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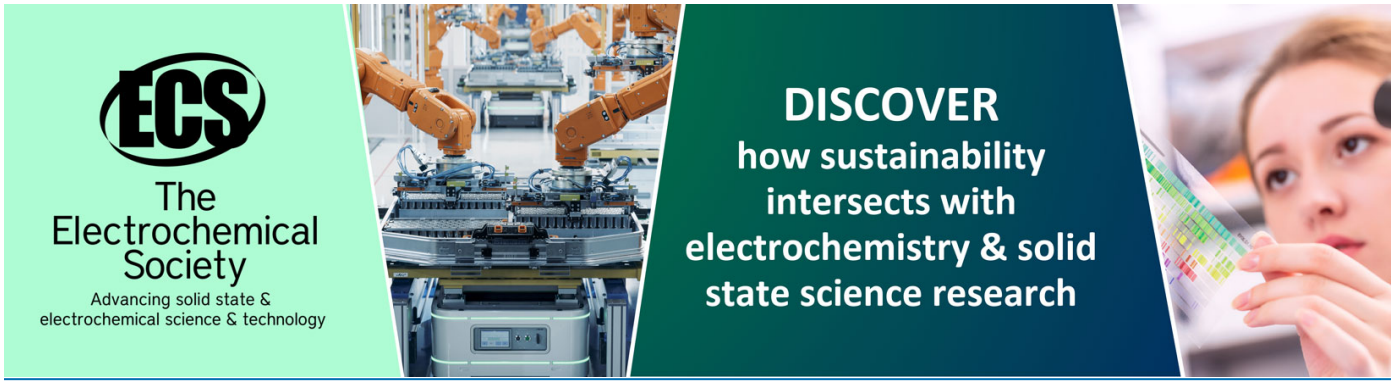

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Applying the Theory of Planned Behavior in Functional Food Purchasing: a Young Consumers Perception

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Abstract. The 4.0 industrial era has impact not only on the industrial sector but also on the changes of people's lifestyle, including the healthy lifestyle changes. More specifically, one of the impacts of the 4.0 industrial era is the growth of functional food industry. This research aims to analyze the effect of attitude, subjective norm, and perceived behavioral control on young consumers' purchase intention on functional food. This research focused on young consumers because they are susceptible to consume a food that can cause non-communicable diseases. This study used a quantitative approach. A survey was used to collect data. Questionnaires were spread in a university in South Tangerang. This study obtained 123 students that participated in the survey. Multiple regressions analysis was performed to test the conceptual model and the proposed hypotheses. The findings showed that attitude and subjective norm influence the purchase intention of the young consumers to buy functional foods. In the other hand, this research also revealed that perceived behavioural control has no significant impact on repurchase intention.

1. Introduction

1.1. Background

We are entering the 4.0 industrial era. This era utilizes various intelligent manufacture technology in companies' value chain, such as the Internet of Things (IoT), cyber-physical systems (CPSs), cloud computing, big data analytics (BDA), and information and communications technology (ICT) [1]. The emergence of those technologies benefitted companies. They (1) drove down production costs; (2) cut time-to-market of new products; (3) enabled a custom mass production without significantly increasing overall production costs; (4) created a more friendly and flexible working environment, and (5) increased the efficiency of natural resource and energy use [2].

The effect of technology arose in the 4.0 industry affected not only affect companies, but also human life [1]. Specifically, the technology development in the 4.0 industrial era also changed people's lifestyle. One of the notable changes was a healthy lifestyle. People now are more aware of the importance of a healthy lifestyle [3]. In addition, this modern era has seen many new products including functional food products [4,5].

Generally, functional foods are food or beverage which can give health benefits beyond basic nutrition [6]. The consumption of functional food is a new way for consumers in expressing health [7].

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The health benefits include reducing the risk of certain diseases, improving body condition, and even healing diseases [8].

In the last several years, the functional food industry has grown considerably [9]. Even in 2020, the market for this industry was projected to reach $192bn [3,10]. Even though the trend was significantly positive, the growth of this industry was not evenly spread. The industry tended to grow in developed countries, such as Japan, China, the US, and European countries [3]. For example, in the Asia-Pacific region, 78% of the total sales of functional foods came from the US, Canada, and Europe [11, 12]. On the other hands, in the developing county, this industry did not grow as expected even though developing countries have rich biodiversity [13]. One of the causes of this predicament was because functional food products have not been accepted. Based on that condition, one of the efforts that can be done to understand the consumers was to study the determinants of functional food consumers' purchase intention.

