



**ANALYSIS OF CONSUMER'S PREFERENCES IN CHOOSING
FISH MEATBALL ATTRIBUTES
(CASE STUDY IN ATAS TRADITIONAL MARKET OF THE CIMAHY CITY)**

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ABSTRACT

This study aims to analyze the attributes most consumers consider in choosing fish meatball products in Atas Traditional Market Cimahi City. The method used in this research is the case study method using descriptive analysis. Data were collected by direct interview technique with respondents in Atas Traditional Market using a questionnaire. The attributes observed were packaging color, packaging type, product color, flavour, and price. The questionnaire were used to validity test and reliability test. Respondent characteristics and consumer behavior were analyzed descriptively, while the attributes in fish meatball products that were studied by consumers were analyzed by rating scale and *Chi Square*. The results indicated that the most preferred attribute fish meatball products was price and choice of attributes of fish meatball products is the packaging color which transparant, the type of packaging was plastic, the color of product was natural, original, and the price was <Rp. 10.000.

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

Fishery business activities included in the development of fisheries and its relation to consumers is very close. Consumer behavior is decision that has been taken using available resources, such as time, money, and effort, in exchange for goods to buy. Simply consumer behavior is about decision to buy, decide, how, when, and how often the frequent of buying. Consumer behavior can also be defined as the process that has been through by a person who is finding out, searching, buying, using, evaluating, and doing action after product consumption (Wijayanti 2011).

Cimahi City has a less ideal fish consumption level, it is only 13 kg per capita / year (BPS 2018). Expected level of consumption is 48 kg per capita/year. The level of fish consumption that is not ideal is caused by the high price of fish and Cimahi City is also far from the area of fishery production sources. The level of consumption that is not ideal does not mean that people cannot consume fish because the local fish are abundant, the Cimahi City government has conducted a socialization about Gemarikan (liking of eating fish) in order to increase the value of fish consumption in Cimahi City.

Cimahi City has 12 traditional markets that spread across each district. Atas Traditional Market is one of the traditional markets located in the center of Cimahi City, precisely in Cimahi Tengah District. Processed fishery products in the atas traditional market has their own variation, for example a variety of fresh fish and fish that have been processed. This process is divided into two, modern processing and traditional processing.

Product is everything that is offered by producers to consumers to meet consumer needs and is able to provide satisfaction for its users. Preferences indicate consumer's interest for a variety of available product choices (Tjiptono 2009). The concept of preference is relevant with the concept of goods that are more in demand and more giving greater satisfaction than goods that are less in demand. Consumer preferences are very important

to be analyzed, because it can be a guide in determining the characteristics of processed fish products in terms of packaging, types of processed fish and prices.

Fish meatball can be defined as spherical food products obtained from a mixture of fish meat and starch or cereals with or without the addition of food ingredients. The process of making fish meatballs requires good fish meat to use, namely fresh fish meat, because it has not undergone the rigor mortis phase. When viewed from the efforts of the adequacy of community nutrition, meatballs can be used as an appropriate tool, because this product has high nutritional value and is liked by all levels of society (Kurniawan and Kusrahayu 2012).

Fish meatball product development can be done by finding out consumers' preferences or preferences for fish meatball products. Consumer preferences are very important to be done to help producers design the right marketing strategy to win the competition against brands on the market. Consumer preferences alone can help producers to see whether the attributes offered on products already meet consumer expectations or not. Based on the results of research that has been done, it is found that the price attribute is an attribute of consumer preference. The price attribute is expected to be a marketing strategy for fish meatball products.

RESEARCH METODOLOGY

The research was conducted during May-July 2019 in Atas Traditional Market Cimahi City. The method used is the case study method. Types and sources of data are primary data and secondary data. Primary data was obtained from interviews with respondents as consumers who buy processed fish products in the Atas Traditional Market of Cimahi City. Secondary data to support this research is a source of data was obtained from the reports of the results of an institution research, library materials, government institution, and the Central Bureau of Statistics.

The sampling technique that is used in this study was accidental sampling. Respondents were used in this study numbered 100 people as

consumers of processed fish products in Atas Traditional Market Cimahi City. The product samples that will be used is fish meatball.

DATA ANALYSIS

Data analysis method that is used is descriptive analysis. Descriptive analysis is a statistical analysis that is used to describe or analyze research results, but is not used to make deep conclusions. The technique that is used to analyze consumer preferences uses a Likert scale and attributes which the most consumers consider in choosing fish meatball attributes are by Chi Square method.

