the most similar) to the highest value given a score of 3 (rank 3 – the most different). The final results are entered in Table 2.

Table 2. Data on Respondents' Perceptions of Commodity Types Pairs of Organic Products

| Types of Commodities | Chicken | Vegetable | Rice |
|---|---|---|---|
| Chicken | 0 | 1 | 3 |
| Vegetable | 1 | 0 | 2 |
| Rice | 3 | 2 | 0 |

Table 2 shows that ranking 0 is for pairs of organic product commodity types against itself, while ranking 1 is for pairs of organic product commodity types that are the most similar. Based on the results of the respondent's perception, the 1st rank is occupied by Vegetables-Chicken, which means that this pair of organic product commodities is perceived by the respondent as the most similar pair, maybe the reason is because they are both included in side dishes. Then continued with rank 2 namely Rice-Vegetables, then rank 3 is occupied by Chicken-Rice which means that this organic product commodity pair is perceived by respondents as the most dissimilar/very different pair, maybe the reason is because chicken is a livestock commodity while rice is agricultural commodity.

### 4.3 Consumer Behavior of Organic Products in Supporting a Sustainable Environment

2. Consumer Behavior Data of Organic Products that Support a Sustainable Environment

The consumer behavior data questionnaire in this study is to assess the level of quality of consumer behavior that buys one type of organic product commodity, namely chicken, vegetables or rice on attributes that support a sustainable environment. The steps for obtaining data are as follows:

a. Create a questionnaire for preference data using a Likert scale where respondents are asked to answer their level of behavior towards each attribute that supports a sustainable environment. These attributes are Diet, Green Products, Green Finance, Green Living, Green Transportation, Green Producers, Green Consumers, Green Communication, Green Institution and Green Creativity. Each of these attributes is measured from several indicators of 4-10 indicators.
b. The Likert scale used is as follows:

Table 3. Likert Scale of Consumer Behavior of Organic Products towards Sustainable Environmental Attributes

| Scale | Information |
|---|---|
| 1 | Very poor |
| 2 | Poor |
| 3 | Fair |
| 4 | Good |
| 5 | Very Good |

c. After obtaining data on consumer behavior of organic products for all indicators of all sustainable environmental attributes from all respondents, attribute validity and reliability tests were carried out. Based on the results of the validity and reliability tests in the Appendix, it was found that all indicators for each sustainable environmental attribute were valid and reliable.

d. Then the attribute score is obtained by averaging the score from the indicators that are already valid and reliable. It is then recategorized into 2 categories based on their sustainability level (Table 5). A score of 1 for attributes whose average score is 3.4 and below that is categorized as unsustainable and a Score of 2 for attributes whose average score is above 3.4 that is categorized as continuous.

Table 4. Rescoring Preferences of Organic Product Respondents on Sustainable Environmental Attributes

| Average value of attributes | *Rescoring* | Information |
|---|---|---|
| 1 – 3,400 | 1 | Unsustainable |
| 3,401 – 5 | 2 | Sustainable |

e. Furthermore, the proportion of consumers who fall into the sustainable category is calculated in each group of organic product commodities purchased by consumers, namely chicken, vegetables, and rice.

Table 4 shows that for commodity organic products of chickens on dietary attributes, the score is 68. This means that 68% of chicken commodity consumers have a sustainable diet (score 2). Thus, there are 100 – 68 = 32 percent of chicken commodity consumers who have an unsustainable diet (score 2). Then for organic vegetable commodity products on the dietary attribute, the score is 78. This means that 78% of vegetable commodity consumers have a sustainable diet (score 2). Thus, there are 100 – 78 = 22 percent of chicken commodity consumers who have an unsustainable diet (score 1), and so on. The smallest value is 23%, namely the proportion of chicken commodity consumers who have sustainable green finance, while the highest value is 86%, namely the proportion of vegetable commodity consumers who have sustainable green living (Tandon *et al*, 2022)

Table 5. Data on Consumer Behavior of Organic Products on Sustainable Environmental Attributes

| No. | Sustainable Environment Attributes | Consumer Proportion of Organic Products (%) | | |
|---|---|---|---|---|
| | | Chicken | Vegetable | Rice |
| 1 | Dietary habit | 68 | 78 | 53 |
| 2 | Green Products | 77 | 81 | 80 |
| 3 | *Green Finance* | 23 | 49 | 35 |
| 4 | *Green Living* | 70 | 86 | 63 |
| 5 | Green Transportation | 67 | 73 | 59 |
| 6 | Green Producers | 47 | 61 | 69 |
| 7 | Green Consumer | 84 | 78 | 67 |
| 8 | *Green Communication* | 67 | 79 | 73 |
| 9 | *Green Institution* | 53 | 62 | 55 |
| 10 | *Green Creativity* | 84 | 84 | 76 |

**Step 2: Choosing the MDS Procedure**

The type of procedure used is non-metric because the database used is nominal in scale as shown in Table 4. The closest (smallest) pair of objects is assumed to be the main competitor and the farthest (largest) pair is assumed to be the farthest competitor.

