

## Original Research Article

# Analysis of Consumer Preferences in Selecting Processed Fish Products (Case Study in Bendungan Hilir Market, Central Jakarta, Indonesia)

### ABSTRACT

At the moment, there has been minimal research on consumer preferences for purchasing processed fish products, with this study aiming to discover how consumer behavior affects the purchasing decision towards processed fish products. The purpose of this study is to examine processed fish products that are popular among Jakarta Indonesia consumers, as well as the factors that influence their purchasing decisions at Bendungan Hilir Market in Central Jakarta. The study used the method of descriptive analysis by observing Packaging color, type of packaging, product color, taste, and price. Validity and reliability tests were performed on the questionnaire. The characteristics of respondents and consumer behavior were analyzed descriptively, while the preferences of processed fish products, such as fish balls, jambal salted fish, shredded fish, fish nuggets, fish cake, and attributes in processed fish products that consumers will consider when purchasing processed fish products, were analyzed using Chi-Square. According to the findings, the processed fish product that became the consumer's favorite at the Bendungan Hilir Market was fish cake. Many of the factors that influenced the purchasing decision included the color of the white packaging, the color of the natural product, and the type of plastic packaging, but the most important factor in selecting products for fish balls, jambal salted fish, shredded fish, fish nuggets, and fish cake was the original taste. Fish balls and fish cake are priced between Rp. 15,000 and Rp. 20,000, while jambal salted fish, shredded fish, and fish nuggets are priced above Rp. 20,000.

*Keywords: Attributes, Consumers, Preferences, Fish Products.*

### 1. INTRODUCTION

Consumers often choose a product because it has a reasonable price, or an attractive, efficient pack of packaging, or the fresh color of the product. Processed products such a fish balls, jambal salted fish, shredded Fish, fish nuggets, and fish cake have the considerations are used in buying and selecting fisheries products. Whether visual factors (the type of packaging, the color packaging, and the color of the product) or other factors such as price and taste. Based on these factors, there are some of the most important factors in the purchase of fisheries processed products [1].

In 2018 it is known that Jakarta population consumes roughly 42.98 kg of fish / year. The rate of consumption increased from 2017-2018, with an average of 8.71 kg per capita/ year, but it has not yet reached the expected target of 54 kg per capita/ year [2]. The Jakarta government is holding a campaign like to eat fish that aims to increase its consumption preference.

Consumer preference can be a solution to choose from a person's interest to express likes or dislikes toward a product [3]. Consumer preference of processed fish products is met with an alternative evaluation of the decision-making process at the time of purchase, where the consumer is faced with different attributes [4]. Each consumer can evaluate goods and services that would like to purchase by scoring the various products chosen [5]. Consumer preference appears in the stage of alternative evaluations in the purchasing process, in which the consumer is faces wide range of product and service options. It is directly proportional to the concept that states that a product at interest will give more satisfaction than a product less desirable. Consumer preferences must be studied because they serve as a guide in determining the characteristics of processed fish products in terms of packaging, types of processed fish, and prices. This encourages researchers to analyze the characteristics of processed fish products that are of interest in the Bendungan Hilir Market in Central Jakarta City, Indonesia.

## **2. RESEARCH METHODOLOGY**

The research carried out at the Bendungan Hilir Market, Central Jakarta City, Indonesia between July and August 2021. The case study method was applied (case study). Primary data and secondary data are the main sources of data. Interviews with respondents who buy processed fish products at Bendungan Hilir Market in Central Jakarta City, Indonesia, yielded primary data. Secondary data for this research comes from research reports from an agency, library materials, and the Central Bureau of Statistics.

In this study, random sampling was used as a sampling technique. This study included 30 respondents who were consumers of processed fish products in Bendungan Hilir Market in Central Jakarta, Indonesia. Product samples to be used are fish meatballs, jambal salted fish, shredded fish, fish nugget and fish cake

### **2.1 Data Analysis**

Descriptive statistics and Chi-square test were used to analyze the data.

#### **2.1.1 Validity Analysis**

The validity test determines whether or not the instrument used to collect data in the study can be used. In this research, the instrument's validity was determined to see if the measuring instrument, which was designed in the form of a questionnaire, could perform its function. The validity test uses a statistical approach, specifically comparing the correlation coefficient value of the statement item score to the total score of the stated item, if the correlation coefficient is greater than or equal to 0.30, the statement is declared valid.