1.2. Research Gap and Objective

The research on functional food have been done for more than two decades [14]. Several researchers have studied the behavior of functional food consumer. Studies on the consumption of functional food have also been done in many countries, like Europe [15], Japan [16], Canada [17], Australia [18], Croatia [19], Mexico [12], Turkey [3], Lebanon [20], Iran [21], Malaysia [22], etc. On the other hands, many researchers also studied the antecedents of functional foods consumers' purchase intention [23-26].

From multiple consumers behavior theories, one of the most used was the theory of planned behavior (TPB). The theory explained that purchase intention was influenced by three determinants, which are attitude, subjective norm, and Perceived Behavioural Control (PBC). Several researchers who applied this theory in the context of functional food consumers' behavior. [27-29].

Even though there are several researches on functional foods that focused on TPB, there has not been a study that applied this theory to young consumers, especially in Indonesia. This research has become important because younger consumers have different behavior compared to the older generation. This was because they have a different experience and faced different condition. The differences have also been proven by some researchers [30-32].

This research focused on younger consumers because of two reasons. First, the younger generation was susceptible to an unhealthy lifestyle that would lead to the probability of the increased incidence of non-communicable diseases (NCD). Septiana et al. stated that the younger generation has a habit of consuming junk food [33]. Second, the younger generation was in a transition between living under their parents' roof and living independently.

Based on the above gap, this research aims to analyze the effect of attitude, subjective norm and PBC on younger consumer's purchase intention.

2. Literature Review

2.1. Functional food

The concept of functional food was first popularized in Japan in 1984 [8]. Even though the concept has been studied by researchers for some time, there was no single standardized definition. One of the most referred definition was one offered by Siró et al. [8]. Functional foods are foods that have been enriched with important and physiologically useful effects. Siró et al. [8] added that a product was called as a functional food when the food: (1) could improve the human health, condition in general (e.g., prebiotic or probiotic), (2) reduce the risk of certain diseases (e.g., reducing cholesterol or blood sugar level), or (3) foods that can cure diseases.

2.2. Theory of planned behaviour (TPB)

One of the most popular theories that explain consumers' behavior was TPB. This theory was first developed by Icek Ajzen in 1985 [34]. According to TPB, a consumer's real behavior can be predicted by their behavioral intention. In other words, the strength of their intentions will determine their real behavior. In the context of purchase intention, a stronger intention would lead to a higher probability of purchasing behavior. Aside from the importance of behavioral intention, TPB also explained that there were three important factors that affected behavioral intention, namely attitude, subjective norm, and PBC [34].

2.3. Purchase Intention (behavioral intention)

In the context of consumer behavior, one of the behavioral intention forms was repurchase intention [35]. Morinez et al. defined purchase intention as a situation when a consumer prefer a certain product [36]. According to Halim and Hameed, purchase intention was related to a plan to buy a certain product in the future [37]. In this study, we defined purchase intention as a condition when a young consumer has a plan to buy a functional food product in the near future.

2.4. Attitude

Attitude is an important factor in the product purchasing process. Generally, this factor is a factor that represented consumers' perception of a product. In TPB, attitude was defined as how far someone has a favorable or unfavorable evaluation on a product [34]. In the context of this study, attitude was viewed as young consumers' favorable or unfavorable evaluation on functional food products.

TPB explained that attitude can affect behavioral intention. It means that higher attitude will increase consumers' attention to buy a functional food product. Empirical evidence related to the effect of attitude on behavioral intention has been found by several researchers [35, 38-41]. In the context of functional food, that relationship applies [27, 41]. Given this, the first hypothesis of this study is proposed as follows:

H1. Attitude toward functional food influences purchase intention positively

2.5. Subjective Norm

Subjective norm was one of the factors that affect consumers' behavior. More specifically, the subjective norm was a factor that illustrated the effect of the social environment [42]. According to Ajzen, a subjective norm was a consumer's perception of peers' pressures to do or not to do something [34]. Based on the definitions, we defined subjective norm as young consumers' perception of functional food consumption based on the reference group that is considered important for them.

According to TPB, consumers would be willing to consume functional foods when there was a subjective norm to support the consumption of functional food. Several studies have proven the positive relationship of subjective norm and behavioral intention [35, 38-40, 43, 44]. In the context of functional food, O'conner and White have proven the effect of subjective norm on behavioral intention 28]. The second hypothesis of this study is formulated as follows:

H2. Subjective norm influences intention to purchase functional food positively

2.6. Perceived Behavioral Control (PBC)

One of the important factors that affect consumers' behavior was PBC. Ajzen defined PBC as "people's perception of the ease or difficulty of performing the behavior of interest" [34]. This factor was a factor that showed consumers' abilities to act. In other words, this factor was related to resource, opportunities, and barriers. Furthermore, bigger resources or opportunity to act or lower barriers would result in a stronger intention to act. More briefly, we defined PBC as young consumers' perception of the ease or difficulty of consuming functional food.

