Millennial consumer behavior on purchasing of fishery functional food at tokopedia: testing the Theory of Planned Behavior

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Abstract: This study was conducted to analyze the millennial consumer behavior (MCB), purchase intention (PI) and purchase decision (PD) on fisheries-based functional foods (F3) in the form of fish oil, spirulina, processed fish food, and others through e-commers Tokopedia. Data were collected from 144 millennials consumer in Java Island who have known or bought F3 through Tokopedia. Structural Equation Modeling (SEM) was used to test the effect of purchase attitude (PA), subjective norm (SN), perceived behavioral control (PBC) on PI and PD. The empirical results show that there is a positive and significant relationship of PA, SN, PBC on PI. Also, PBC and PI to PD. Theory of Planned Behavior (TPB) has been proven to effectively explain the MCB on purchasing F3 at Tokopedia, the explanatory power is 57.5% for PI and 9% for PD. The most effective effect on PI come from SN, with total effect 35.4%, while PD mostly determined by PBC through PI. Tokopedia and F3 vendors need to pay more attention and adjustment of marketing strategy to increase PI and PD of MCB on purchasing F3.

1. Introduction
Techology is changing the way in shopping. In the era of Internet and developing of communication technologies, marketing has turned into a dynamic industry [1]. This is because people are increasingly dependent on technology in many aspects of their daily lives, and the smartphone is spearheading this process [2]. By using the internet access, everyone is very easy to shop online. E-commerce is one of the places where a lot of people can make buying and selling online [3]. Increasing the number of e-commerce retail sales from year to year since 2015 in the Indonesian market can be seen from the increase in total sales of 4.61 billion dollars in 2015 to 5.65 billion dollars in 2016. This amount is also expected to continue to increase for the next few years, and is expected to be 14.47 billion dollars in 2021 [4].

One of the most important markets target in online selling is millennials generation, who was born in the year 1981 to 2000. In Indonesia, half of online shoppers is the Millennial Generation [5]. Number of millennials in Indonesia reached about 33.75 percent of the total population of Indonesia (88 million people) [6]. This proves that the potential for online purchasing by the millennial generation is enormous because 56.42% of internet users is the millennial [6]. Moreover, there are many e-commerce that interest online purchase, for example tokopedia, bukalapak, shopee, and others.
There is known that food is one of the commodities that favored consumers who shop online through tokopedia, including fisheries-based functional foods (F3), in the form of fish oil, spirulina, processed fish food, and others.

Other countries such as China, a wide range of processed fishery food available online [7]. In other developed countries such as Japan, US and European markets, production and marketing of functional foods has been growing rapidly. Compared with developed countries, the size of the functional food market in developing countries is very limited [8]. Indonesia as a tropical country likely to lead the functional food industry. Adopting the findings [9] in Korea is interesting to study the implementation in Indonesia, how is the PA of F3 affect the PI and PD by millennial consumer in Indonesia. A wealth of natural resources and high public consumption will encourage the food industry to be more developed and able to design functional foods better [10]. Especially considering that Indonesia is a maritime country which fish production reached 23.26 million tons/year [11].

The lack of research F3 in e-commerce, especially in Tokopedia, which is one of the favorite e-commerce and ranks one of the 10 leading e-commers in Indonesia [12], encourage study about MCB at e-commerce Tokopedia, by testing TPB. This research is expected to develop a marketing and F3 industry, while increasing fish consumption of Indonesian society. Therefore, this study aimed to test the application of TPB in determining purchase intentions and purchasing decisions of F3 through e-commerce sales in Tokopedia by millennial consumers in Java Island, Indonesia.

PA is a function of the perceived desires and possibilities expected results and has proven to be a strong predictor of some behaviors studied [13]. Attitude describe any form of belief and evaluation, both positive and negative, regarding personal behavior [14]. Attitudes towards buying behavior refers to the extent to which someone has evaluations unfavorable or favorable due to insufficient understanding assessment of the relevant behavior [9, 15]. The determinants of PA were adapted from [9]: (a) Purchase F3 is a good thing, (b) Purchase F3 is great value, (c) Purchase F3 is truly beneficial.

SN associated with the influence of social pressure to perform or not perform certain behaviors [15]. SN is also the individual's belief about how they would be seen by their reference group, if they perform certain behaviors [16]. SN also defined how individual interpretation of other people's opinions about certain behaviors [17]. The SN indicators were adapted from [9]: (a) The important persons to me (eg, family, friends) think positive to me to buy F3, (b) The important persons to me support me to buy F3, (c) The important persons to me would understand me to buy F3, (d) The important persons to me would approve me to buy F3.

PBC refers to an individual's confidence in its ability to behave properly [13], [15]. PBC is influenced by a set of control beliefs about opportunity and the presence or absence of the necessary resources [15]. The indicator PBC were modified from [9]: (a) I am able to reach F3, (b) I can find a place to buy F3 easily, (c) I have time to buy F3, (d) I think it's easy to buy F3.