#### **2.1.2 Reliability Analysis**

The reliability test was carried out according to Sugiyono [6] to see how consistent the results were if measurements were taken twice or more for the same cases using the same measuring device. The author assesses the reliability of each instrument using the Cronbach alpha coefficient and the Statistical Product and Service Solution (SPSS) for interval measurement. If the Cronbach alpha value exceeds the specified limit of 0.6 or the calculated correlation value exceeds the value in the table, the instrument is said to be reliable.

#### **2.1.3 Consumer Preferences Analysis**

A Likert Scale is a method for analyzing consumer preferences. The scale would be used to collect research data. A Likert scale is used to assess a person's behavior, opinions, and perceptions of social phenomena. Behaviour scale is a type of scale used to assess a person's behaviour towards a specific object. The responses to every instrument item in the form of words, with gradations ranging from very positive to very negative. Liker scales used to measure consumer behaviour include five assessment points, with Strongly Agree Answer receiving a score of 5, Agree to Answer receiving a score of 4, Doubtful Answer receiving a score of 3, Answer Disagree receiving a score of 2, and Very Disagree Receiving a score of 1.

The research presented was acquired using a questionnaire data collecting approach, for example, the instrument was supplied to respondents with a certain quantity, and an analysis was done by categorizing respondents based on their behavior assessment score. These statistics are used to compute the number of persons who agree and strongly agree. The responses that were given the most often by respondents will be displayed in the results. The interval data may also be evaluated by computing the average answer for each response depending on the respondent's score.

#### **2.1.4 Analysis of Fish Product Attributes**

The Chi Square test was used to analyze the characteristics of processed fish products. According to Sugiyono [7] Chi Square is a statistical technique for testing hypotheses when a population consists of two or more attributes of Bendungan Hilir and the data is nominal and the sample size is large.

$$\chi^2 = \sum_{i=1}^k \left( \frac{f_o - f_h}{f_h} \right)^2$$

Notes:

$\chi^2$  : Chi Square

$f_o$  : Frequency observed in research

$f_h$  : Frequency expected in research

$k$  : The attribute category in the processed fish product variable in Market

Where:

$$f_h = \frac{n}{k}$$

Notes:

$N$  : Number of people that responded

$K$  : The attribute category in the processed fish product variable in Market

$H_o$  : There is no difference in consumer preferences for the attributes of processed fish products

$H_a$  : There are differences in consumer preferences for the attributes that exist in processed fish products

95 percent confidence level testing with the following testing criteria:

$H_o$  is rejected if  $\chi^2 \text{ count} > \chi^2 \text{ table}$

$H_o$  is accepted if  $\chi^2 \text{ count} \leq \chi^2 \text{ table}$

### 3. RESULTS AND DISCUSSIONS

In this research, consumers are individuals who buy processed fish items at Bendungan Hilir Market in Central Jakarta, Indonesia. General consumer variables such as gender, age, education level, occupation, income, and family size were included in the questionnaire forms to 30 respondents.

#### 3.1 Gender

Consumer characteristics are divided into two groups based on gender: male and female. Table 1 shows the characteristics of consumers by gender.

**Table 1. Consumer characteristics by gender**

No	Gender	People	Percentage (%)
1	Male	3	10
2	Female	27	90
	Total	30	100

According to the results, women are interested in 90 percent of processed fish product consumers, while male consumers are interested in 10 percent. This could be because women are in charge of determining the household's meal needs.

#### 3.2 Ages

In this survey, the age group was divided into four classes with a 10 year age difference. Consumers buying fish processed products in Jakarta City's Bendungan Hilir Traditional Market range in age from 17 - 26, 27 - 36, 37 - 46, and >47. (Table 2).

**Table 2. Consumer characteristics by ages**

No	Ages	People	Percentage (%)
1	17-26	1	3.3
2	27-36	4	13.3
3	37-46	11	36.7
4	>47	14	46.7
	Total	30	100

According to the research results, the youngest consumers range in age from 17 - 26 years, is 3.3% of the overall. The age group 27-36 years accounts for 13.3%, while the age group 37-46 years is 36.7%. The age group of respondents over 47 years old is the most dominant as consumers when it comes to choosing processed fish products. Respondents over the age of 60 consume less food because they are more careful in choosing and consuming food at this age, choosing foods made from vegetables.

