Testing the Antecedents of Attitudes towards Organic Food (An Extended of the Theory of Planned Behaviour)

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Abstract
The primary purpose of this study was to examine purchase intention and behavior of organic food based on the theory of planned behavior. People do not always use their intentions to behave even though intentions are powerful. The novelty of this study is to add two antecedent variables of attitude, namely knowledge about organic food and attention to health. The sampling technique used was purposive sampling. This research was conducted through two studies. Study I was conducted to test the extent of TPB, and Study II tested buying behavior. The sample size is 187 respondents for Study I and 153 respondents for Study II. Data were analyzed using Structural Equation Modeling (SEM) for Study I and Logistic Regression for Study II. The study results show that the overall hypothesis proposed is supported and that intention has a substantial impact on buying behavior of organic food. Based on this research, producers or marketers can develop better marketing strategy models to increase consumer understanding of the benefits of organic food consumption.

Pengujian Antesenden Sikap terhadap Makanan Organik (Perluasan Teori Perilaku Terencana)

Abstrak

JEL Classification: M31, D12, Q13

INTRODUCTION

The consumption and purchase of organic food have become very popular following attention and knowledge of the importance of health (Dorce et al., 2021). In line with that, Sultan et al. (2019) explained that consumer interest in organic food has increased in recent years. Organic food is healthier and environmentally friendly (Singh & Verma, 2017). Organic food is food grown by farmers who use only renewable energy resources to produce this food while maintaining soil and water conservation to maintain health and environmental quality for future generations (Sobhanifard, 2018). Organic food usually has a higher price, reflecting the quality. In addition, organic food comes from a process that is freeicides, fertilizers, and chemicals which is certainly a healthy food (Scalco et al., 2017).

The current phenomenon in Indonesia is that people’s interest in organic foods is increasing. Furthermore, the demand for organic products has increased. The increase in demand for organic products in Indonesia is due to the growing awareness of maintaining health through a healthy lifestyle to increase endurance (Shukri, 2022). Due to this increasing demand, it is important to investigate consumer behavior toward organic food.

One of the theories that can be used as a basis for research on organic food buying behavior is the Theory of Planned Behavior. The theory of Planned Behavior is a development or expansion of the previous theory, namely the Theory of Reasoned Action which is made based on the limitations of the original model regarding a person’s behavior (Ajzen, 1991). The main principle in the Theory of Planned Behavior (TPB) is a person’s intention to perform a behavior. TPB links behavioral intentions with attitudes, subjective norms, and perceived behavioral control. Previous studies that studied the TPB’s expansion and extension have become very useful in predicting various behaviors (Dorce et al., 2021). TPB has been widely used as a framework for understanding the purchase and consumption of organic food (Scalco et al., 2017). Several studies investigate the purchase of organic food from the perspective of the TPB (Liobikiene et al., 2016; Singh & Verma, 2017; Saleki et al., 2019; Sultan et al., 2019; Fleseriu et al., 2020; Dorce et al., 2021).

Most of the research conducted on organic rice is carried out in developed countries that are far more aware of green products. In this study, the research setting was taken in Indonesia, which is a developing country that has a low level of concern for organic food compared to developed countries. Many problems are encountered in developing countries like Indonesia: the lack of well-established organic rice brands, lack of concern for the environment and health, as well as knowledge about the importance of organic rice so that the growth of organic rice in Indonesia is not as fast as in countries that have proceeded. Several studies have successfully explored the relationship between attitudes and intentions, but those that explain the gap between intentions and future behavior are still scarce (Hassan et al., 2016). Several studies have found that planning has a positive impact and a significant mediating effect only in relation of behavior intention (Hassan et al., 2016; Grimmer & Miles, 2017), but research that explains the gap between intention and behavior using the complete TPB model is lacking to date.

Although there are many studies on health consciousness and consumer knowledge in the context of organic food, there are still few studies that integrate them into the TPB model (Dorce, 2021).

It is essential to fill the gaps of various previous studies, this study was con-
ducted to test the full TPB model which was extended with two antecedents of attitude, which are health consciousness and consumer knowledge. Furthermore, although according to the TPB, intentions are strong predictors of behavior, it must be proven through additional studies whether consumers who have these intentions will behave in the future. Therefore, the main problem in this study is how health consciousness and consumer knowledge affect consumers’ intentions to buy organic food and their impact on future buying behavior.

Hypothesis Development

Theory of Planned Behavior

The theory of Planned Behavior has been used successfully to explain and predict behavior in many behavioral domains, from physical activity to drug use, from recycling, consumer behavior, and other research-sharing adoption to privacy protection (Ajzen, 2020).

