The impact of product familiarity on the purchase decisions of fruits and vegetables during COVID-19 pandemic

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Abstract. The research was conducted to examine the effect of the consumers’ product familiarity on the purchase intention in fruits and vegetables in Malang city during the COVID-19 pandemic. The judgment sampling method was used to select the 176 respondents based on the purchasing criteria from either the online and offline market at least twice or more. The data were analyzed using multivariate data analysis with partial least squares structural equation modeling (PLS-SEM). The findings showed that product knowledge had a great influence on the familiarity with the product. Consumers were aware of the food safety provided by the company while purchasing online. In addition, the familiarity of the products also brought a positive influence on purchase intention. The social influence and preference of other people became a factor considered by the consumers in purchasing the fruits and vegetables. So, the company should improve the marketing and branding strategies of the products by continually prioritizing the safety of the consumers in accordance with the health protocols.

1. Introduction

Along with the increase in Indonesia's population, the economic condition also experiences food needs development, particularly in the agricultural sector [1]. Many companies are making decisions on products as raw materials. For developing a company, maintaining the purchasing decision of the consumers becomes the goal especially in terms of marketing [2]. The purchase decisions are mostly based on the services provided by the company, namely the products' marketing, quality, as well as promotion [3].

The consumers' purchase decisions define as the method in selecting a product based on the desire of each individual or group. Meanwhile, purchase decisions are the accepted concept approved by each individual or group to decide which product will be purchased after the prior determination [4]. There are several supporting factors underlie in the purchasing decision of the consumers, such as the consideration in purchasing a product, the social influences of the other consumers surrounding, the cultural perspectives of the individual or group, and the personal factors namely age, lifestyle, and so on [5].
Besides purchase decisions, online marketing also plays a big role in company development recently. Online marketing creates a pretty good impact on the purchasing decision of the consumers, one of which is food products. In terms of food products, fruits and vegetables become the basic need of the people. Either fruits or vegetables are well-known as healthy sources of dietary nutrition and easy to find. Moreover, most Indonesian consume it daily.

However, the outbreak of COVID-19 creates an unstable economic condition in Indonesia. The rapid spread of the virus requires the government to make some regulations. One of the regulations is physical distancing, and it will give impacts to the company. In the future, product marketing in a company will bring an impact on the consumers' purchase decisions. So, this research aimed to investigate the impact of product familiarity on the purchase decisions of the consumers especially fruits and vegetables during the COVID-19 pandemic.

2. Materials and Methods
The research was conducted online in June – July 2020, located in Malang. The sampling method used judgment sampling in which the researchers conducted the interview using an online questionnaire to the consumers who purchased fruits and vegetables. The Cohen recommendations of the minimum sample were 0.10, 0.25, 0.50, and 0.75 with 1%, 5%, and 10% significant level in order to be able to detect the minimum R2 [6]. So, there were 176 respondents used in the research with a 1% significant level and 0.10 R2 minimum. This research employed the quantitative method which has statistical and numerical data analysis from the data obtained [7]. The data obtained were analysed using PLS-SEM (Partial Least Square- Structural Equation Modelling) method. This method was based on variants which simultaneously conducted measurement model test as well as structural model test. The evaluation was done by measuring the measurement model, structural model, and hypotheses testing.

The first step of the research was designing the inner model. The inner model was the designing of a structural model between latent variables in PLS based on the problem or the hypotheses of the research. This structural model became the general picture of the relationship between variables. Second, designing the outer model to identify whether a variable carried reflective or formative indicators because this research used both. Next, constructing the path diagram to give the overall picture of the relationship between variables. And finally, evaluating the PLS model. The evaluation processes were divided into two, namely the evaluation of the measurement model (outer model) and the structural model (inner model).

The evaluation of the measurement model (outer model) was performed to measure the validity and reliability of the indicators that shaped the latent structure. The latent structures in the PLS model could be formed by either reflective or formative indicators. Both had different criteria for evaluating the outer model. The reflective indicators were referred to as valid based on the loading factors values, composite reliability, Average Variance Extracted (AVE), AVE square root, and the correlation between latent constructs. There were various parameters for the formative indicators. The measurement of the formative indicators might be seen from the significant weight and also VIF values from the table of indicator weight. While the evaluation of the structural model (inner model) was performed to predict the relationships between latent variables by looking at the number of variances that could be clarified. Besides, the evaluation of the structural model (inner model) was performed to evaluate the significance of the p-value. This evaluation was seen on the R-square values of the endogenous variables, the impact scale, Q2 squared, and the fitness model of the scale of Goodness of Fit [8].