PI often called as conative component on attitudes related to the possibility of consumers to buy a particular product [18]. The PI indicators were adapted from [19], namely: (a) I tend to buy F3 through an online site, (b) I want to buy F3 through an online site, (c) I plan to purchase F3 through online sites.

PD according to [20] is a step in the buyer's decision process in which consumers actually buy. According to [21], before making a purchasing decision, consumers use all available information to determine a decision. When there is a competing product, they will identify and evaluate each product before making an appropriate decision. The indicators of PD were taken and modified from [20], namely: (a) I am very selective with the brand or product F3 I will buy, (b) Making the right decision is very important in choosing a brand or product F3, (c) I really care about the brand or product F3 that I choose.

Based on [9] that PA and PBC have affect to PI, and [22] that SN affect to PI, although with small effect. Then, TPB is a cognitive model of human behavior based on the PA, SN, PBC, and BI [23]. Also, according to [18] that TPB can be used as an effective predictor of the intention to act and the actual behavior, with the intention of behaving represent actual possibility to act, and the intention is influenced by attitudes (ATT), SN, and PBC. TPB proved very useful in predicting PI in purchasing
food, particularly functional foods [24]. However, some studies suggest that SN has little influence on PI [9, 15, 24, 25]. Thus, the hypothesis of the study was composed as follows:

- **H1**: PA has significance effect on PI of F3
- **H2**: SN has significance effect on PI of F3
- **H3**: PBC has significance effect on PI of F3
- **H4**: PI has significance effect on PD of F3
- **H5**: PBC has significance effect on PD of F3

### 2. Material and methods

#### 2.1 Research location, object and respondents

The study was conducted in Java due to the population dominate the use of e-commerce in Indonesia [5]. While the research object was F3 sold via e-commerce Tokopedia. Respondents of this study were the millennial generation who live in Java and have known or purchased F3 through Tokopedia.

#### 2.2 Research type and method

This cross section [26] and explanatory research [27] used a quantitative approach by measuring indicators of research variables [28].

#### 2.3 Data collecting and analysis

Through the survey [29] using online questionnaire and incidental sampling technique were obtained 144 respondents based on criteria according to [30] and analysis model [31]. Having obtained the data Likert scale with 5 scale of the relationship PA, SN, and PBC on PI and PD of F3 in Tokopedia, then the data were analyzed using structural equation modeling (SEM) WarpPLS and quantitative descriptive approach.

### 3. Result and discussion

#### 3.1 Profile of respondent

Consumers of F3 in Tokopedia were dominated by female (61.8%), millenial age 20-23 years old (91%) and unmarried (93.06%), high school educated (68.1%), as a student (84%), income <Rp 2,500,000 per month (68.8%), and stay in Malang (27.78%), and the rest are scattered in other parts of Java.

#### 3.2 Measurement model

Measurement model started with the reliability and validity testing. The results of CFA analysis showed that the five-factors model fit the data well and all the factor loadings were found to be significant at 0.001. Testing of convergent and discriminant validity were tested by WarpPLS 6.0. Based on the convergent validity testing that all value Average Variances Extracted (AVE) > 0.5, meets the convergent validity. Cross check against the convergent validity by looking at the value of factor loading ≥ 0.5 - 0.6, sufficient to meet the convergent validity [32]. Even the loading factor values ≥ 0.3 or significant (Hair et. al, 2010) deemed meaningful. Discriminant validity test of the overall indicator (questionnaire) with the square root of AVE is greater than the correlation of the variable in question, discriminant validity fulfilled [32]. The items on the questionnaire statement for all variables as a whole has a good convergent validity. Reliability testing using composite reliability ≥ 0.70 and cronbach’s > 0.60 [32], so the research instrument as a whole meets the criteria of reliability.

The next step is the goodness of fit test (see Table 1). In this fit test for the model, there are 3 important indices to be seen is Average path coefficient (APC), Average R-squared (ARS) and Average block VIF (AVIF). Overall suitability index is already significant and ideal, it was concluded that the size of the goodness of the relationship between the latent variables (inner model) in this study meets both the model fit and quality indicates. The last step, interpretation of the results of hypothesis testing.
Table 1. Goodness of fit model

| No. | Fit and Suitability Index | Fit Criteria | Result | Outcome |
|-----|--------------------------|--------------|--------|---------|
| 1   | APC                      | p < 0.05     | 0.235 (p < 0.001) | Achieved |
| 2   | ARS                      | p < 0.05     | 0.331 (p < 0.001) | Achieved |
| 3   | AVIF                     | Acceptable if <= 5, ideally <= 3.3 | 1.994 | Accepted |

3.3 Hypothesis testing

Hypothesis testing is carried out on the path coefficient between variables by comparing p-value with α ≤ 0.10 due to the social data is not a very sensitive data [33]. Table 2 and Figure 1 shows the results of hypothesis testing between PA, SN, PBC, PI and PD. The first segment shows that the variables that affect the PI is PA, SN, and PBC. SN of millennials consumer proved the most dominant influence the PI of F3 (β=0.354, p-value <0.001). The second segment shows that the PD is influenced by PBC and PI. Based on the value of the β coefficient is known that PBC of millennials consumer dominates the PD of F3 (β= 0.180, p-value 0.013).