Validity Analysis

Validity test states that the instrument used to obtain the data in research can be used or not. The validity test of the instrument in this study was conducted to find out whether the measuring instrument that had been designed in the form of a questionnaire really could carry out its function. Validity test is used with a statistical approach, namely through the correlation coefficient of the score of statement items with the total score of statement items, if the correlation coefficient is greater or equal to 0.30 then the statement is declared valid.

Reliability Analysis

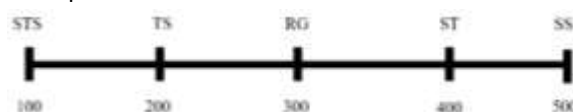
The reliability test according to Sugiyono (2010) was carried out to find out how far the measurement results remained consistent if measurements were made twice or more for the same symptoms using the same measuring device. The reliability of each instrument used by the author uses the Cronbach alpha coefficient (α) using the Statistical Product and Service Solution (SPSS) version 20 for the type of interval measurement. An instrument is stated 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 and can be used for research.

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 attitudes, opinions and perceptions of a person or group of people about social phenomena. Attitude scale is a type of scale used to measure a person's attitude towards a particular object. The results are in the form of attitudes, 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 attitude 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 (pict 1). The ideal score (criteria) for all items 5 is multiplied by the number of respondents.



Pict 1. Likert Scale

Analysis of The Attributes of Processed Fish Products

Analysis of the attributes of processed fish products are using the Chi Square test. According to Sugiyono (2014) Chi Square Test (X^2) one sample is a statistical technique used to test hypotheses if the population consists of two or more classes in which the data are nominal and the sample is large.

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

Notes :

- χ^2 : Chi Square
- fo : Frequency observed in research
- fh : Frequency expected in research
- k : Category attributes in the variable fish meatball in the Atas Traditional Market.

Where:

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

Notes:

- n : Number of respondents (people)
- k : Category attributes in the variable fish meatball in the Atas Traditional Market.
- Ho : There are no differences in consumer preferences for the attributes of fish meatball.
- Ha : There are differences in consumer preferences for the attributes that exist in fish meatball.

Testing at 95% confidence level with testing criteria:

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

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

RESULT AND DISCUSSION

Consumers in this study are consumers who buy fish products in Atas Traditional Market of Cimahi City. The questionnaires are distributed to 100 respondents included general characteristics of consumers, such as gender, age, level of education, occupation, income, and number of family members.

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	The amount of people	Percentage (%)
1	Male	34	34

2	Female	66	66
	Total	100	100

The results showed that most consumers of processed fish products were 66 women with a percentage of 66% and 34 male consumers with a percentage of 34%. This can happen because women have the responsibility to set out the meal needs in the household.

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 Atas Traditional Market of Cimahi City is 17-26, 27-36, 37-46, > 47 (Table 2).

Table 2. Consumer Characteristics by Ages

No	Ages	The amount of people	Percentage (%)
1	17-26	20	20
2	27-36	48	48
3	37-46	29	29
4	>47	3	3
	Total	100	100

Based on the results of the study, the age of the youngest consumers are ranging from 17-26 years which is equal to 20%. The age group 27-36 years by 48%, the 37-46 year age group is the most dominant age group being consumers in choosing processed fish products. The age group 45-59 years by 29% and the age of respondents over 47 years by 3%. The age of respondents over 60 years is less in consuming food because at this age someone is more careful in choosing food (Hermaniato and Andayani 2002).

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 (Sumarwan 2009). The level of education in this study was divided into 6 namely elementary, junior high, high school, One-year Diploma, Third-year Diploma, The characteristics of consumers based on their level of education can be

seen in table 3.

Table 3. Consumer Characteristics by Education Level

No	Education Level	The amount of people	Percentage (%)
1	Elementary School	3	3
2	Junior High School	7	7
3	Senior High School	47	47
4	One-year Diploma	17	17
5	Third-year Diploma	12	12
6	Undergraduate Degree	14	14
	Total	100	100

Based on table 3, it shows that most respondents who come from high school background are 47 people with a percentage of 47%, One-year Diploma background are 17 people with a percentage of 17%, Undergraduate Degree background are 15 people with a percentage of 15%, Third-year Diploma background of D3 are 12 people with a percentage of 12%, a junior high school background of 6 people with a percentage of 6%, and the fewest respondents coming from an elementary school background are 3 people with a percentage of 3%.

Income Level

According to Sumardi (2009) 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 4 groups, and it can be seen in table 4.