Several researchers have empirically proven that PBC had impacts on behavioral intention [35, 38, 41]. In the context of functional food, Some researchers have also studied likewise [27, 28]. The final hypothesis of this study is formulated as follows:

H3. PBC influences intention to purchase functional food positively

3. Methodology

3.1. Research design

This is a quantitative research. Data was gathered through a survey with a questionnaire as the instrument. A survey was done in April 2019. Questionnaires were spread in a university in South Tangerang.

3.2. Research object

Because functional foods have various categories, the object of this research only focused on the ones that prevent hypertension. This study chose this type of functional food because of three reasons. First, hypertension is the leading mortality cause in Indonesia [45]. Second, the number of hypertension incident was growing over the years [45]. Third, the younger generation tended to prefer junk food [46] and this habit increased the risk of hypertension.

3.3. Respondents

The respondents of this research are young consumers. In this study, we defined young consumer as undergraduate student. The respondents of this research were selected by using a convenience sampling technique. Questionnaires were distributed among regular students in a university in South Tangerang. This study obtained 123 students. The demographic profile can be seen in Table 1.

Table 1. Respondents'demographic profile

Characteristics	Category	%
Sex	• Male	76.4
	• Female	23.6
Age	• 18 Years old	7.6
	• 19 Years old	37.3
	• 20 Years old	24.6
	• 21 Years old	20.3
	• 22 Years old	5.9
	• 23 Years old	2.5
	• 24 Years old	0.8
	• 25 Years old	0.8
Residency status	• With family	65.9
	• Boarding house	24.4
	• Other	9.8
Location of resident	• The District of Tangerang	19.2
	• The City of South Tangerang	44.2
	• Other	36.7
Monthly allowance	• < Rp600,001	54.8
	• Rp600,000-Rp1,200,000	35.7
	• > Rp1,200,000	9.6
Source of monthly allowance	• Parents	71.9
	• Scholarship	0.8
	• Wage/salary	20.7
	• Other	6.6

3.4. Questionnaire

This research questionnaire was divided into two parts. The first one asked about the respondents' demographic profile, such as sex, age, residency status, resident location, allowance, and the source of their allowance. The second part is filled with questions related to the variables used in this research, namely attitude, subjective norm, PBC, and purchase intention.

Based on the previous research, those variables were categorized as latent variables. A latent variable was a variable that could not be measured directly but through several indicators. Those indicators were taken from previous studies [46, 38, 40]. The variables and indicators used in this research can be seen in Table 2. This study employed a five-point Likert scale to measure each indicator.

Table 2. The variables and indicators

Variables	Indicators
Attitude	AT1: I like functional food that can prevent hypertension
	AT2: A functional food that can prevent hypertension is good
	AT3: Consuming functional food that can prevent hypertension is a beneficial behavior for me
	AT4: It is interesting to consume functional food that can prevent hypertension
Subjective Norm	SN1: The people that are important for me agreed that I need to consume functional food that can prevent hypertension
	SN2: My family members want me to consume functional food that can prevent hypertension
	SN3: My friends suggest me to consume functional food that can prevent hypertension
PBC	PBC1: I believe that I can consume functional food that can prevent hypertension easily
	PBC2: I have a full control (not dependent on others) for consuming functional food that can prevent hypertension
	PBC3: My money allows me to buy functional food that can prevent hypertension
	PBC4: I can decide when I want to consume functional food that can prevent hypertension
Purchase Intention	PI1: I plan to consume functional food that can prevent hypertension in the future
	PI2: I expect to consume functional food that can prevent hypertension
	PI3: I want to try functional food that can prevent hypertension

3.5. Data Analysis

Because this is a quantitative research, this study employed several statistical analyses, which were factor analysis, Cronbach's Alpha analysis, and multiple regressions. The factor analysis was done to test the construct validity. The questionnaire was considered as valid if the factor analysis shows: (1) Kaiser Meyer Olkin (KMO) value $\geqslant 0.5$; (2) Measure of Sampling Adequacy (MSA) for each indicator ≥ 0.5; and (3) Factor loading value for each indicator $\geqslant 0.5$. Cronbach's Alpha was used to test the questionnaire's reliability. The questionnaire was deemed as reliable is the value for each variable is higher than 0.6. The multiple regressions were done to test the hypothesis. A hypothesis is accepted if the t-test for each variable is more than 1.96 (5% error margin). This research utilized SPSS

4. Result and discussion

4.1. Validity Test

Based on the factor analysis, this study found that the instrument was valid. The indicators were suitable to measure attitude, subjective norm, perceived behavioral control, and purchase intention. Based on the factor analysis of each variable, it was found that (1) Kaiser Meyer Olkin (KMO) value $\geqslant 0.5$; (2) Measure of Sampling

Adequacy (MSA) for each indicator ≥ 0.5; and (3) Factor loading value for each indicator ⩾ 0.5. The result can be seen in Table 3.

