



Preference of Grouper Fish Marketing Institution In Tanggetada Sub-District Kolaka District

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Abstract

The objectives of the study were to train clove farmers group about the post-harvest handling system in order to produce essential oils with export quality, to train clove farmers group in terms of essential oil processing system as well as to encourage clove farmers group to apply appropriate technology for processing of clove essential oil with export quality. In general, the main and most common problems faced by clove farmers are inadequate system of clove essential oil processing system, the handling system and equipment used are not up to standard, moreover, the technology used in handling, durability, and package of clove essential oils still very limited. The approaches offered and agreed by the clove farmer group are as follow: (1) General approach, (2) Determination of training participants, (3) Types and procedures of training (training strategy), and (4) Scale of the program. The expected targets and outcomes of this community service program are: Farmer groups are able to apply appropriate technology in the production of clove essential oil, both to post-harvest handling, processing and storage of clove essential oils to obtain added value. In fact, knowledge of farmers about post-harvest handling and processing technology of clove essential oil to increase farmer's income is still very poor. The results of analysis of essential oil clove processing showed that the clove leaves utilization as an effort to create an added value of farmer's income by Rp. 13,000,000 per production unit. The difference in selling price between the dried clove leaves and processed clove leaves into essential oil was Rp. 10,765,000. Comparative test (t-test) showed that t-count value for selling dried clove leaves was 16,068 while clove leaves processed into essential oil was 35,108. The t-table value of 1,675 indicated that $t \text{ count} > t \text{ table}$ where H_0 is rejected and H_1 is accepted. It concludes that there is a comparative income of farmer who sells dried clove leaves and farmers who sell clove leaves in the form of essential oils.

Keywords: Clove Farming, Essential Oil and Comparative

A. Background

Indonesia is a country with wider territorial water than the terrestrial. As an archipelagic country, Indonesia has great fishery potential that can be utilized for the welfare of Indonesian society. One of the potential utilization in the field of the fishery is marine aquaculture including in the grouper culture. Grouper is a commodity that has a high economic value with a quite good

prospect of development. Moreover, Grouper in Kolaka District with potential area of approximately 50 ha, and newly developed about 4.75 ha yielded grouper productions of 2.93 tons/year (Anonymous, 2010).

The development of grouper is found in three sub-districts in Kolaka, namely Wundulako sub-district with floating net cage cultivation method located in Lambasina Island, Pomala Sub-district and Tanggetada Sub-district with the cultivation method of pen culture (*keranda tancap*) located in Tanggetada and Plaewali Villages, as well as Anaiwoi Villages. Particularly in Palewai Village, the potential area of grouper cultivation approximately 15 ha, while newly developed approximately 0.25 ha managed by 20 families of fishermen communities with the production of about 11,000 kg/year (Anonymous, 2010).

The demand of groupers currently shows a very high increase. It is in line with the fishing and fish breeding business which continue to be encouraged by new methods introduced to the fishing community in fishing a live grouper. Tanggetada Sub-district is one of the grouper centers as it is located in the western coastal area of Tanggetada District. Tanggetada District has a coral reef area with an area of approximately 587 Ha which is quite potential for grouper cultivation with penculture (*kerambatan cap*) method because its coastal areas are protected from storms and waves.

The results of grouper culture have been marketed through marketing institutions that are merchants and retailers. The marketing institutions have a preference in the form of choice/criteria of selected groupers to be marketed. This research is essential to understand how the marketing institution of the merchants and retailers preference on purchasing grouper. This research is expected to obtain an important information in formulating the marketing strategy, that is to know the characteristics (based on attribute inherent to the product/grouper) product which might be accepted by the market of which the preference also indicate the market demand for a product. Individual preferences of purchasing using the concept of utility, defined as pleasure, satisfaction or fulfillment a person based on the economic activities (Nicholson, 2002). The process of product purchasing by a consumer was based on a study finding by Syahrir (2013) and Muzdalifah (2012) that stated the demand begins when it is beginning to be felt and recognized. The objective of the study was to know how the preference of marketing institution to grouper in District Tanggetada Kolaka.