Tabel 4. Consumer Characteristics by income level

No	Income	The amount of people	Percentage (%)
1	< 1.000.000	5	5
2	1.000.000-2.000.000	14	14
3	2.000.000-3.000.000	33	33
4	>4.000.000	48	48
	Total	100	100

No	Income	The amount of people	Percentage (%)
1	< 1.000.000	5	5
2	1.000.000-2.000.000	14	14
3	2.000.000-3.000.000	33	33
4	>4.000.000	48	48
	Total	100	100

Based on table 4, the percentage of Cimahi City residents who have the highest income level is > Rp.4.000.000 as much as 48% or 48 people, Cimahi City residents who have an income level of Rp. 2,000,000 - Rp. 3,000,000 by 33% or 33 residents who have an income of Rp. 1,000,000-Rp. 2,000,000 of 14% or 14 people, and the last is Cimahi City residents who have the lowest income level of <Rp. 1,000,000 by 5% or 5 people.

Occupations

According to Engel (2010), consumer analysis considers employment as the best single indicator of social class. Work are done by consumers influences their lifestyle (Table 5).

Table 5. Consumer Characteristics by occupations

No	Occupations	The amount of people	Percentage (%)
1	Civil Servants	12	12
2	Private Employees	10	10
3	Entrepreneurs	23	23
4	Housewives	36	36
5	Students	16	16
6	Unemployed	3	3
	Total	100	100

Based on table 5, the percentage value of Cimahi city residents by type of work shows that housewives have the highest percentage of 36%, entrepreneurs 23%, students have a 16% percentage, civil servants and private employees have a percentage value of 12% and 10%, and the value the lowest percentage of unemployed population is 3%.

The Number of Family Members

The number of family members is an important factor in influencing consumers' decisions

to buy processed fish products. Table 6 presents the characteristics of consumers based on the number of family members (Table 6).

Table 6. . Consumer Characteristics by The Number of Family Members

No	The Number of Family Members	The amount of people	Percentage (%)
1	The member 1-2	24	24
2	The member 3-4	68	68
3	The member 5-6	7	7
4	The member 8	1	1
	Total	100	100

Based on table 6, it shows that consumers of processed fish products in the City of Cimahi have a diverse number of family members, it can be seen that the highest percentage of families are having 3-4 members is 68 people, the percentage of families are having 1-2 members is 24% or 24 people, the percentage of family members is 5-6 people which is 7% or 7 people and the lowest percentage of family members is indicated by the number of family members 7-8 people which is 1% or 1 person.

Consumer Behaviour

Consumer behavior towards the purchase of processed fishery products is an action which is directly involved, looking for, getting, consuming, and spending processed fishery products. Respondents are taken into research material where consumer behavior is examined and analyzed to study by marketers of processed fish products because marketers are expected to understand respondents, how the respondent's flavours are, and how

respondents make decisions to buy processed fish products. Studying consumer behavior is very important because understanding respondents will lead marketers to appropriate and efficient marketing policies.

Consumer's Frequency Who Consume Fish

Based on the results of research conducted on 100 respondents, there are 98 people consumed processed fishery products and 2 people did not consume because of allergies to fish-based products.

Frequency of Consuming Processed Fishery Products

Based on the results of this study, out of 100 respondents who consumed > 4 times a month 44 people in a month. The second rank is 3 times a month as many as 38 people, the next rank is 2 times a month as many as 9 people and the last is once a month as many as 9 people. This shows that the purchasing power of the people in the Atas Traditional Market for processed fishery products is quite high.

The Usual Place to Buy Processed Fishery Products

Based on the results of this study, as many as 86 out of 100 respondents chose to buy processed fisheries for consumption in traditional markets, while as many as 5 respondents chose to shop at supermarkets, 8 respondents chose to buy processed fish products at street vendors, and 1 person chose to buy at a stall.

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 and another respondent (table 7).

Table 7. Calculation Results for Attitude Scale Measurement of Fish Meatball Attributes

No	Fish Meatball Attributes	Strongly Disagree (1-100)	Not agree (101-200)	Doubtful (201-300)	Agree (301-400)	Strongly Agree (401-500)
1	The Package Colour	385				
2	The Product Colour	399				
3	The Kind Of Package	406				
4	Flavour	429				
5	Price	438				

Based on the calculation of the measurement scale attitudes to the attributes of fish meatball products, the highest value obtained by the price of processed fish product attributes is with a score of 438, while the flavour attributes get a total score of 429, the type of packaging attributes get a total score of 406, the color attributes of the product get a total score of 399, and the lowest total score obtained by package warma is 385. The attribute that is the consumer's preference is Price. The results of other studies indicate that consumer preferences for fish meatball products are determined by flavour attributes (Handaka et al. 2017). Indicating besides price, price attribute is also a consumer's preference.

