

## Collaborative Marketing: A Study to Increase Indonesian Fish Consumption

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### ABSTRACT

Even though Indonesia, as a maritime country, has high potency in fish production, its consumption is still very low. Different from Singapore and Malaysia which have high fish consumption level in 70 to 80 kg per capita per year. Fish consumption can be caused by several factors such as fish attributes (taste, appearance, odor, and price), consumer awareness, subjective norms, and consumption intention. The effect of these variables on consumption intention and consumption behavior is the primary focus of this paper. By using the method of distributing questionnaires to 400 respondents around Bandung Raya. The results show that there is an influence between two dimensions of the fish attributes, namely taste and odor, and also consumer awareness and subjective norms variable to consumption intention and behavior. Based on the findings, the results of this study explain the variables that affect the consumption intention and behavior, also its implication in Indonesia.

### Keywords

*Fish Attribute, Consumer Awareness, Subjective Norm, Intention, Behavior*

### 1. BACKGROUND

As a maritime country, Indonesia has a great potency in the marine sector. In fact, according to Ministry of Marine Affairs and Fisheries, Indonesia is known as one of the fisheries world paradises. The Food and Agriculture Organization (FAO) explains that Indonesia produces 6 million tons of fisheries by 2014. It makes Indonesia becomes the second largest fish producer under China with production reaching 14 million tons by 2014. However, behind the very high production, fish consumption in Indonesia is still relatively low. Secretary-General of the Ministry of Marine Affairs and Fisheries said "Indonesia consumes only 41 kg per capita per year, which is relatively lower than Singapore 80 kg per capita per year, Malaysia 70 kilograms per capita per year and Japan nearly 100 kg per capita per year.

Whereas, fish is one food that has a reasonably complete nutritional composition [1]. Fish are rich in nutrients mainly protein, minerals and fats, as well as the largest producers of polyunsaturated fatty acids (PUFA), especially eicosapentaenoic (EPA) and docosahexaenoic (DHA), which are

beneficial to health [2]. Thus, consuming fish 1-2 times per week, especially fish containing high EPA and DHA can reduce the risk of heart disease until 36% [3]. Moreover, the essential fatty acids are indispensable in the formation of brain cells to increase the level of intelligence [4]. Apart from fish is relatively cheaper than beef and chicken, fish protein absorption is higher than other animal products such as beef and chicken because fish has shorter protein fibers than beef or chicken protein fibers [1].

Since fish contain many benefits and the consumption is very low, the Indonesian government, through the National Coordination Meeting conducted by the Ministry of Marine Affairs and Fisheries, even supports and emphasizes the importance of eating fish. One form of the government's efforts is by performing a program of *Gerakan Memasyarakatkan Makan Ikan* or abbreviated as GEMARIKAN for the movement of the fish-loving campaign. In addition, *Forum Peningkatan Konsumsi Ikan Nasional* (FORIKAN) is established in every province in Indonesia as one of the provincial unit institutions

supporting the program of GEMARIKAN itself. For these reasons, research to explore causes that induce low fish consumption is necessarily needed. The objective of this study is to examine and discuss the association between independent and dependent variables. Independent variables used in this study are the fish attribute, consumer awareness, and subjective norm. Fish attribute itself is divided into four dimensions, namely taste, appearance, odor, and price. Those variables will be measured to identify factors that have a significant association with fish consumption intention and behavior as the dependent variable. Also, the influence of consumption intention on consumption behavior itself will also be measured. Thereafter, further discussion about the factors improvement to increase Indonesian fish consumption and its implication will also be undertaken.

## 2. LITERATURE REVIEW

In trying to understand food consumption behavior, the Theory of Planned Behavior (TPB) [5], is a model that has frequently been used to explain consumer choices. This theory reveals that consumption behavior is primarily influenced by consumption intention, which is shaped by consumers' attitudes, subjective norms (i.e., influences from individual's social environment), and perceived behavioral control which is related to consumer awareness. Besides, the intention of eating healthy foods is an important factor in explaining the frequency of consuming fish [6]. The pattern of fish consumption is also influenced by several factors such as taste, price, appearance, and odor as fish attributes [7, 8]. So, the variables used in this study are fish attributes, consumer awareness, subjective norm, and consumption intention.