B. Method

1. Research Site

This research was carried out in Tanggetada Sub-district, Kolaka District, from October 2016 to January 2017. The area is selected as the research site as it is one of the center producers of grouper.

2. Object of the Research

The populations of the research were collector and retailer traders of grouper in Tanggeda Subdistrict, Kolaka District, which is consisted of 9 collectors and 16 retailers. The determination of the research samples was conducted by census (sample saturated) in which it was included all population of the research, which is 25 people.

3. Method of Data Analysis

Preferences of grouper marketing institutions (collectors and retailer traders) on various grouper attributes (criteria) used conjoint analysis. Santoso (2012) suggested that the stages of the Conjoint analysis are as follows:

a. Identification of product attributes

Product attributes and its levels are identified to create stimuli as follow:

- Color of gill, normal gill color, (maroon red) and abnormal gill color (brownish red/pale).
- Price (extensive, medium, cheap).

b. Stimuli construction

The combination of factors and levels is called as stimuli. The Combination is based on product attributes that have been defined by multiplication of each sub attribute. Since there are two parts of attributes (colors and prices) and five sub-attributes (two for color and three for price), then the possible combination is $2 \times 3 = 6$ stimulus (combination of attributes). The construction of stimuli list (combination of attributes) that are created automatically using SPSS software. The list of stimulus obtained was 6 (Appendix 2 and 3).

c. Data quantification

The quantification of data used metric data, where respondents are asked to rate each stimuli using a Likert scale from 1 to 5. The most preferred stimuli are rated with 5, while the least favorable stimuli were rated with 1.

d. Procedure of Conjoint Analysis

Conjoint analysis used SPSS 16 software. The basic model of Conjoint analysis formula is as follows:

$$U(X) = \sum_{i=1}^m \sum_{j=1}^{k_1} \beta_{ij} x_{ij}$$

Where :

- U (X) = All of utility values of an alternative
 β_{ij} = Part worth / the utility value of j attribute at the j level
 k_1 = j level of I attribute
 m = Number of attributes
 x_{ij} = dummyvariable I attribute at j level (rated 1 if the involved level appear and 0 if not appear)

Where:

- ROI : The ability to return capital
 Operating profit : Profit (net income)earned(Rp)
 Venture capital : Total costs (fixed cost and variable costs)(Rp)

Criteria:

- ROI >1: able to return capital (a company said to be successful)
 ROI <1: unable to return the capital (a company said to not/do not work)

- b. The success of the technical terms, namely in term of productivity resulting company with in a certain time. Analyzed descriptively and attach financial statements that have been corrected by the researchers in the form of an income statement is based on a simple financial accounting made by the company.
 c. Success in terms of the allocation of the company's revenue. It is analyzed descriptively.

C. Results and Discussion

1. Measurement of the Preference of the Grouper Marketing Institution

Measurement of the preference of grouper marketing institutions (collectors and retailer traders) was done to answer the purpose of this research, that is how the preference of marketing institution to various attribute (characteristic) of grouper. The measurement of this preference is to identify the attribute level of grouper that are most preferred by the marketing institution (collector and retailer trader). The preferences of the marketing institution were measured using Conjoint Analysis which is able to explain the importance level of the attribute as well as the importance value of each attribute.

2. Identification of Grouper Attribute Levels and Stimuli Construction

There are two grouper attributes that were tested to 25 respondents that are gill color and price level. After the stages of the determination of the attributes were done the level of attributes then also determined. Santoso (2012) stated that the factors are specific attributes while the levels are parts of an object's factor. The attribute and attribute level determination is shown in Table 4.11 which presents 2 grouper attributes with 5 level attribute of which 1 attribute has 2 levels and another one has 3 levels.

Table 4.11 Attribute and Attribute Level of grouper

No	Attribute of grouper	AttributLevel		
		1	2	3
1	Gill color	Normal	Abnormal	-
2	Price	High	medium	low

The process of grouper stimuli construction using orthoplast process resulted in 6 attributes combinations. All 6 combinations were further tested to 25 respondents by scoring each combination of stimuli based on their favorite level; 5 as a highly preferred combination and 1 as a very unlikely combination.