Although the original theory of the TPB model has been used to measure intention in many studies, people do not always make their intention to behave in the future. In contrast to this, basically intention is a strong predictor of behavior (Ajzen, 2020). Purchasing intention, based on the TPB, is determined by three factors: a person's attitude that leads to behavior (purchasing attitude), the level of social pressure felt by people and related to subjective behavior or norms, and the level of one's control (perceived behavioral control).

H1: Consumer knowledge has a positive effect on attitudes toward organic food.

Relationship between Health-Consciousness and Attitudes towards Organic Food

Health-consciousness consumers, as they are known as organic food buyers, are motivated to improve or maintain their health and quality of life because of their awareness and concern for their well-being (Wang et al., 2019).

Since organic food being marketed is healthier than conventional food and certainly more environmentally friendly, it is interesting to investigate the relationship between the two key factors and consumer attitudes towards organic food. Unlike previous studies that used general food choice motives to predict consumer attitudes toward organic food (Wang et al., 2019), Magnusson et al. (2003) found in their research that health and environmental con-
siderations were predictors of attitudes and purchase intentions for organic food. In line with that, Michaelidou & Hassan (2008) found that health consciousness affects consumer attitudes toward organic food. Therefore, health is the main factor consumers consider when buying organic food because there are considerations between healthy food and others that ultimately shape their attitudes.

H2: Health consciousness has a positive effect on attitudes toward organic food.

Relationship between Attitudes toward Organic Food and Purchase Intention

According to the TPB, a more assertive attitude leads to more robust behavior to carry out the intended behavior. Attitude reflects a person’s preference for whether to behave or not (Scalco et al., 2017). Previous research has shown that attitude is an essential predictor of intention (Yazdanpanah & Forouzani, 2015; Maichum et al., 2016). In addition, Tarkiainen & Sundqvist (2005) found that consumer attitudes have a positive relationship with intentions to buy organic products. Based on this explanation, consumer attitudes can be interpreted as a positive or negative assessment of the purchase of organic food, the intention to consume.

H3: Attitudes toward organic food have a positive effect on purchase intention.

Relationship between Subjective Norms and Purchase Intention of Organic Food

The most important social influences to buying and consuming organic food come from family, friends, relatives, co-workers, and other reference groups (Scalco et al., 2017). Thus, subjective norms are individual beliefs about the opinions of significant others in social settings about certain behaviors, which can motivate a person to carry out certain behaviors or not (Sultan et al., 2019).

Several research results found that subjective norms are a determining factor and have a positive influence on the intention to buy organic food (Saleki et al., 2019; Fleseriu et al., 2020; Dorce et al., 2021). Based on the explanation, it can be concluded that subjective norms can influence a person’s intention to buy organic food through individual interactions.

H4: Subjective norms have a positive effect on the purchase intention of organic food.

Relationship between Perceived Behavioral Control and Purchase Intention of Organic Food

Perceived Behavioral Control is the extent to which an individual executes behavior. PBC consists of two characteristics: the quantum of control that individuals have over their behavior and the confidence an individual has in whether they can behave or not, and able to perform the behavior or not (Maichum et al., 2016). When people believe that they have strong resources, their perception of control will be very high and of course, have an impact on increasing the intention to behave. Furthermore, the increase in intention to behave is also influenced by PBC (Armitage & Conner, 2001). Based on the explanation, someone who has a high level of control tends to have a strong behavioral intention towards a certain behavior.

H5: Perceived Behavioral Control has a positive effect on the purchase intention of organic food.

Relationship between Purchase Intention of Organic Food and Buying Behavior

Intention is understood as an individual’s appropriateness to behavior (Ajzen, 1991). Therefore, it is expected that the stronger the intention a person shows towards buying organic food, the
more likely that person is to buy that type of food product effectively. This explanation is in line with a study from Scalco et al. (2017), which explains that the relationship or correlation between intention and actual behavior ranges between moderate and large. Several research results on organic food found that purchase intention is a strong predictor of future purchasing behavior (Bai et al., 2019; Fleseriu et al., 2020; Dorce et al., 2021). This shows that when a consumer has a firm intention, it is likely that in the future, they will make an actual purchase.

H6: Purchase intention of organic food has a positive effect on buying behavior.

The research model based on the hypothesis proposed in this study is shown in Figure 1.