**Step 3: Determining the Multiplicity of Dimensions**

It can be decided that the data obtained using MDS analysis with a two-dimensional model, because based on the results of MDS analysis on consumer behavior data for organic products on sustainable environmental attributes, it is found that the MDS model using 2 dimensions will be able to explain 100% of the variation in the data.

Table 6. Number of Dimensions and *Variance Proportion Explained*

| *Dimension* | *Singular Value* | *Inertia* | *Proportion Explained* | *Cumulative Proportion* |
|---|---|---|---|---|
| 1 | 0,07785 | 0,00606 | 0,636 | 0,636 |
| 2 | 0,05891 | 0,00347 | 0,364 | 1,000 |
| Total | | 0,00953 | 1,000 | 1,000 |

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**Step 4: Provide Dimension Labels and Configuration Interpretation**

Based on the results of MDS analysis, consumer behavior data on organic products with sustainable environmental attributes using SPSS software obtained a two-dimensional perceptual map as follows :

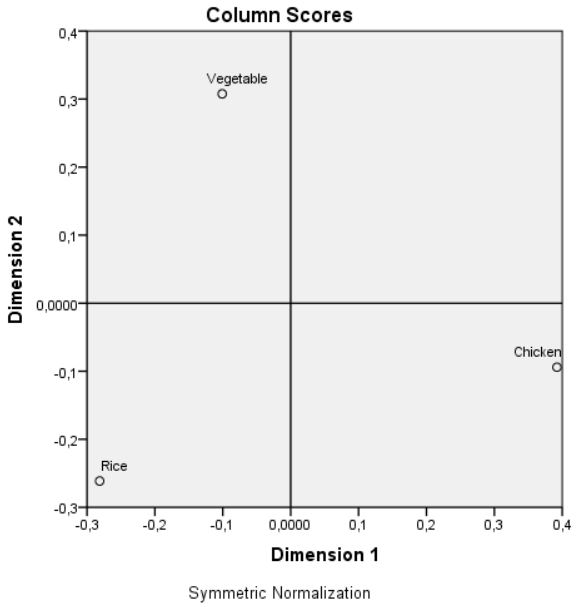


Figure 1. Two-Dimensional Perceptual Map of Consumer Behavior Data Based on Types of Organic Commodities Purchased

Figure 1 shows the distribution of the three types of organic product commodities purchased by consumers. It can be seen a comparison of the proximity of each consumer of organic product commodities visually. Visually, it can be interpreted that there is not a single type of organic product commodity consumer who is in the same quadrant, the three commodity consumers each occupy a different quadrant. This means that there are differences in consumer behavior for the three types of organic product commodities (Kowalska Aleksandra *et al*, 2021) . Table 8 is the coordinates of each type of organic product commodity based on the perceptual map behavior data:

Table 7. Consumer Coordinates of Organic Product Commodities Based on Perceptual Map

| No. | Types of Organic Product Commodities | Coordinates | |
|---|---|---|---|
| | | X (dimension 1) | Y (dimension 2) |
| 1 | Chicken | 0,392 | -0,094 |
| 2 | Vegetable | -0,101 | 0,308 |
| 3 | Rice | -0,281 | -0,261 |

Based on Table 4. it can be seen that organic chicken products have coordinates (0.392; -0.094), vegetables have coordinates (-0.101;0.308), and rice have coordinates (-0.281; -0.261).

**Calculation of the Two-Dimensional Euclid Perceptual Map Distance for Behavioral Data**

The calculation of the Euclid Distance for commodity types of organic products is as follows:

1. Chicken against vegetables:

$$ed = \sqrt{(x_i - x_m)^2 + (y_i - y_m)^2}$$

$$ed = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$ed = \sqrt{(-0{,}101 - 0{,}392)^2 + (0{,}308 - (-0{,}094))^2}$$

$$ed = \sqrt{(-0{,}493)^2 + (0{,}402)^2}$$

$$ed = \sqrt{0{,}243 + 0{,}162}$$

$$ed = \sqrt{0{,}405}$$

$$ed = 0{,}636$$

By using the same calculation method as the formula above, the results for calculating the Euclid distance are as follows:

Table 8. Euclid Distance for Each Consumer of Organic Product Commodities.

| Types of Commodities | Chicken | Vegetable | Rice |
|---|---|---|---|
| Chicken | 0 | 0,636 | 0,693 |
| Vegetable | 0,636 | 0 | 0,597 |
| Rice | 0,693 | 0,597 | 0 |

After calculating the Euclid distance, the ranking of the proximity of commodity types of organic products is carried out.