Test Validity and Reliability

The results of the validity and reliability tests of consumer preferences for fish meatball products are shown as follows on table 8.

Table 8. Fish Meatball Validity Test Results

Preference	Validity Value
The package colour	0.731
The product colour	0.677
The kind of package	0.844
Flavour	0.612
Price	0.319

Based on table 14, the validity value of each fish meatball product attribute is declared valid because the validity value of each attribute is greater than 0.3. The results of this validity test are in accordance with Sugiyono's statement (2010) if the correlation coefficient is greater or equal to 0.30 then the statement is declared valid. The results of Mackarel Tuna Reliability test is on table 9.

Table 9. Results of Fish Meatball Reliability Test

Cronbach's Alpha	Total Item
0.726	5

According to Sugiyono (2010), a study is said to be reliable if the Cronbach's Alpha value is greater than 0.6 so that the consumer preference

data for fish meatball products can be said to be reliable because the Cronbach's Alpha value is 0.726. Chi Square Analysis Results Attributes Consumers Considered Consumers Toward Fish Meatballs is on table 10.

Table 10. Chi Square Analysis Results Attributes Consumers Considered Consumers Toward Fish Meatballs

No	Meatball Fish Product	fo	fh	fo-fh	(fo-fh) ²	X ²
1	The package colour	26	20	6	36	1.8
2	The product colour	34	20	14	196	9.8
3	The kind of package	22	20	2	4	0.2
4	Flavour	16	20	-4	16	0.8
5	Price	2	20	-18	324	16.2
	Total	100	100	0	-	28.8

Based on the results of the chi-square calculation shown in table 10, it shows that the chi-square value is 28.8. Based on dk = 4 with an error of 5%, we can get the square value of table 9.49. Each of the processed fish meatball product attributes observed were significantly different with a significant level of 95% which means the null hypothesis (Ho) was rejected and the alternative hypothesis (Ha) was accepted because the calculated X² was greater than the X² table so that there were differences in consumer preferences for the attributes contained on fish meatball products by consumers in the Atas Traditional Market of Cimahi City. The attributes that most influence the product color, packaging color,

type of packaging, flavour, and price. The most considered attribute of processed fish meatballs is the color of the product, it can be seen that 34 consumers consider the color of the product compared to other attributes. The attributes of fish meatball products referenced by consumers are clear packaging colors, the type of packaging is plastic, natural product colors, original flavours, and prices of processed fish meatball products <Rp.10,000. The following table shows the results of the calculation of the measurement scale of attitudes towards the attributes of fish meatball products. The results of the attribute analysis of the types of fish meatball packaging are presented in table 11.

Table 11. Chi Square Analysis Results The Kind Of Package Fish Meatball Attribute

No	The Kind Of Package	fo	fh	(fo-fh)	(fo-fh) ²	X ²
1	Leaves	2	25	-23	529	21.16
2	Paper	1	25	-24	576	23.04
3	Plastic	95	25	70	4900	196
4	Other	2	25	-23	529	21.16
	Total	100	100	0	-	261.36

Based on the results of the chi-square calculation shown in table 11, shows that the chi-square value of

261.36, dk = 3 with an error of 5%, the square values of table 7.81 can be obtained. Chi-square value is

greater than the chi-square table. The results of the chi square analysis of the attributes of the types of packets of processed fish meatball products that were observed were significantly different with a significant level of 95% which means the null hypothesis (Ho) was rejected and the alternative hypothesis (Ha) was accepted because the calculated X^2 was greater than the X^2 table so that there were differences in consumer preferences to the choice of packaging types found in fish meatball products by consumers in the Atas Traditional Market of Cimahi

City. The type of packaging that is most in demand by consumers is the type of plastic packaging, it can be proven that those who choose the type of plastic packaging are 95 people. Product color is also preferred after packaging color and type of packaging. The color most sought after by consumers is the natural color, it can be proven that those who choose clear packaging colors are 75 people. Fish meatballs have the most widely chosen color of the product consumers are natural as presented in table 12.