**METHOD**

This research was conducted through a longitudinal study with a survey method divided into two studies. Study I was to test hypotheses 1-5 and Study II was conducted three months later with the same respondents to test hypothesis 6. The population is consumers in Ambon (the Capital of Maluku Province) using a non-probability sampling technique through purposive sampling. The questionnaires were distributed using paper and pencil, which were distributed by the enumerators directly to the respondents. The number of question indicators in this study was 18 items, so the sample size in the study had to be larger than 5 x indicators, namely 80 respondents (Hair et al., 2019). The sample size is 187 respondents for Study I and 153 respondents for Study II. Respondents are those who meet the following criteria: (1) decide to purchase organic food, and (2) cook for family consumption every day.

Consumer knowledge is the consumer’s subjective knowledge of the various information contained in organic food obtained through information about the consumer or the consumer’s experience in consuming it. The variable consists of three question items adopted by Singh & Verma (2017); Health Consciousness is awareness and concern for their health, and it is motivated by improving health and quality of life as well as preventing diseases that arise through healthy living.
behaviors. The variable consists of three question items adopted (Roseira et al., 2022); Attitudes toward organic food is an evaluation of a person's positive or negative beliefs or feelings toward organic rice. The variable consists of three question items adopted (Roseira et al., 2022);

Subjective norms are one's perceptions or views of other people's beliefs that will influence the intention to do or not do the behavior under consideration. The variable consists of three question items adopted (Roseira et al., 2022); Perceived behavioral control is defined as the perceived ease or difficulty of performing a behavior. The variable consists of three question items adopted (Roseira et al., 2022); Purchase intention of organic food is a conscious plan within the individual to make a buying effort for organic food. The variable consists of three question items adopted (Roseira et al., 2022). Hypothesis testing in the study I was carried out using Structural Equation Modeling (SEM) through AMOS, while in study II it was carried out with logistic regression through the SPSS application.

RESULT AND DISCUSSION

Study I

This first study was conducted on March 7th to 26th, 2022. Respondents in Study I totaled 187 respondents. The complete characteristics of the respondents can be seen in Table 1.

Table 2 shows the results of descriptive statistical tests (mean and standard deviation), and validity testing through Confirmatory Factor Analysis which is shown through the value of the loading factor where all items have a value greater than 0.4. The test results via Cronbach Alpha show that all variables have a value greater than 0.7. Furthermore, testing the AVE (Average Variance Extracted) value shows that the value of all variables is more significant than 0.4, and the Composite Reliability value is entirely more significant than 0.7 (Chan & Lay, 2018).

Hypothesis testing is done using Structural Equation Modeling (SEM). Based on the results of the Goodness of Fit test from the structural model, the value of Chi-Square = 150,560; probability
Table 2. Descriptive Statistics and CFA, Cronbach Alpha, AVE, and CR

<table>
<thead>
<tr>
<th>Variable</th>
<th>Item</th>
<th>Loading</th>
<th>Mean</th>
<th>SD</th>
<th>Cronbach Alpha</th>
<th>AVE</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Attitude</td>
<td>CA1</td>
<td>0.745</td>
<td>3.959</td>
<td>0.396</td>
<td>0.708</td>
<td>0.519</td>
<td>0.761</td>
</tr>
<tr>
<td></td>
<td>CA2</td>
<td>0.698</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CA3</td>
<td>0.722</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Consciousness</td>
<td>HC1</td>
<td>0.747</td>
<td>3.728</td>
<td>0.485</td>
<td>0.722</td>
<td>0.599</td>
<td>0.816</td>
</tr>
<tr>
<td></td>
<td>HC2</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HC3</td>
<td>0.784</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer Attitude</td>
<td>ATT1</td>
<td>0.795</td>
<td>3.747</td>
<td>0.429</td>
<td>0.709</td>
<td>0.526</td>
<td>0.767</td>
</tr>
<tr>
<td></td>
<td>ATT2</td>
<td>0.694</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ATT3</td>
<td>0.681</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjective Norm</td>
<td>SN1</td>
<td>0.769</td>
<td>3.895</td>
<td>0.406</td>
<td>0.717</td>
<td>0.518</td>
<td>0.762</td>
</tr>
<tr>
<td></td>
<td>SN2</td>
<td>0.698</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SN3</td>
<td>0.689</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Behavioral</td>
<td>PBC1</td>
<td>0.697</td>
<td>3.681</td>
<td>0.459</td>
<td>0.713</td>
<td>0.529</td>
<td>0.770</td>
</tr>
<tr>
<td>Control</td>
<td>PBC2</td>
<td>0.793</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PBC3</td>
<td>0.687</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase Intention</td>
<td>INT1</td>
<td>0.716</td>
<td>3.857</td>
<td>0.439</td>
<td>0.735</td>
<td>0.501</td>
<td>0.751</td>
</tr>
<tr>
<td></td>
<td>INT2</td>
<td>0.708</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INT3</td>
<td>0.669</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Figure 2. Hypothesis Testing Result
The results of hypothesis testing show that consumer knowledge has a positive effect on attitudes toward organic food. This is indicated by the standard error of 0.289, Critical Ratio 2.781, and a significance value of 0.004 (p<0.05). Thus, it can be concluded that Hypothesis 1 is supported. Gracia & De Magistris (2007) suggest that knowledge of organic products is one of the main determinants of attitudes and purchase intentions of organic products. Aertsens et al. (2011) explained that when individuals have subjective knowledge about organic food, it has a more positive impact on organic food. Organic food is different from other non-organic products, which have a higher price. Consumer knowledge is a key influence in purchasing organic products. Consumers will buy organic food if they know the benefits and advantages of other food products. Furthermore, this will impact the behavior of organic food consumption.