Table 9. Ranking Proximity to Chicken Commodity Consumers Based on Euclid Distance

| Types of Commodities | Euclid distance | Ranking of Proximity to Chicken Commodities |
|---|---|---|
| Vegetable | 0,636 | 1 |
| Rice | 0,693 | 2 |

In Table 9, the ranking of the proximity of chicken commodity consumers based on Euclid distance obtained the result that the first closest distance of chicken commodities is to vegetable commodity consumers with a value of 0.636, the second closest distance is to rice commodity consumers with a value of 0.693.

Table 10. Ranking Proximity to Vegetable Commodity Consumers Based on Euclid Distance

| Types of Commodities | Euclid distance | Ranking of Proximity to Chicken Commodities |
|---|---|---|
| Chicken | 0,636 | 2 |
| Rice | 0,597 | 1 |

In Table 10, the ranking of the proximity of vegetable commodity consumers based on the Euclid distance obtained the result that the first closest distance of vegetable commodities is to consumers of rice commodities with a value of 0.597, the second closest distance is to consumers of chicken commodities with a value of 0.636.

Table 11. Ranking Proximity to Rice Commodity Consumers Based on Euclid Distance

| Types of Commodities | Euclid distance | Ranking of Proximity to Chicken Commodities |
|---|---|---|
| Chicken | 0,693 | 2 |
| Rice | 0,597 | 1 |

In Table 11, the ranking of the proximity of rice commodity consumers based on the Euclid distance obtained results that the first closest distance of consumers of rice commodities is to

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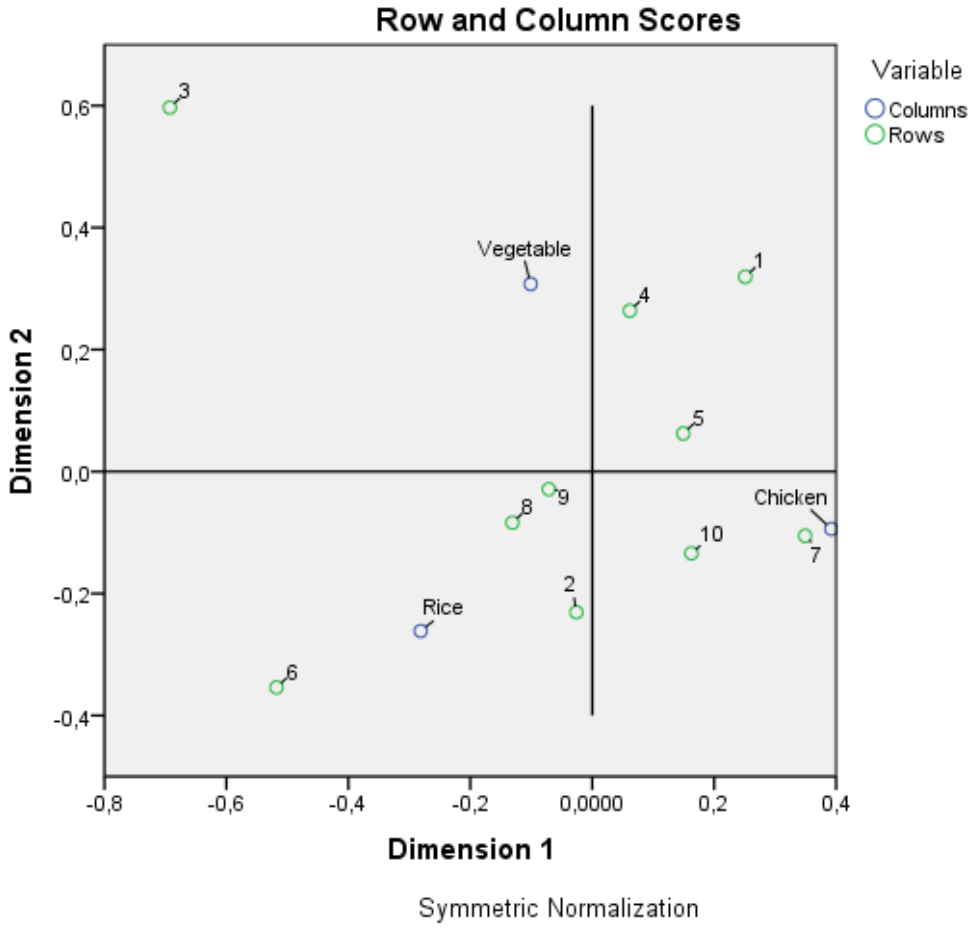
consumers of vegetable commodities with a value of 0.597, the second closest distance is to consumers of chicken commodities with a value of 0.693.