2.1. The hypotheses development
2.1.1. The relationship between product knowledge and product familiarity
The product knowledge could be created from product purchases, past experiences, or secondary sources. Past experiences of the products might influence the familiarity of the consumers [9]. Therefore, the hypothesis:

H1: The product knowledge of the consumers had a positive effect on product familiarity.
2.1.2. The Relationship between packaging and product familiarity
The packaging was an important medium used by the company for communicating the products to the consumers and there was a significant positive correlation between product familiarity and the use of values expressed in a product label \[10\].

H2: The packaging had a positive effect on product familiarity

2.1.3. The Relationship between social environmental factors and product familiarity
Several studies had shown the positive impact of socio-environmental factors such as social support from family and others on food purchasing. When customers were interested in the good conditions, they would feel familiar with the product even though they did not purchase it \[9\].

H3: The social-environmental factors had a positive impact on product familiarity.

2.1.4. The relationship between demographic factors and purchasing intention
The demographic factors namely gender and income might influence the urge to purchase the product \[11\].

H4: The demographic factors had a positive impact on purchasing intention

2.1.5. The relationship between product familiarity and purchasing intention
The effects of product familiarity related to messages acceptance, product preference, and purchase intention. Product familiarity was also considered an essential part of the decision in the products' selection \[9\].

H5: The product familiarity had a positive impact on behavioural intention of purchasing.

2.2. The research model
Several variables in this research namely product knowledge (X1), packaging (X2), dan social environmental (X3) as factors that influenced product familiarity (Y1) that also affected purchase intention (Y2). Furthermore, the demographic factor (X4) was also included to control the demographic characteristics of the respondents. The following research model and hypotheses were presented in Figure 1.

![Research Model](image)

**Figure 1.** The hypotheses of the research.

3. Results and Discussions

3.1. The sample demographic
Among 176 responses collected, there were 65.9% females and 34.1% males from different age ranges, occupations, educational levels, financial conditions before and after the pandemic, and also family members. Therefore, the responses could partly reflect the differences in perception, feelings, and purchase decisions of fruits and vegetables. The correspondents in ages ranges from 21-30 years
old (56.25%) accounted for the biggest proportion of the sample. Then, for the educational level, 46.02% of the respondents graduated from senior high school, 39.2% were students and college students as their occupation. Additionally, for the income, 52.27% of the respondents received under 2 million rupiahs per month before the pandemic and 68.18% received under 2 million rupiahs per month after the pandemic. It showed that there was a decrease in income due to the pandemic. Then, 43.75% of respondents had 2-3 members in their family.

### Table 1. The sample demographic.

| Factors          | Items                          | Frequency | Percentage (%) |
|------------------|--------------------------------|-----------|----------------|
| Gender           | Male                           | 60        | 34.09          |
|                  | Female                         | 116       | 65.91          |
| Age              | <= 20 years old                | 36        | 20.45          |
|                  | 21-30                          | 99        | 56.25          |
|                  | 31-40                          | 17        | 9.66           |
|                  | 40-50                          | 16        | 9.09           |
|                  | >50                            | 8         | 4.55           |
| Education        | Elementary school              | 1         | 0.57           |
|                  | Junior high school             | 8         | 4.54           |
|                  | Senior high school             | 81        | 46.02          |
|                  | Diploma –undergraduate programme | 79     | 44.89          |
|                  | Graduate programme             | 7         | 3.98           |
| Occupation       | Student/college student        | 69        | 39.20          |
|                  | Private employee               | 48        | 27.27          |
|                  | Housewife                      | 16        | 9.09           |
|                  | Entrepreneur                   | 8         | 4.55           |
|                  | Civil Servant/Teacher/Lecturer | 17        | 9.66           |
|                  | Others                         | 18        | 10.23          |
| Income (before COVID-19) | < 2.000.000                 | 92        | 52.27          |
|                  | 2.000.000 - 3.000.000          | 38        | 21.59          |
|                  | 3.000.000 - 4.000.000          | 18        | 10.23          |
|                  | 4.000.000 - 5.000.000          | 2         | 1.14           |
|                  | > 5.000.000                   | 26        | 14.77          |
| Income (during COVID-19) | < 2.000.000                 | 120       | 68.18          |
|                  | 2.000.000 - 3.000.000          | 26        | 14.77          |
|                  | 3.000.000 - 4.000.000          | 7         | 3.98           |
|                  | 4.000.000 - 5.000.000          | 3         | 1.71           |
|                  | > 5.000.000                   | 20        | 11.36          |
| Family Members   | 1                              | 9         | 5.11           |
|                  | 2 - 3                          | 56        | 31.82          |
|                  | 4 - 5                          | 77        | 43.75          |
|                  | 6 - 7                          | 25        | 14.21          |
|                  | >= 8                           | 9         | 5.11           |