The results of hypothesis testing show that attention to health positively affects attitudes toward organic food. This is indicated by the standard error 0.213, Critical Ratio 2.016, and a significance value of 0.044 (p<0.05). Thus, it can be concluded that Hypothesis 2 is supported. Michaelidou & Hassan (2008) confirmed that individuals with a health concern are more motivated to improve and maintain their health and quality of life. Those who buy organic food feel responsible for their health. Buyers of organic food appear to be health conscious, feel responsible for their own health, and think that food intake influences their health. Furthermore, organic food buyers value safe, healthy, and natural food and are more willing to buy organic food. Several research results indicate that health awareness is a significant determinant in predicting attitudes, intentions, and organic food purchases (Magnusson et al., 2003; Tsakiridou et al., 2009; Hsu et al., 2016). According to consumer decisions, consumers’ choice of organic food seems to be based on the same justification and reasons, whereas individual attitudes towards organic food are primarily based on beliefs about the benefits.

The results of hypothesis testing show that attitudes towards organic food have a positive effect on the intention to buy organic food. This is indicated by the standard error 0.145, Critical Ratio 4.301, and a significance value of 0.000 (p<0.05). Thus, it can be concluded that Hypothesis 3 is supported. The effect of attitude on the intention to buy organic food is in line with several previous studies (Ah-
med et al., 2021; Boobalan et al., 2021; Leyva-Hernández et al., 2021; Sultan et al., 2019). Attitude is a manifestation of the evaluation carried out on certain behaviors whether it is a good or bad thing (Maichum et al., 2016). If a person believes that his actions have a positive impact then he will maintain his attitude and vice versa if it has a negative impact. Consumer attitudes play an important role in the main models describing consumer behavior. Attitude plays a vital role because it is believed to influence behavior significantly. Consumer attitude indicates how well a person evaluates a particular behavior. A person who believes that doing some behavior will lead to positive outcomes will maintain a positive attitude towards that behavior or negative outcomes.

The results of hypothesis testing show that subjective norms positively affect the intention to buy organic food. This is indicated by the standard error 0.128, Critical Ratio 2.910, and a significance value of 0.004 (p<0.05). Thus, it can be concluded that Hypothesis 4 is supported. Subjective norm refers to the perception that other people will approve the decision to consume or not. Thus, the individual’s perception of social pressure convinces the person to carry out certain behaviors (Scalco et al., 2017). The results of the study show that these perceptions can influence consumers in their decision process, namely their intention to buy organic food (Singh & Verma, 2017; Sultan et al., 2020; Nguyen et al., 2021) where the opinions of others have significant strength to influence individuals in that context. Thus, subjective norms are assumed to describe social pressure on decision-makers to make or not make a purchase. A consumer’s intention to purchase organic food will be influenced by the views of those closest to them towards organic food itself. If they look positive, consumers will believe what those closest to them believe.

The results of hypothesis testing show that perceived behavioral control has a positive effect on the intention to buy organic food. This is indicated by the standard error of 0.096, Critical Ratio of 2.114, and a significance value of 0.032(p<0.05). Thus, it can be concluded that Hypothesis 5 is supported. These findings are consistent with studies conducted by Fleseriu et al., (2020), Dorce et al. (2021), and Boobalan et al., (2021), which prove that Perceived Behavioral Control affects the intention to buy organic products. Perceived Behavioral Control means that consumers’ perceptions of what they buy and eat influence their intention to buy organic food. Perceived behavioral control includes the influence of external factors, such as time, availability, and recognition (labeling), which consumers believe influences the assessment of the risks and benefits of organic food in a buying situation.