### 2.1 Fish Attribute

Product attribute is a component that is the nature of the product that ensures that the product can meet needs and desires expected by the buyer [9, 10]. Product attributes can be tangible or intangible, and those are elements of products that are considered important by consumers as the basis for making purchasing decisions [11]. Based on these notions, it can be concluded that attributes are important factors that can affect consumer's intention or behavior in consuming. It happens because the quality characteristics of a product that consumers want can be obtained through the assessment of consumer behavior based on the concept of product attribute concept [12].

Attributes in fish products include taste, appearance, odor, and price [7, 8]. The taste of food is affected by the components contained in foods such as proteins, fats, and carbohydrates. Food with high protein content is excellent in consumption as in fish that also has saturated fat with healthy fish oil content. Moreover, functional characteristics of protein from food affect the quality of a food product [13]. Although demand for fish consumption increases with regard to health benefits, fish consumption also still has some barriers such as high prices, lack of product standardization, and quality control issues in the production chain. It is important to consider that in the study of the perception of fish consumption in regions where fish have a high price, this attribute becomes a limiting factor for consumption [8]. Research has shed light on consumer's motives and barriers to fish consumption, and the price is the most important factor [6]. Appearance attributes in food are particularly important in allowing consumers to categorize a product as familiar or unfamiliar, normal or abnormal, and desirable or undesirable. The appearance of food that is interesting when presented will stimulate the senses associated with the taste of food that is primarily the sense of sight [7]. A study on consumer attitudes conducted in Italy has reported that consumers decide which fish to buy based on its appearance, odor, a point of sale hygiene and geographic origin [14].

### 2.2 Consumer Awareness

To increase consumption, increasing consumer awareness becomes the main focus. Consumer awareness is an affiliation by the range of which awareness consumers to their responsibilities and appropriate in the marketplace. This theory is also supported by literature that mentions consumer awareness means building awareness of a consumer against their responsibilities and appropriate [15]. Consumer awareness can be affected by the surrounding environment [16]. So, the consumer's environment will influence behavior in consumer awareness, because an existing environment increases the desire of consumers to want to have what is perceived as a consideration to adjust from what is around it. Besides, consumer awareness also affects their consumption intention, because consumer's knowledge will build their awareness that leads to an intention to consume [17].

### 2.3 Subjective Norm

Subjective norm is the perceived social pressure as a motivation to follow the views of others or to conduct specific behavior [5, 18]. Subjective norm relates to theories proposed by Martin Fishbein and

Ajzen of Theory of Reasoned Action, which describe beliefs, attitude, intention, and behavior. Where attention is focused is when considering the interests of a thing as well as subjective attitudes and norms that become the determination of the will or intention [19]. Also, one of the things that influence behavior other than the attitude specifically to something is the subjective norms themselves. In other words, the subjective norm will give a belief to someone which is somebody else influences by other people or external factors, that will encourage or prevent behavior that will be done [20]. So, it can be said if the subjective norm has a role in shaping one's behavior including regarding consuming fish.

## 2.4 Consumption Intention

Consumption intention is a situation where a person wants or desire to buy some products implicitly or explicitly that leads to a behavior that is expected to be done [21, 22]. Also, behavioral intention is determined by attitudes, subjective norms and conscious behavior control [23]. Further, it is stated that consumption intention influences consumer buying behavior. This is supported in a study by Fishbein and Ajzen which states that individual behavior is based on consumption intention by putting forward the pattern of rational behavior [24]. In addition, the stronger intention of a person to display certain behavior, it influences more likely the behavior that will be done [25]. It supports consumer consumption patterns on goods and services, including in terms of consuming fish. If the intention of fish consumption in a person is very strong, the behavior to consume fish will be very possible to do.