### 3.3 Education Level

The level of education a person must have affects their choice and consumption patterns. A person's level of education will also influence their way of thinking and even how they recognize a problem [8]. In this study, the level of education was divided into four categories: high school, diploma, undergraduate degree, and master's degree. (Table 3).

**Table 3. Consumer characteristics by education level**

No	Education Level	People	Percentage (%)
1	Senior High School	2	6.7
2	Diploma	5	16.7
3	Undergraduate Degree	19	63.3
4	Master Degree	4	13.3
	Total	30	100

Table 3 shows that most respondents (63.7%) came from undergraduate backgrounds, while the least respondents came from an senior high school background (6.7%).

### 3.4 Income Level

Sumardi asserts that income is the sum of all family members' contributions to meet the needs of the family and individuals [9]. Table 4 shows how consumer income for processed fish products is divided into three groups.

**Table 4. Consumer characteristic by income level**

No	Income	People	Percentage (%)
1	1,000,000-2,000,000	1	3.3
2	2,000.000-3,000,000	2	6.7
3	>4,000,000	27	90
	Total	30	100

According to Table 4, 90 percent of Central Jakarta Citizens have the greatest possible income level (> Rp. 4,000,000), and the lowest (3.3 percent) income level (Rp. 1,000,000).

### 3.5 Occupations

According to consumer research, employment is the strongest single factor of social class. Consumers' work impacts their way of life (Table 5).

**Table 5. Consumer characteristics based on occupation**

No	Occupations	People	Percentage (%)
1	Government Employees	1	3.3
2	Doctor	1	3.3
3	Entrepreneur	6	20

4	Housewives	7	23.3
5	Private Employees	15	50
	Total	30	100

The percentage population of the city of Central Jakarta according to the type of work shows that Private Employees have the highest percentage, (50%) and the lowest percentage of the population is the Government Employees and Doctor is 3.3% (Table 5).

### 3.6 The Number of Family Members

The number of family members has a significant effect on customers' decisions to purchase processed fish products. (Table 6).

**Table 6. Consumer characteristics by the number of family members**

No	Number of family members	People	Percentage (%)
1	2 members	1	3.3
2	3 members	3	10
3	4 members	16	53.3
4	5 members	8	26.7
5	6 members	2	6.7
	Total	30	100

Consumers of processed fish products in Central Jakarta City come from a wide range of family backgrounds (Table 6). It can be observed that households with four people have the largest proportion (53.3 %), while families with two members have the lowest rate (3.3 %).

### 3.7 Consumer Behaviour

Consumer buying behaviour with reference to purchasing processed fishery products is described as the act of directly involved, seeking, obtaining, eating, and spending processed fishery products. Respondents are used as research material in studies of processed fish product marketers because marketing have a duty to understand the respondent, how the respondent's tastes differ, and how the respondent decides to buy processed fish goods. Understanding respondents will bring marketers to the proper and effective marketing policies, therefore studying customer behavior is critical.

### 3.8 Consumer Preference

Consumer preference for processed fisheries goods refers to whether or not a person prefers to eat processed fishery products (Table 7).

**Table 7. Behaviour measurement scale towards processed fish products**

Product	Very dislike (1-30)	Dislike (31-60)	Normal (61-90)	Like (91-120)	Really like (121-150)
Fish Ball				109	
Jambal Salted Fish				98	
Shredded Fish				107	
Fish Nuggets				100	
Fish Cake					140

Table 7 shows that the most consumers like processed fish products in the form of fish cake. According to the results of the calculation of the value of the behavior calculation scale, how many tuna fish were obtained in the range of 140, while fish meatballs were obtained in the range of 109, jambal salted fish in the range of 98, shredded fish in the range of 107, and fish nuggets were obtained in the range of 100. Because this product is available, consumers prefer processed fish products in the form of fish cake.

### 3.9 Test Validity and Reliability

Tables 8 and 9 show the results of the validity and reliability testing of customer preferences for all items.