**Results of MDS Analysis of Consumer Behavior Data on Organic Products against Sustainable Environmental Attributes**

Consumer behavior of organic products towards sustainable environmental attributes can be seen in the perceptual map configuration. Perceptual map obtained in Figure 2. In Figure 2, it can be seen that a two-dimensional perceptual map consists of four quadrants. The perceptual map results above obtained quadrant division are as follows:

1. In quadrant I there is no single type of organic product commodity and there are only 3 attributes, namely attributes 1, 4 and 5 or diet, green living and green transportation. This means that there is no single type of organic product commodity that has advantages in the attributes of diet, green living and green transportation.
2. In quadrant II we see that there are consumers of organic vegetable products that have advantages in attribute 3 or green finance. This means that they have the best sustainability in terms of green finance compared to consumers of organic chicken and rice products. In addition, even though there are different quadrants, we see that consumers of vegetable organic products have proximity to attributes 1 and 4 or dietary habit and green living in quadrant I, meaning that consumers of vegetable organic products are the most potential to be able to improve their sustainability in dietary habit and green living compared to consumers organic products of chicken and rice.
3. In quadrant III we see that there are consumers of organic rice products that have advantages in attributes 2, 6, 8 and 9 or green products, green producers, green communication and green institutions. This means that they have the best sustainability in terms of green products, green producers, green communication and green institutions compared to consumers of organic chicken and vegetable products.
4. In quadrant IV we see that there are consumers of organic chicken products who have advantages in attributes 7 and 10 or consumers of green and green creativity. This means that they have the best sustainability in terms of green consumers and green creativity compared to consumers of organic vegetable and rice products. In addition, although there are different quadrants, we see that consumers of chicken organic products have an affinity with attribute 5 or green transportation in quadrant I, meaning that consumers of chicken organic products are the most potential to be able to improve their sustainability in terms of green transportation compared to consumers of organic vegetable and rice products




Note 1= Dietary habit, 2 = Green Products, 3= Green Finance, *4*= Green Living, *5* = Green Transportation, 6 = Green Producers, 7 = Green Consumer, 8 = Green Communication, 9 = Green Institution, 10 = Green Creativity

Figure 2. Perceptual Map of Consumer Behavior of Organic Products to Environmental Attributes of a Sustainable Dietary Habit

**Evaluation of the Validity and Reliability of MDS**

The validity and reliability in MDS analysis are used to test the validity and reliability of the perceptual maps on MDS. The value used is the STRESS value obtained from each perceptual map with the help of R studio and SPSS software. The STRESS value obtained are as follows:

Table 12. STRESS value from MDS analysis

| Data | STRESS |
|---|---|
| Perception | 0,000 |
| Behavior | 0,000 |

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From the MDS analysis, the STRESS value was obtained which showed the goodness of fit criteria which was quite good. It could be concluded that the MDS analysis had the right reliability and validity in obtaining clusters of perceptions and consumer behavior of organic products in supporting a sustainable environment.

1. The pair of organic vegetable-chicken products is perceived by the respondent as the most similar pair, followed by the rice-vegetable pair, and then the rice-chicken pair, which is perceived by the respondent as the most dissimilar/very different pair.

2. Consumers of organic vegetable products that are environmentally oriented sustainability knowledge about green finance is better than consumers of organic products of chicken and rice. Consumers of organic vegetable products are also the most potential to be able to improve their sustainability in dietary habit and green living compared to consumers of organic chicken and rice products.

5. Consumers of organic rice products that are environmentally oriented sustainability knowledge about green products, green producers, green communication and green institutions is better than consumers of organic products of chicken and vegetables.

6. Consumers of organic products of environmentally oriented chicken sustainability knowledge about green consumers and green creativity is better than consumers of organic products of vegetables and rice. Consumers of organic chicken products are also the most potential to be able to improve their sustainability in terms of green transportation compared to consumers of organic vegetable and rice products.