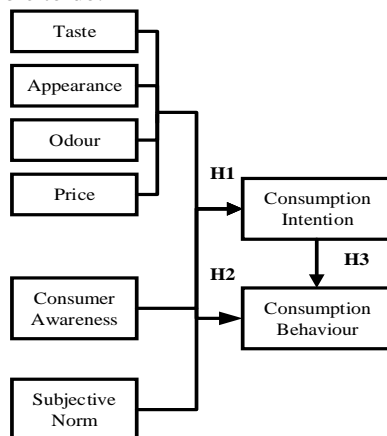


Figure 1. Research Model

**Hypothesis 1.** Taste, appearance, odor, price, consumer awareness, and subjective norm have a positive and significant effect on consumption intention.

**Hypothesis 2.** Taste, appearance, odor, price, consumer awareness, and subjective norm have a positive and significant effect on consumption behavior.

**Hypothesis 3.** Consumption intention has a positive and significant effect on consumption behavior.

## 3. RESEARCH METHOD

Research design which is suitable for the topic of this study is causal. The design is a method for collecting and processing data to help the researcher understand the correlation between variables [26]. Quantitative data is the data that is used in this study. Moreover, the data collected are primary data obtained directly through questionnaires distributed to 400 respondents who are divided into four classifications based on age. The first is children who are less than 12 years old. The second classification is teenagers with an age range of 12-25 years old. The third are adults with an age range of 26-45 years old. Lastly, there are the elderly who are more than 45 years old. After collecting the data, the next step is calculating and analyzing the data by using SPSS. The method for this calculation is regression analysis to know the correlation between independent variables and dependent variable [27].

## 4. DATA ANALYSIS

The result of data analysis will be explained in this section. Researchers use data obtained from 400 respondents classified into 183 men and 217 women by distributing a questionnaire in Bandung. Details of respondent data are shown in Table 1 below.

Table 1. Descriptive Analysis

Variable	Description	Frequency	%
<b>Gender</b>	Male	183	45.8
	Female	217	54.3
<b>Age</b>	< 12 years	6	1.5
	12-25 years	289	72.3
	26-45 years	64	16.0
	> 45 years	41	10.3
<b>Education</b>	Primary school	10	2.5
	Junior high school	11	2.8
	Senior high school	207	51.7
	College	172	43.0
<b>Occupation</b>	Civil servant	24	6.0
	Private employees	102	25.5
	Entrepreneur	26	6.5
	Student	228	57.0
	Others	20	5.0
<b>Income</b>	< 1,000,000 IDR	167	41.8
	1,000,000 - 2,500,000 IDR	85	21.3
	2,500,000 - 5,000,000 IDR	88	22.0
	5,000,000 - 10,000,000 IDR	60	15.0
	> 10,000,000 IDR	60	15.0

Table 2. Hypothesis Test 1

Variable/Dimension	Pearson Correlation	Significant Value
Taste	0.650	0.000*
Appearance	0.500	0.106
Odor	0.606	0.000*
Price	0.332	0.943
Consumer Awareness	0.471	0.023*
Subjective Norm	0.394	0.000*

From the data analysis of **Hypothesis 1** in Table 2, it results that appearance has Pearson correlation value of 0.500 and significant value of 0.106 ( $p > 0.05$ ). Price has Pearson correlation value of 0.332 and significant value of 0.943 ( $p > 0.05$ ). It means that appearance and price do not have a positive and significant effect on consumption intention. Meanwhile, the Pearson correlation value of taste is 0.650 with the significant value of 0.000 ( $p < 0.05$ ). Odor has Pearson correlation value of 0.606 and significant value of 0.000 ( $p < 0.05$ ). Consumer awareness has Pearson correlation value of 0.471 and significant value of 0.023 ( $p < 0.05$ ). Lastly, the Pearson correlation value of subjective norm is 0.394 with significant value of 0.000 ( $p < 0.05$ ). Therefore, it shows that factors which have a positive and significant effect on consumption intention are taste, odor, consumer awareness, and subjective norm.