**Table 8. Validity test result of all products**

Product	Preference	Validity
Fish Balls	The package colour	0.721
	The product colour	0.801
	The kind of package	0.886
	Flavour	0.862
	Price	0.623
Jambal Salted Fish	The package colour	0.878
	The product colour	0.905
	The kind of package	0.794
	Flavour	0.886
	Price	0.91
Shredded Fish	The package colour	0.81
	The product colour	0.866
	The kind of package	0.836
	Flavour	0.906
	Price	0.875
Fish Nuggets	The package colour	0.919
	The product colour	0.959
	The kind of package	0.977
	Flavour	0.926
	Price	0.838
Fish Cake	The package colour	0.888
	The product colour	0.93
	The kind of package	0.927
	Flavour	0.881
	Price	0.847

Because the validity value of each product attribute is more than 0.3, the validity value of each attribute is declared valid (Table 8). The validity test results are consistent with According to Sugiyono [6] if the correlation coefficient is larger than or equal to 0.30, the statement is valid. Table 9 shows the results of the Reliability all products test.

**Table 9. Validity test results of all products**

Product	Cronbach's Alpha	Items Total
Fish Balls	0.839	5
Jambal Salted Fish	0.922	5
Shredded Fish	0.910	5
Fish Nuggets	0.956	5
Fish Cake	0.937	5

According to Sugiyono [6] a research is considered valid if the Cronbach's Alpha value is higher than

0.6, meaning that customer preference data for all items is reliable. As a result, the data shown above is consistent and reliable.

### 3.10 Test Chi Square

Table 10 shows the result of the chi square tests of consumer preferences for all items.

**Table 10. Chi square test analysis of considered attributes of all products**

Product	Attributes	fo	fh	fo-fh	(fo-fh) <sup>2</sup>	X <sup>2</sup>
Fish Balls	The package colour	-	-	-	-	-
	The product colour	2	7.5	-5.5	30.25	4.03333
	The kind of package	4	7.5	-3.5	12.25	1.63333
	Flavour	22	7.5	14.5	210.25	28.0333
	Price	2	7.5	-5.5	30.25	4.03333
	Total	30	30	-	-	37.7333
Jambal Salted Fish	The package colour	-	-	-	-	-
	The product colour	10	7.5	2.5	6.25	0.83333
	The kind of package	1	7.5	-6.5	42.25	5.63333
	Flavour	17	7.5	9.5	90.25	12.0333
	Price	2	7.5	-5.5	30.25	4.03333
	Total	30	30	-	-	22.5333
Shredded Fish	The package colour	2	7.5	-5.5	30.25	4.03333
	The product colour	2	7.5	-5.5	30.25	4.03333
	The kind of package	2	7.5	-5.5	30.25	4.03333
	Flavour	23	7.5	15.5	240.25	32.0333
	Price	1	7.5	-6.5	42.25	5.63333
	Total	30	30	-	-	45.7333
Fish Nuggets	The package colour	2	7.5	-5.5	30.25	4.03333
	The product colour	-	-	-	-	-
	The kind of package	1	7.5	-6.5	42.25	5.63333
	Flavour	22	7.5	14.5	210.25	28.0333
	Price	5	7.5	-2.5	6.25	0.83333
	Total	30	30	-	-	34.5
Fish Cake	The package colour	2	15	-13	169	11.2667
	The product colour	-	-	-	-	-
	The kind of package	-	-	-	-	-
	Flavour	28	15	13	169	11.2667
	Price	-	-	-	-	-
	Total	30	30	-	-	11.2667

Based on the chi-square calculation results in Table 16. It shows that the total of all chi-square products has a value. Based on  $df = 4$  with an error of 5%, the square table value of 9.49 can be obtained. Each attribute of the entire processed product was found to be significantly different with a 95% level of confidence, implying that the null hypothesis ( $H_0$ ) is rejected and the alternative hypothesis ( $H_a$ ) is accepted because the  $X^2$  count is higher than Table  $X^2$ .

## 4. CONCLUSION

Based on the results of research and analysis that has been done, it can be concluded that:

1. Processed fish products at Central Jakarta's Bendungan Hilir Market. Consumer preferences provide fish cake, fish balls, shredded fish, fish nuggets, and jambal salted fish, with the taste of each product being the most important aspect.
2. Consumers consider the color of white packaging, the color of natural products, the type of plastic packaging, and the original flavours of processed fish products when deciding whether to buy fish balls, jambal salted fish, shredded fish, fish nuggets, and fish cake at Bendungan Hilir Market Jakarta. Fish balls and fish cake are priced between Rp. 15,000 and Rp. 20,000, while jambal salted fish, shredded fish, and fish nuggets are priced above Rp. 20,000.

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