**Study II**

This study was conducted three months after the first, from July 3rd to 20th, 2022. In this study, the questionnaire was distributed again to all respondents involved in Study I. An important factor that has a significant impact on the success of intent to behavior in explaining and predicting actual behavior is a measure of behavioral intention that has the same level of conformity with actual behavior. Although purchase intention is a strong predictor, it is not necessarily expressed in future buying behavior. Therefore, this second study measured whether the behavioral intention is implemented through actual buying behavior. Study II used logistic regression because the dependent variable is dichotomous (the answer choices are yes or no).

There were only 187 respondents who responded out of the 210 respondents. Table 4 displays the characteristics of the respondents.
**Table 4.** Respondents Characteristic (Study II)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Category</th>
<th>Amounts</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Men</td>
<td>31</td>
<td>20.26</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>122</td>
<td>79.74</td>
</tr>
<tr>
<td>Age</td>
<td>25 – 35</td>
<td>19</td>
<td>12.42</td>
</tr>
<tr>
<td></td>
<td>36 – 45</td>
<td>48</td>
<td>31.37</td>
</tr>
<tr>
<td></td>
<td>&gt; 45</td>
<td>86</td>
<td>56.21</td>
</tr>
<tr>
<td>Occupation</td>
<td>Private-Employee</td>
<td>28</td>
<td>18.30</td>
</tr>
<tr>
<td></td>
<td>TNI/POLRI</td>
<td>30</td>
<td>19.61</td>
</tr>
<tr>
<td></td>
<td>Self Employed</td>
<td>59</td>
<td>38.56</td>
</tr>
<tr>
<td></td>
<td>Civil Servant</td>
<td>23</td>
<td>15.03</td>
</tr>
<tr>
<td></td>
<td>The others</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: n = 153

The complete results of testing the hypothesis in Study II can be seen in Table 5.

**Table 5.** Logistic Regression

<table>
<thead>
<tr>
<th>Hosmer and Lemeshow Variables in the Equation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
</tr>
</tbody>
</table>

Source: Current Study

Based on the results of logistic regression testing as shown in Table 5, the Chi-square value obtained through the Hosmer and Lemeshow test is 6.172 with a significance of 0.521 (p>0.05). Thus, it can be stated that this model is appropriate.

Furthermore, the significance value of the test results based on the Variables in the Equation is 0.035 (p<0.05), which means that the intention to buy organic food has a positive effect on the behavior of buying organic food.

Thus, it can be concluded that hypothesis 6 is supported. This finding is also supported by research by Bai et al., (2019), Aungatichart et al., (2020), Sultan et al., (2020), and Roseira et al., (2022) which state that intention is a strong predictor of buying behavior of organic food. Even though organic food is a premium product and is considered expensive, the possibility to buy it in the future is very strong for consumers who already have attitudes and intentions towards organic food. This is also because they have sufficient references about organic food so that the intention to buy appears and has implications for subsequent buying behavior.

**CONCLUSION AND RECOMMENDATION**

The findings in both studies confirm that the intention and behavior of buying organic food can be investigated through the Theory of Planned Behavior.

The theoretical implication of this research is the TPB model developed in understanding, explain, and predict consumer behavior in purchasing organic food. The results showed that the TPB model can be extended with the antecedents of attitude towards purchase intention, namely consumer knowledge and health consciousness.

In addition, attitudes towards organic food are influenced by knowledge of organic food and health concern. Consumers who intend to buy organic food have a strong tendency to implement it in the future through their buying behavior. The limitation of this research is that it is based on organic food in general and has not focused on types of organic food. Future research is expected to be able to make comparisons between types of organic food. The second limitation is that the variables included in the TPB extended are only the antecedents of attitude. Future research is expected to include other variables related to subjective norms and PBC.

Another limitation of the study is that the respondents were only in Ambon City because in Maluku, the development of organic food is still not popular other than Ambon City, making it difficult to get respondents from other places.
The higher the intention to switch to consuming organic food, the stronger it will encourage consumers to switch to consuming organic food, and the intention to switch significantly affects the behavior of switching to organic food products.

This research may be very useful for organic food producers and marketers. One contribution is how important consumer knowledge and understanding of health is when consuming organic food. Therefore, producers or marketers can develop better marketing strategy models to increase consumer understanding of the benefits of organic food consumption.

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