3. Result Interpretation

The result of conjoint analysis showed that the importance value (NKT) and relative importance value (NRP) or importance value of the attribute. NRP shows the importance value of two attributes exist for marketing institutions, whereas NKT indicate which level of attribute is preferred by marketing institutions. In addition, it also obtained the average preference of marketing institution for 6 combinations of grouper attributes tested to the marketing institutions. The average preference of the marketing institution indicated a constant number in the utility table on the result of conjoint analysis in Table 4:15 that is equal to 3,277. The figure can be classified with the notation of "quite like", it refers to the Likert scales made in the process of preference measurement that are; 1 for very dislikes, 2 for dislikes, 3 for quite like, 4 for like, and 5 for very like. This indicated that the average combination of attributes in the stimuli process is quite favored by the marketing institution.

The complete average value of consumer preferences, as well as NKT and NRP value is shown in Table 4.12, or separately the value also shown in Appendix 7 which is the result of conjoint analysis.

Table 4.12 Estimation of utility and relative importance value

No	Factor (Attribute)	Level	Estimasion of Utility	relative importance value (%)
1	Warna	Normal (MerahMaron)	0,573	42.093
		Tidak Normal (merahkecoklatan/puct)	-0,573	
3	Harga	Mahal	-0,707	57.907
		Sedang	-0,247	
		Murah	0,953	
(Constant) : 3.227				

Table 4.12 shows the importance value (estimated value of utility) and NRP (Relative importance value) is as follows:

1. Color factor. The color attribute is the second important attribute for the respondents in groupers preference. The relative importance level of the color attribute was 42.093%. The color attribute has two levels, normal with NKT of 0.573 and abnormal with NKT of -0.573. The positive and negative value indicated that those normal colors are preferred by respondents rather than abnormal colors. Factors that have only two levels have the same estimated utility value. This is because the respondent must choose one of only two choices so that when the respondent chooses a normal color the respondent automatically does not choose an abnormal color. This preference also revealed that the marketing institutions categorized grouper with a normal color as a good quality, while the grouper with abnormal color as a low quality.
2. Price factor. The price attribute is the second most important attribute for the respondents in grouper preference, in which the price attribute has a relative importance value of 57.907%. The price attribute has three levels that are high with NKT of -0.707, while with NKT of -0.247 and cheap with NKT of 0.953. This suggested that the price of cheap grouper is preferred by the respondent rather than the high or moderate price. This preference indicated that the marketing institution prefer to the low prices but while considering the grouper quality.

The explanation of the relative importance of each attribute and the utility estimate of each grouper level in Tanggetada Sub-district Kolaka district concluded that the grouper marketing institution prefer a grouper with normal color with a cheap price.

4. Calculation of Predictive Accuracy and Significance Test

Santoso (2012) stated that the analysis of conjoint also aimed to estimate the respondents' opinion patterns. The estimation results will be compared with the actual respondent's opinion. The estimation results should be not much different with the respondent's opinion.

The process of comparison between estimates and actual opinion is called predictive accuracy, which measures the accuracy of predictions. The test of the prediction accuracy was done by measuring the correlation.

The accuracy of prediction rates is known through correlation measurements either using Pearson or Kendall method. The correlation number greater than 0.5 indicates a strong relationship between estimated and Actual or the predictive accuracy of the conjoint process is high. The significance of the correlation can also be seen by its significance value of which categorized significant once the significant number is smaller than 0.05. Table 4.13 shows the correlation value of the conjoint analysis.

Table 4.13 Correlation value of the Conjoint analysis.

Correlations ^a		
	Value	Sig.
Pearson's R	0,971	0,001
Kendall's tau	0,867	0,007

Table 4:16 shows that the value of Pearson and Kendall correlation values reveal the value greater than 0.5, that are 0.971 and 0.867 respectively, with significance values below 0.05, that are 0.001 (Pearson) And 0.007 (Kendall). These indicated that the two attributes of grouper could precisely predict the preferences of the marketing institution (collectors and retailer).

D. Conclusion

Based on the results of the study analysis, it can be concluded that the grouper marketing institution are preferred to fish with normal gill color (red maroon) with a cheap price.

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