4.2. Reliability Test

Based on the Cronbach's Alpha analysis, the result showed all variables have alpha values above 0.6. This means the instrument of this study was reliable. In other word, the questionnaire was deemed as consistent in measuring those four variables. The results of reliability test can be seen in Table 4.

Table 3. The result of the validity test

Variables (Indicators)	KMO	% Eigenvalue	MSA	Factor Loading
Attitude	0.760*	67.475		
AT1			0.792	0.856
AT2			0.741	0.787
AT3			0.751	0.876
AT4			0.755	0.761
Subjective Norm	0.694*	74.766		
SN1			0.758	0.830
SN2			0.645	0.904
SN3			0.704	0.859
PBC	0.740*	54.952		
PBC1			0.788	0.704
PBC2			0.704	0.796
PBC3			0.804	0.668
PBC4			0.710	0.790
Purchase Intention	0.705*	75.196		
PI1			0.700	0.871
PI2			0.661	0.898
PI3			0.777	0.832

Table 4. The result of the reliability test

Variables	Cronbach Alpha
Attitude	0.839
Subjective Norm	0.831
PBC	0.724
Purchase Intention	0.833

4.3. Hypothesis Testing

The result of the hypothesis testing can be seen in Table 5. Hypothesis 1 (H1) and Hypothesis 2 (H2) were accepted. Attitude and subjective norm were positively and significantly affected repurchase intention in the context of a younger generation that consumed functional foods. Based on the multiple regressions, the t-tests of H1 and H2 showed values higher than 1.96 (alpha= 5%). The unstandardized coefficients beta for attitude was 0.466 and 0.222 for subjective norm. This research also shows that PBC has no significant impact on repurchase intention. The t-test was below 1.96 (alpha= 5%). Overall, the multiple regressions' R^2 was 38.8 percent. In other words, 38.8 percent of the variance in purchase intention was explained by the independent variables proposed in the model.

4.4. Discussion and Implications

Purchase intention was an important factor explaining why consumers were willing to purchased functional foods. Consumers would not want to buy functional food products because they had low purchase intentions. This research found that the younger generation's purchase intention to buy

functional foods was significantly influenced by attitude and subjective norm. On the other hands, the result also stated that PBC did not significantly affect purchase intention.

The effect of attitude on purchase intention was supported by previous studies [27, 28, 35]. The effect of subjective norm on purchase intention was also backed by previous findings [35, 40]. The non-significant effect of PBC no purchase intention was not new. Several previous studies also found that purchase intention was not influenced by PBC [27, 28, 40, 44].

Table 5. The result of the hypothesis test

Independent Variables	Unstandardized Coefficients Beta	t-test	Sig.	Hypothesis
Attitude	0.466	5.429	0.000	Accepted
Subjective Norm	0.222	2.725	0.007	Accepted
PBC	0.048	0.624	0.534	Rejected

Based on that result, this research created several implications. First, it was important to stimulate consumers so that they have a positive attitude towards functional foods. The younger generation might not know the benefit of functional food. Therefore, the producers must educate young consumers on the health benefits of functional foods. This type of food does not only fill the belly but also provides health benefits. The image of functional food as a healthier choice must be embedded in the mind of the younger generation. Second, in promoting and educating consumers, producers could use important public figures to affect the younger generation's perception so that they would be willing to consume functional food. The public figure chosen must be the one that represented a healthy lifestyle. Furthermore, producers should position functional foods as family foods. Family members can influence each other in consuming functional foods.

5. Conclusion

This research has tested TPB in explaining the purchase intention of the young generation to buy functional foods. This study showed that the instrument to measure attitude, subjective norm, PBC and purchase intention was valid and reliable. In addition, this research has empirically proven that purchase intention was only influenced by attitude and subjective norm. Attitude has the most significant impact on purchase intention.

Even though this research has generated important findings on the young generation's behavior related to the consumption of functional foods, there were still several limitations. First, the sample was only taken from one location, in a university. The result of this research cannot be widely generalized to the young generation. Second, the object of this research was limited to functional foods that prevent hypertension. There was a chance of different results if the objects were altered. Third, the research only used variables offered by TPB while there are other theories that can explain consumers' behavior. The result did show that 61.2 percent of variance in purchase intention was explained by other independent variables. The limitations of this research can be used as considerations for future studies.

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