Original Research Article

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

ABSTRACT

This research aims to analyze the fish products that become consumer preferences and analyze the attributes most consumer consider in choosing fish processed products in Bendungan Hilir Traditional Market, Central Jakarta, Indonesia. The method of this research uses the case study with using descriptive analysis. The attributes observed are the color of packaging, packaging type, the color of product, taste and price. The questionnaians used have been tested using validity test and reliability test. The characteristics of respondents and consumer behavior were analyzed descriptively, while the preference for processed product of fisheries like fish ball, jambal salted fish, shredded fish, fish nugget, fish cake, and attributes in processed fishery product would be consideraded to the consumers consumption of processed products was analyzed using Chi square. The result showed that the processed fishery product wich become consumer preferences at the Bendungan Hilir traditional market is fish cake. The thing wich consider in choosing fish meatballs, jambal salted fish, shredded fish, fish nugget and fish cake is white packaging, the color of natural product, types of packaging are plastic and the original taste of product. The considered price of fish ball and fish cake are Rp. 15.000 – Rp. 20.000, and the considered price of jambal salted fish, shredded fish and fish nuggets is >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].

Jakarta city has been a fish consumption rate of 42.98 kg per capita/year in 2018. 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 faced with a 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 are very important to 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 was conducted during July - August 2021 at the Bendungan Hilir Market, Central Jakarta City, Indonesia. The method used is the case study method (case study). Types and sources of data are primary data and secondary data. Primary data obtained from interviews with respondents who are consumers that buy processed fish products at Bendungan Hilir Market, Central Jakarta City, Indonesia. Secondary data to support this research is a source of data obtained from research reports from an agency, library materials, and the Central Bureau of Statistics.

The sampling technique used in this study was accidental sampling. The number of respondents used in this research is 30 people as consumers of processed fish products in Bendungan Hilir Market, Central Jakarta City, 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 states that the instrument used to obtain data in the study can be used or not. The validity test of the instrument in this study was conducted to determine whether the measuring instrument that has been designed in the form of a questionnaire can perform its function. The validity test is used with a statistical approach, namely through the correlation coefficient value of the statement item score with the statement item's total score, if the correlation coefficient is greater than or equal to 0.30 then the statement is declared valid.

2.1.2 Reliability Analysis

The reliability test was carried out according to Sugiyono [6] to find out how far the measurement results remained consistent, if measurements were made twice or more for the same symptoms using the same measuring device. The reliability of each instrument used by the author uses the Cronbach alpha coefficient (α) using the Statistical Product and Service Solution (SPSS) version 20 for the type of interval measurement. An instrument is said to be reliable if the Cronbach alpha value is greater than the specified limit of 0.6 or the calculated correlation value is greater than the value in the table.

2.1.3 Analysis of Consumer Preferences

The method that is used in analyzing consumer preferences is a Likert Scale. The scale can be used as a research data collection tool. Likert scale is used to measure the behaviour, opinions and perceptions of a person or group of people about social phenomena. Behaviour scale is a type of scale used to measure a person's behaviour towards a particular object. The results are in the form of behaviour, namely: support (positive), reject (negative), and neutral. The answers to each instrument item that uses a Likert scale have gradations from very positive to very negative, in the form of words. Examples of likert scales used to measure consumer behavior use five assessment points, namely Strongly Agree Answer given a score of 5, Agree Answer are given a score of 4, Doubtful Answer are given a score of 3, Answer Disagree are given a score of 2, Very Disagree Answer are given a score of 1.

The data above uses a questionnaire data collection technique, for example the instrument is given to respondents with a certain amount, then an analysis will be conducted by grouping based on the behaviour assessment score. Based on these data the number of people who agree and strongly agree is calculated. Then, these results will show the answers most frequently answered by respondents. The interval data can also be analyzed by calculating the average answer based on the score of each answer from the respondent. The ideal score (criteria) for all the 5 items is multiplied by the number of respondents.

2.1.4 Analysis of The Attributes of Fish Products

Analysis of the attributes of processed fish products used the Chi Square test. According to Sugiyono [7] Chi Square is a statistical technique used to test hypotheses when a population consists of two or more classes of Bendungan Hilir where the data is nominal and the sample is large.

$$X^2 = \sum_{i=1}^{k} \left(\frac{fo - fh}{fh} \right)^2$$

Notes:

χ2 : Chi Square
fo : Frequency observed in research
fh : Frequency expected in research
k : The attribute category in the processed fish product variable in Market

Where:

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

Notes:

N : Number of respondents (people)

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

Ho : There is no difference in consumer preferences for the attributes of processed fish products
Ha : There are differences in consumer preferences for the attributes that exist in processed fish products

Testing at 95% confidence level with testing criteria:

Ho is rejected if χ^2 count> χ^2 table

Ho is accepted if χ^2 count ≤ χ^2 table

3. RESULTS AND DISCUSSIONS

Consumers in this study are consumers who buy Processed Fish Products at Bendungan Hilir Market, Central Jakarta City, Indonesia. The questionnaires distributed to 30 respondents included general characteristics of consumers, namely gender, age, education level, occupation, income, and number of family members.

3.1 Gender

Characteristics of consumers by gender are divided into two groups; male and female. Characteristics of consumers by gender are presented in Table 1.

Table. 1. Consumer characteristics by gender

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

The results showed that most consumers of processed fish products were women with a percentage of 90% while male consumers constitute 10%. This might be so because women have the responsibility to set out the meal needs in the household.