The novelty of this paper is consumer decision making in purchasing organic products which use the concepts of the sustainable green marketing such as Green Finance, Green Living, Green Transportation, Green Producers, Green Consumers, Green Communication. Green Institution, Green Creativity which has never been studied by other researchers.

## 5. Conclusion

The perception of organic products as side dishes does not differ in their function in supporting a sustainable environment, but if side dishes and rice are not similar in function in supporting a sustainable environment.The consumer knowledge of green finance and green living influences consumers to prefer vegetables compared to others, while the consumer knowledge of implementing green products, green producers, green communication and green institutions influences consumers to prefer rice compared to others. In this case, vegetables are foods that must be on the daily menu, they are cheap and nutritious. Rice is a staple food, consumers should pay attention to dietary habits, taste and quality

Different consumer knowledge of a sustainable environment will change consumer behavior in buying organic products. With little knowledge about the sustainable environment, consumers will buy organic products as side dishes, but need more knowledge about the green environment when buying organic staple foods.. This indicates that knowledge of sustainable environment still needs to be conveyed to the community considering that rice is a staple food in Indonesia and also other countries in the world

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**Appendix**

Test Results of the Validity and Reliability of Sustainable Environment Attributes

| Atrribute | Indicator | The Value of Pearson Correlation | The Value of Cronbach Alpha | Description |
|---|---|---|---|---|
| Dietary habit | Indicator 1 | 0,731 | 0,655 | Valid and Reliable |
| | Indicator 2 | 0,725 | | |
| | Indicator 3 | 0,656 | | |
| | Indicator 4 | 0,717 | | |
| Green Product | Indicator 1 | 0,625 | 0,600 | Valid and Reliable |
| | Indicator 2 | 0,687 | | |
| | Indicator 3 | 0,634 | | |
| | Indicator 4 | 0,541 | | |
| | Indicator 5 | 0,536 | | |
| Green Finance | Indicator 1 | 0,890 | 0,971 | Valid and Reliable |
| | Indicator 2 | 0,837 | | |
| | Indicator 3 | 0,902 | | |
| | Indicator 4 | 0,802 | | |
| | Indicator 5 | 0,865 | | |
| Green Living | Indicator 1 | 0,663 | 0,801 | Valid and Reliable |
| | Indicator 2 | 0,689 | | |
| | Indicator 3 | 0,702 | | |
| | Indicator 4 | 0,735 | | |
| | Indicator 5 | 0,750 | | |
| Green Transportation | Indicator 1 | 0,743 | 0,742 | Valid and Reliable |
| | Indicator 2 | 0,596 | | |
| | Indicator 3 | 0,771 | | |
| | Indicator 4 | 0,733 | | |
| | Indicator 5 | 0,506 | | |
| Green Producer | Indicator 1 | 0,745 | 0,888 | Valid and Reliable |
| | Indicator 2 | 0,805 | | |
| | Indicator 3 | 0,788 | | |
| | Indicator 4 | 0,769 | | |
| | Indicator 5 | 0,762 | | |
| Green Consumer | Indicator 1 | 0,844 | 0,922 | Valid and Reliable |
| | Indicator 2 | 0,769 | | |
| | Indicator 3 | 0,842 | | |
| | Indicator 4 | 0,853 | | |
| | Indicator 5 | 0,714 | | |

| Atrribute | Indicator | The Value of Pearson Correlation | The Value of Cronbach Alpha | Description |
|---|---|---|---|---|
| Green Communication | Indicator 1 | 0,598 | 0,732 | Valid and Reliable |
| | Indicator 2 | 0,705 | | |
| | Indicator 3 | 0,741 | | |
| | Indicator 4 | 0,567 | | |
| | Indicator 5 | 0,715 | | |
| Green Institution | Indicator 1 | 0,804 | 0,896 | Valid and Reliable |
| | Indicator 2 | 0,812 | | |
| | Indicator 3 | 0,794 | | |
| | Indicator 4 | 0,697 | | |
| | Indicator 5 | 0,802 | | |
| Green Creativity | Indicator 1 | 0,680 | 0,942 | Valid and Reliablel |
| | Indicator 2 | 0,689 | | |
| | Indicator 3 | 0,733 | | |
| | Indicator 4 | 0,350 | | |
| | Indicator 5 | 0,657 | | |
| | Indicator 6 | 0,445 | | |
| | Indicator 7 | 0,603 | | |
| | Indicator 8 | 0,544 | | |
| | Indicator 9 | 0,355 | | |
| | Indicator 10 | 0,786 | | |

Note: * If Valid the value of Pearson correlation < 0,145 (r-table); Reliable if the value of Cronbach Alpha ≥ 0,6