#### 3.2. The main survey results
The measurement model was done by looking at the Cross-Loading value to find out the discriminative validity. The discriminative validity was considered valid if the indicator load on the construct was higher than the cross load with other constructs and also if the AVE value squared had a higher value than other constructs [6]. The data in Table 1 showed that each value on the cross-loading had reached 0.5 with a p-value <1. Also, in Table 2 could be seen that the AVE value when squared
would have a higher value compared to other constructs. In short, the results matched the criteria, so the data in this research had met the validity test requirements.

### Table 2. Combined loadings and cross-loading.

|     | X1     | X2     | X3     | X4     | Y1     | Y2     | P-value |
|-----|--------|--------|--------|--------|--------|--------|---------|
| X11 | 0.799  | -0.206 | -0.053 | -0.081 | -0.001 | 0.087  | <0.001  |
| X12 | 0.746  | 0.338  | -0.251 | -0.117 | 0.222  | 0.187  | <0.001  |
| X13 | 0.792  | -0.082 | 0.079  | -0.038 | -0.015 | -0.073 | <0.001  |
| X14 | 0.851  | -0.046 | 0.107  | 0.068  | -0.134 | -0.007 | <0.001  |
| X15 | 0.723  | 0.024  | 0.105  | 0.171  | -0.053 | -0.200 | <0.001  |
| X21 | 0.161  | 0.795  | -0.244 | -0.026 | 0.070  | 0.199  | <0.001  |
| X22 | -0.108 | 0.795  | 0.096  | 0.048  | 0.199  | -0.217 | <0.001  |
| X23 | 0.029  | 0.658  | -0.364 | 0.009  | -0.030 | 0.210  | <0.001  |
| X24 | -0.243 | 0.729  | 0.437  | 0.056  | 0.074  | -0.348 | <0.001  |
| X25 | 0.138  | 0.842  | 0.046  | -0.076 | -0.295 | 0.154  | <0.001  |
| X31 | -0.163 | 0.246  | 0.783  | -0.003 | -0.082 | -0.016 | <0.001  |
| X32 | 0.119  | -0.364 | 0.724  | 0.123  | 0.251  | -0.476 | <0.001  |
| X33 | 0.080  | -0.004 | 0.725  | 0.006  | -0.136 | 0.272  | <0.001  |
| X34 | -0.020 | 0.092  | 0.801  | -0.114 | -0.024 | 0.199  | <0.001  |
| X41 | 0.197  | -0.167 | 0.049  | 0.695  | 0.104  | 0.055  | <0.001  |
| X42 | -0.197 | 0.167  | -0.049 | 0.695  | -0.104 | -0.055 | <0.001  |
| Y11 | -0.107 | 0.271  | -0.044 | -0.055 | 0.836  | 0.277  | <0.001  |
| Y12 | 0.102  | -0.240 | 0.080  | 0.017  | 0.884  | -0.095 | <0.001  |
| Y13 | -0.001 | 0.019  | -0.044 | 0.041  | 0.771  | -0.192 | <0.001  |
| Y21 | -0.397 | 0.270  | -0.163 | -0.019 | 0.251  | 0.766  | <0.001  |
| Y22 | 0.223  | -0.183 | 0.082  | 0.111  | -0.083 | 0.846  | <0.001  |
| Y23 | 0.137  | -0.061 | 0.066  | -0.094 | -0.145 | 0.844  | <0.001  |

In determining the convergent validity of the AVE value must be > 0.50 so that the data could be accepted [6]. It implies that the AVE value was > 0.5, the average constructs accounted for more than half (50%) variants of each indicator. It is displayed in Table 4 that the demographic (X4) variable was unacceptable due to the AVE value only showed 0.483, so it did not meet the average construct. Besides, the demographic (X4) was also unacceptable from Cronbach’s Alpha (CA) and Composite Reliability (CR) values. It showed -0.071 for CA and 0.651 for CR values, in which the criteria must be > 0.708 as well as in the range of 0-1 for both CA and CR [6].