Tabel 3. Hypothesis Test 2

Variable/Dimension	Pearson Correlation	Significant Value
Taste	0.681	0.000*
Appearance	0.520	0.384
Odor	0.703	0.000*
Price	0.329	0.680
Consumer Awareness	0.348	0.011*
Subjective Norm	0.344	0.000*

From the data analysis of **Hypothesis 2** in Table 3, it results that appearance has Pearson correlation value of 0.520 and significant value of 0.384 ( $p > 0.05$ ). Price has Pearson correlation value of 0.329 and significant value of 0.680 ( $p > 0.05$ ). It means that appearance and price do not have a positive and significant effect on consumption behavior. Meanwhile, the Pearson correlation value of taste is 0.681 with the significant value of 0.000 ( $p < 0.05$ ). Odor has Pearson correlation value of 0.703 and significant value of 0.000 ( $p < 0.05$ ). Consumer awareness has Pearson correlation value of 0.348 and significant value of 0.011 ( $p < 0.05$ ). Lastly, the Pearson correlation value of subjective norm is 0.344 with significant value of 0.000 ( $p < 0.05$ ). Therefore, it shows that factors which have a

positive and significant effect on consumption behavior are taste, odor, consumer awareness, and subjective norm.

Table 4. Hypothesis Test 3

Variable	Pearson Correlation	Significant Value
Consumption Intention	0.776	0.000*

From the data analysis of **Hypothesis 3** in Table 4, it results that consumption intention has the Pearson correlation value of 0.776 with the significant value of 0.000 ( $p < 0.05$ ). It means that consumption intention has a positive and significant effect on consumption behavior.

## 5. DISCUSSION

This study reveals that taste and odor significantly affect consumption intention and consumption behavior. Literatures have shown that taste and odor are the most important sensory qualities in explaining consumers' attitude toward fish product [28, 29]. Similarly, the result of this study also indicates that taste and odor have the highest Pearson correlation value which means that taste and odor are the most influential factor in consumption intention and behavior. It happens because a person accustomed to the odor and taste of fish will tend to have higher levels of fish consumption [30]. However, the other dimension of the fish attributes such as appearance and price, do not have a significant effect on consumption intention and behavior. Research conducted in Sweden shows that the appearance is less important as an indicator of food quality and less relevant to food purchase decisions [31]. It happens because consumers tend to see fish quality from other product attributes, such as taste and odor. In addition, there is the type of consumer namely "economical mother" which assumes that the appearance of food is not a priority but the nutrition contained is more important [32]. Similarly, consumers do not consider the price as a factor in their consumption intention and behavior, because a routine requirement for sufficient appetite and nutritional intake contained are the reason for their consumption [33]. Moreover, a study about fish consumption in Yogyakarta indicates that the consumers are not price sensitive because they already have an understanding of health and healthy food [34]. Therefore, consumers are willing to pay more to get healthy and high-quality food.

Along with taste and odor, consumer awareness also indicates a significant effect on consumption



intention and behavior. This consumer awareness of fish consumption is connected to the pattern of healthy food consumption. The interest in consuming healthy foods and health involvement has a direct positive effect on total fish consumption because respondents feel healthy if they eat fish [34]. It is related to the price issue that consumption intention and behavior are caused by the consumers' level of understanding about health. Therefore, it indicates that respondents in Bandung are aware of consuming healthy food.