3.4 Application of TPB on purchasing F3: direct effect, indirect effect, and total effects

Based on the hypothesis testing in Table 2 show that all direct relationship between variables have significant effect.

Table 2. Direct effect, indirect effect, total effects and effectiveness priority path

| Predictor | Variable type | Direct Effect | Indirect Effect | Total Effect | Effectiveness Priority Path |
|-----------|---------------|---------------|-----------------|--------------|----------------------------|
| PA        | Mediation     | -             | -               | -            | PI                         |
| SN        | PI            | 0.347 (<0.001)| -               | 0.347 (<0.001)| 2                          |
| PBC       | PI            | 0.134 (0.049) | -               | 0.134 (0.049)| 3                          |
| PBC       | PD            | 0.180 (0.013) | -               | 0.201 (0.006)| -                          |
| PI        | PD            | 0.158 (0.026) | 0.201 (0.006)  | 0.158 (0.026)| 2                          |
| PA        | PI            | 0.055 (0.174) | 0.158 (0.026)  | 0.055 (0.174)| -                          |
| SN        | PI            | 0.056 (0.169) | 0.158 (0.026)  | 0.056 (0.169)| -                          |

Figure 1. Model of research result

Notes: PA = Purchase Attitude, SN = Subjective Norm, PBC = Perceived Behavior Control, PI = Purchase Intention, PD = Purchase Decision
Direct effect PA to PI is 0.347 with p-value <0.001. SN affect directly to PI for 0.354 with p-value <0.001. PBC also have significant effect to PI for 0.134 and p-value 0.049. Effect of PA, SN, and PBC on PI is positive and significant. The higher the perception of consumers in the PA, SN, and PBC, the higher the consumer PI. The results of this study extend TPB and also strengthen the research [9], and extend the prior study [22] regarding the Chinese citizens. The order of effectiveness priority of direct paths in determining PI, the 1st SN to PI, the 2nd PA to PI, and the last is PBC to PI. It means the most effective way to improve the millennial PI of F3 at Tokopedia is by increasing SN strategy due to the greater β coefficient. This finding is different with suggestion [9], [15], [24], [25] that SN has little influence on PI of functional food, green product, and region-of-origin labeling product.

There are some paths to determine PD, they are PBC to PD directly, PBC to PD through PI, PI to PD directly, PA to PD via PI, and SN to PD via PI. PBC significantly affect to PD with 0.180 and p-value of 0.013, while PBC to PD through PI of 0.201 was not significant (p-value 0.359). While, the total effect of PBC to PD through PI is 0.201 and significant (p-value 0.006). So, PI is a complete mediating variable of PBC to PD. When viewed in this context, then the effect of PBC to PD more effective if mediated by the PI. The higher the PBC and PI, the higher the PD. The results of this study extend TPB and the previous study by [20] on the consumer's PD of millennial generation. PI to PD have β coefficient 0.158 and significant (p-value 0.026). The higher the PI, the higher PD. While, path PA-PI-PD and SN-PI-PD were not significant. Also, the total effect of PA-PI-PD and SN-PI-PD were not significant. So, PI is a complete mediating variable PA to PD, and SN to PD. The results of this study extend and expand TPB and the prior’s studies.

Thus, the 1st path PBC-PI-PD is the highest effectiveness priority in determining PD, and the 2nd is PI to PD. Thus, the 2nd effective path for improving PD is using a strategy PI to PD directly.

4. Conclusion
PA, SN, and PBC is known to have a significant and positive influence on PI. The higher the perception of consumers in the PA, SN, and PBC, the higher the consumer PI. The results extend TPB and strengthen some previous researches.

PBC and PI have a significant and positive effect on the PD. The higher PI and PBC, the higher the PD of F3 in e-commerce Tokopedia. The results extend TPB and the previous studies. The most effective strategy to improve the PI of F3 is through increasing SN. Then, the best strategy to improve the PD of F3 is through PBC mediated by PI.

Subsequent research can add a variety of predictor and response variables such as repurchase intention, satisfaction, and loyalty. Also, expand the scope of the research areas in Indonesia, extend the respondents to other millennial generation. Tokopedia and businessman of F3 may consider PA and SN on the basis of the millennials generation to improve their marketing strategies. In addition, they need to maintain their PBC to the millennials consumer who think that easy to find F3 in Tokopedia. These findings can also be used as an evaluation and the inspiration for the business community of F3, given the enormous potential of fisheries in Indonesia and not fully utilized.

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6. Acknowledgement
The authors thank to UB’s research funds, Kemenristekdikti for one semester funds, and LPDP tuition fees at the 3rd year of my doctoral study. Many thanks to my advisers, research enumerator, Tokopedia and its consumers as a research object and respondent who contributed to the success of research and writing this article.