3.2 Ages

The age group in this study was divided into four classes with a difference of 10 years. The age group of consumers who buy fish processed products in the Bendungan Hilir Traditional Market of Jakarta City is 17-26, 27-36, 37-46, >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

Based on the research results, the age of the youngest consumers is between 17-26 years, which is 3.3%. The age group 27-36 years is 13.3%, the age group37-46 years is 36.7%. The age group of respondents over 47 years is the age group that is the most dominant as consumers in choosing processed fish products Respondents over 60 years of age consume less food because at this age someone is more careful in choosing and consuming food, that is, they prefer foods made from vegetables.

3.3 Education Level

The education level of the respondent will influence the decision process and consumption patterns of a person. A person's education level will also affect the way of thinking and even perception of a problem [8]. The level of education in this study was divided into 4; namely High School, Diploma, Undergraduate Degree and Master 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 udergraduate backgrounds, while the least respondents came from an senior high school background (6.7%).

3.4 Income Level

According to Sumardi [9], income is the total income of all family members who are contributed to meet the needs of family and the individuals. Consumer income of processed fish products is divided into 3 groups, As shown in Table 4.

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

Based on Table 4, 90% of Central Jakarta City residents have the highest income level, (> Rp. 4,000,000), and the least is those who have the lowest (3.3%) income level, (Rp. 1,000,000).

3.5 Occupations

Consumer analysis considers employment as the best single indicator of social class. Work done by consumers influence their lifestyle (Table 5).

Table 5. Consumer characteristic by occupations

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 Familiy Members

The number of family members is an important factor in influencing consumers' decisions to buy processed fish products. (Table 6).

Table 6. Consumer characteristics by the number of family members

No	Number of familiy 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

The consumers of processed fish products in Central Jakarta City have a diverse number of family members (Table 6). It can be seen that the highest percentage (53.3%) is in families that have 4 members, and the lowest percentage (3.3%) of family members is shown in the number of 2 members.

3.7 Consumer Behaviour

Consumer behavior towards purchasing processed fishery products is an act of directly involving, seeking, obtaining, consuming, and spending processed fishery products. Respondents are taken as research material where consumer behavior is researched and analyzed to study processed fish product marketers because marketers have an obligation to understand the respondent, how the respondent's tastes, and how the respondent makes the decision to buy processed fish products. Studying consumer behavior is very important because understanding respondents will lead marketers to the right and efficient marketing policies.

3.8 Consumer Preference

Consumer preference for processed fishery products is a choice of whether or not someone likes processed fishery products that are consumed. The choice varies between one respondent to another. (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	

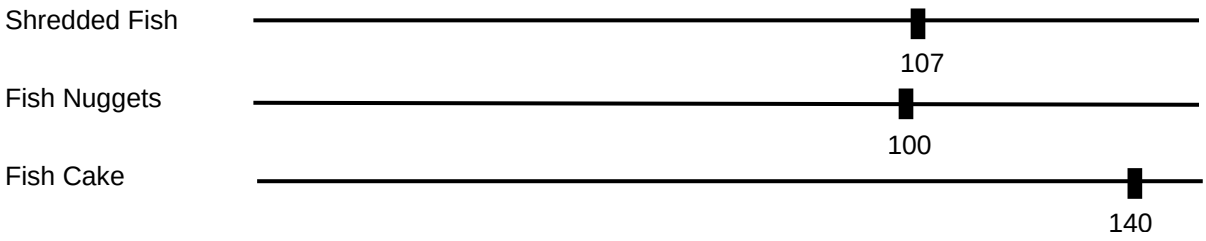

Table 7 shows that the most consumers like processed fish products in the form of fish cake. Based on the results of the calculation of the value of the behaviour calculation scale, how many tuna fish were obtained in the range of 140, while the fish meatballs were in the range of 109, jambal salted fish in the range 98, shredded fish in the range107 and fish nuggets was in the range of 100. Consumers mostly choose processed fish products in the form of fish cake because this product is widely found.

3.9 Test Validity and Reliability

The results of the validity and reliability tests of consumer preferences for all products are presented in Table 8 and table 9.

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

The validity value of each of the all product attributes is declared valid because the validity value of each attribute is greater than 0.3 (Table 8). The results of this validity test are in accordance with According to Sugiyono [6] who stated that if the correlation coefficient is greater or equal to 0.30 then the statement is declared valid. Results of Reliability all products test is on table 9.

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 study is said to be reliable if the Cronbach's Alpha value is greater than 0.6 so that consumer preference data for all products is said to be reliable. So the data above is consistent and reliable.

3.10 Test Chi Square

The results of the chi square tests of consumer preferences for all products are presented in Table 10.

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

Product	Attributes	fo	fh	fo-fh	$(fo-fh)^2$	X^2
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 results of the chi-square calculation shown in Table 16. it shows that the value all totals of chi-square products. Based on df = 4 with an error of 5%, the square table value of 9.49 can be obtained. Each attribute of the all processed product was observed to be significantly different with a significant level of 95%, which means that the null hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted because the X2 count is greater than Table X2.

4. CONCLUSION

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

1. Processed fish products at the Bendungan Hilir Market, Central Jakarta. the consumer's preferences are fish cake, fish balls, shredded fish, fish nuggets, and jambal salted fish with the most considered attribute being the taste of each product.
2. Attributes of processed fish products that consumers consider in making a decision to buy fish balls, jambal salted fish, shredded fish, fish nuggets, and fish cake at Bendungan Hilir Market Jakarta are the color of white packaging, the color of natural products, the type of plastic packaging, and with original taste. The price considered for fish balls and fish pempek are Rp. 15,000 – Rp. 20,000, and for the price considered of jambal salted fish, shredded fish, and fish nuggets are >Rp. 20,000

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