Correspondingly, subjective norm significantly affects consumption intention and behavior. It happens because a person will feel that he has a personal right to determine what he will do, includes what is determined by others around him. In such circumstances, a person will know the views of others whether his behavior is appropriate or not, so that will cause the intention to perform a behavior [5]. For instance, parents who can pay attention to the dietary habit of their children, it can control and advise what foods should be consumed and what foods should be avoided [35]. Also, friends have a role in providing recommendations for the food to eat. So, food selection is no longer based on nutritional content, but for socializing, enjoyment, and not to lose the status of a friend [35]. It indicates that respondents in Bandung are influenced by subjective norm to determine whether they want to consume fish.

Consumption behavior is also affected significantly by consumption intention. It happens because one's actions are the realization of one's desire or intention to act [5]. Then, a particular behavior displays the strength of intention to perform that behavior [36]. Therefore, this study ascertains the relationship between intention and behavior in the context of fish consumption.

## 6. IMPLICATION

As a maritime country, Indonesia has a high level of production in the fisheries sector. However, in Indonesia, the level of fish consumption is still low compared with Japan. Japanese society has a very high level of fish consumption because they are fond of consuming fish, mainly marine fish. From this case, Minister of Marine Affairs and Fisheries, Susi Pudjiastuti ambition to increase fish consumption with GEMARIKAN program. In addition to inviting the people of Indonesia to like to consume fish, the participation of all parties such as fishermen, fish suppliers, and traders is needed to succeed in the program. The reason is Indonesian society needs more fish supply as an alternative to the consumption of animal protein at

affordable prices. Minister Susi urged that fish-eating campaign continue to be encouraged through bazaar or competitive fish market, so that the people of Indonesia will be familiar with the fish consumption.

In terms of helping to make the GEMARIKAN campaign successful, collaborative marketing also needs to be well established, so that the level of fish consumption in Indonesia increases according to the desired target. In this digital era, the proper collaborative marketing is to create an all in one mobile application about fish culinary. In this collaborative marketing, fish marketing is formed with the help of various sectors such as application developer and culinary influencer. With the feature of *Info Ikan* in this application, Indonesian society will be more comfortable to get information on details of the content contained from various types of fish, various benefits of fish, and also the dishes. By providing these information, it will expand the consumer awareness of Indonesian society. Moreover, another presented feature such as *Masak Ikan* is expected to influence the taste and odor variable. This feature will provide the recipes to cook various of fish. Then, it will give an understanding to Indonesian society that taste and odor of fish depend on the way it cooked. Further, some influencers will also enliven this application in reviewing the benefits of consuming fish or the dishes. Through this review feature, the influencer could give recommendation that will affect on subjective norm variable. Thus, it will encourage Indonesian people to love to consume fish.

With the creation of successful collaborative marketing, it will enable to increase fish consumption in Indonesia. The existence of this media application will help the Indonesian people easier to access information about fish and will encourage them to get used to consuming fish.

## 7. CONCLUSION & FUTURE RESEARCH

The result of this research shows the dimension of a fish attribute, that is the appearance and price, do not have a significant effect on the fish consumption intention and behavior. However, other dimensions of taste and odor have a significant influence on consumption intention and consumption behavior, as well as consumer awareness and subjective norms. The results of this study come from data collection methods with an online questionnaire spread around Bandung Raya. In addition, there are supporting data from the Ministry of Marine Affairs and Fisheries of the Republic of Indonesia regarding the behavior of fish consumption in Indonesia. Low fish

consumption data in Indonesia compared to Singapore and Malaysia become the focus of this research. Both fish attribute dimensions (taste and odor), consumer awareness and subjective norms, have an important role in influencing a person to consume fish. It is because a person's behavior in eating fish is based on self-awareness formed by self-evaluation. The self-evaluation can come from one's knowledge of the importance of eating fish and recommendations from the nearest person.

In further research, particular research is needed to understand other factors that lead to lower fish consumption through more specific data collection. As using the method of interviews and focus group discussion that makes researchers know things that affect the consumption of fish in more detail. Caused by the different tastes of each person, therefore providing more specific solutions tailored to the needs and desires of an individual. In addition, the movement of fish consumption needs to be more disseminated to all levels of society.

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