The structural model was a dependent variable and also became the coefficient standard with latent variable path estimation. The outputs were the R2 in each endogen latent variable that was valued between 0.1. And also representing the number of variants in the construct [6]. Then, if the R2 value was 0.75, so the endogenous construct value was substantial. If the R2 value was 0.50, so the endogenous construct value was moderate. And if the R2 value was 0.25, so the endogenous construct value was low. It displayed in Figure 2 that the R2 value between X1, X2, X3 towards Y1 was 0.42,
the R2 value between X4 and Y2 was 0.39 portrayed the moderate endogenous construct value because it was close to 0.50.

Table 4. The results of reliability latent variable test.

| Variable                        | Cronbach’s Alpha | Composite Reliability | Average Variance Extracted (AVE) |
|---------------------------------|------------------|-----------------------|----------------------------------|
| Product Knowledge (X1)          | 0.842            | 0.888                 | 0.614                            |
| Packaging (X2)                  | 0.822            | 0.876                 | 0.588                            |
| Social-Environmental (X3)       | 0.754            | 0.844                 | 0.576                            |
| Demographics (X4)               | -0.071           | 0.651                 | 0.483                            |
| Product Familiarity (Y1)        | 0.775            | 0.870                 | 0.691                            |
| Purchase Intentions (Y2)        | 0.754            | 0.860                 | 0.671                            |

Figure 2. The structural model of the research.

Determining the significance of path coefficients meant that the number of cases must equal to the number of valid observations in the original sample. The critical value for this test was 1.65 (significance level = 10%), 1.96 (level of significance = 5%), and 2.57 (significance level = 1%). Also considering the error probability of 5% or p<0.05 [6]. Figure 2 displayed the brief results of the hypotheses test in Table 5 as follow:

Table 5. The hypotheses test.

| Information | Coefficient | P-Value | Result                |
|-------------|-------------|---------|----------------------|
| H1 X1-Y1    | 0.109       | 0.07    | Valid on level 10%   |
| H2 X2-Y1    | 0.116       | 0.06    | Valid on level 10%   |
| H3 X3-Y1    | 0.521       | <0.01   | Valid on level 1%    |
| H4 X4-Y2    | 0.184       | <0.01   | Valid on level 1%    |
| H5 Y1-Y2    | 0.554       | <0.01   | Valid on level 1%    |
It can be seen from Table 4 that the hypotheses were accepted because they met the predetermined criteria. Then, it also did not indicate any collinearity problem because VIF for all variables had a range value between > 0.20 and < 5 [6, 12].

First, these results indicated that the consumers consciously consumed fruit and vegetable products and considered a variety of the products' information, availability in the online marketplace, and packaging. The more knowledge of the products, the greater the familiarity. According to the research [9], product knowledge was very influential on the familiarity of the products and also gave an impact on the purchase intentions.

Second, the social environment had a positive effect on the familiarity with the products. This showed that friends, family, as well as social groups, influenced consumers in identifying, selecting, and deciding to buy fruits and vegetables online during the pandemic. The consumers would feel more familiar with the product if they were supported by information from other people, such as friends and family [9].

Third, the relationship between demographics and purchase intentions variables was declared invalid. But demographic factors such as age and gender had nothing to do with the purchasing decisions due to the value of p < Alpha, so it was H0 or no relationship [13]. Based on Table 4, the Demographics Alpha value was -0.071. In short, the relationship between the demographics and the purchase intentions in fruit and vegetable products did not have a significant relationship.

Finally, the familiarity with fruit and vegetable products played an important role in predicting purchase decisions among consumers during the pandemic. Consumers would be more confident in purchasing the products if they felt familiar with the products, including online purchasing. They would also feel secure if they familiar with the products they intended to purchase. Once the familiarity of the consumer increased, the purchase probability would increase as well.

4. Conclusions

To sum up, the results showed that there were significant effects of the product knowledge, packaging, and also social-environmental factors in the familiarity of the products especially fruits and vegetables. Furthermore, there is a significant influence in the familiarity of the product with the purchase intentions in fruits and vegetables. From the result of the research, the companies that trade and market fruits and vegetables may develop marketing and branding strategies to promote its product primarily online and get a bigger market target. The companies also should pay more attention to the freshness, good taste, and safe packaging of the products. Additionally, they can focus on young people as target markets because they are easily influenced by social trends, such as social media.

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