Table 12. Chi Square Analysis Results The Product Colour Fish Meatball Attribute

No	The Product Colour	fo	fh	(fo-fh)	(fo-fh) ²	X ²
1	Natural	75	25	50	2500	100
2	Neutral	15	25	-10	100	4
3	Bright	9	25	-16	256	10.24
4	Other	1	25	-24	576	23.04
	Total	100	100	0	-	137.28

Based on the results of the chi-square calculation shown in table 12, shows that the chi-square value of 137.28, dk = 3 with an error of 5%, we can obtain the square-value of table 7.81. Chi-square value is greater than the chi-square table. The results of the chi square analysis of the color attributes of processed fish meatball products observed were significantly different with a significant level of 95% which means the null hypothesis (Ho) was rejected

and the alternative hypothesis (Ha) was accepted because the calculated X^2 was greater than the X^2 table so that there were differences in consumer preferences for product color choices found in fish meatball products by consumers in the Atas Traditional Market Cimahi City. The results of the analysis of the fish meatball the package colour attributes are presented in table 13.

Table 13. Chi Square Analysis Results The Package Colour Fish Meatball Attribute

No	The Package Colour	fo	fh	(fo-fh)	(fo-fh) ²	X ²
1	Tranparant	60	25	35	1225	49
2	White	34	25	9	81	3.24
3	Black	1	25	-24	576	23.04
4	Other	5	25	-20	400	16
	Total	100	100	0	-	91.28

Based on the results of the chi-square calculation shown in table 13, shows that the value of the chi-square test is 91.28, dk = 3 with an error level of 5%, the square values of table 7.81 can be obtained. Chi-square value is greater than the chi-square table. The results of the chi square analysis of the color attributes of processed fish meatball product packaging observed were significantly different with a significant level of 95% which means the null

hypothesis (Ho) was rejected and the alternative hypothesis (Ha) was accepted because the calculated X^2 was greater than the X^2 table so that there were differences in consumer preferences to the choice of packaging colors found in fishball products by consumers in the Atas Traditional Market of Cimahi City. The color that is most sought after by consumers is transparant, it can be proven that those who choose clear color are 60 people. The results of

the analysis of the fish meatball flavour attributes

are presented in table 14.

Table 14. Chi Square Analysis Results Flavour Fish Meatball Attribute

No	Flavour	fo	fh	(fo-fh)	(fo-fh) ²	X ²
1	Spicy	24	25	-1	1	0.04
2	Original	43	25	18	324	12.96
3	Savory	28	25	3	9	0.36
4	Salty	5	25	-20	400	16
	Total	100	100	0	-	29.36

The results of the table show that the chi-square value is 29.36, dk = 3 with an error of 5%, we can get the square-value of the 7.81 table. Chi-square value is greater than the chi-square table. The results of the chi square analysis of the flavour attributes of processed fish meatball products were observed to be significantly different with a significant level of 95% which means the null hypothesis (Ho) was

rejected and the alternative hypothesis (Ha) was accepted because the calculated X² was greater than the X² table so that there were differences in consumer preferences for flavour choices found in fish meatball products by consumers in the Atas Traditional Market of Cimahi City. The results of the analysis of the attributes of the fish meatball prices are presented in table 15.

Table 15. Chi Square Analysis Results Price Fish Meatball Attribute

No	Price	fo	fh	(fo-fh)	(fo-fh) ²	X ²
1	< Rp. 10.000	52	25	27	729	29.16
2	Rp. 10.000 – Rp. 15.000	28	25	3	9	0.36
3	Rp. 15.000 – Rp. 20.000	17	25	-8	64	2.56
4	>Rp. 20.000	3	25	-22	484	19.36
	Total	100	100	0	-	51.44

Based on the results of the chi-square calculation shown in table 15, shows that the value of the chi-square test is 51.44, dk = 3 with an error of 5%, we can get the square value of table 7.81. Chi-square value is greater than the chi-square table. The results of the chi square analysis of the price attributes of the processed fish meatball products observed were significantly different with a significant level of 95% which means the null hypothesis (Ho) was rejected and the alternative hypothesis (Ha) was accepted because the calculated X² was greater than the X² table so that there were differences in consumer preferences for price choices on fish meatball

products. The price most sought after by consumers is <Rp.10.000, it can be proven that those who choose prices <Rp.10,000 are 52 people.

CONCLUSION

The attribute of the fish meatball product that is the consumer's preference is the price. The attributes of processed products most considered by consumers in making decisions to buy fish meat products in the Atas Traditional Market of Cimahi City are natural product colors, clear packaging colors, types of plastic packaging with original flavours, and prices for processed fish meatball products <Rp. 10,000.

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