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ANALYSIS OF CONSUMER PREFERENCES TOWARDS SOY MILK IN SIDODADI VILLAGE, KEJURUAN MUDA DISTRICT, ACEH TAMIANG REGENCY

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Abstract

Soy milk is one of the processing products which is the result of soybean extraction. Soy milk has a balanced combination of nutrients, which is almost similar to cow's milk but is free of gluten, cholesterol and lactose. The soy milk in Sidodadi Village consists of 2 types of soy milk businesses, namely Cita Rasa soy milk and Halalan Toyyiban soy milk which have different qualities and tastes. The population in this study was consumers of Cita Rasa and Halalan Toyyiban soy milk, the respondents in this study were 60 respondents. This research aims to determine consumer preferences regarding the combination of soy milk product attribute levels and the level of importance of soy milk product attributes in purchasing decisions for soy milk in Sidodadi Village, Vocational Youth District, Aceh Tamiang Regency. This research method uses a quantitative descriptive method using conjoint analysis. The attributes that consumers consider are brand, flavor variants and texture. The results of this research show that the combination of soy milk attribute levels is consumer preference based on utility value, namely soy milk with the Halalan Toyyiban brand (0.008), original taste (0.328), thick texture (0.02). The attributes most considered when purchasing soy milk products based on relative importance (NPR) are first the attributes of taste (72,982), brand (14,446), and texture (12,571).

Keywords: Conjoint Analysis, Consumers, Preferences, Soy Milk.

1. INTRODUCTION

The agricultural sector is one of the sectors that plays a very large role in economic growth in Indonesia. The agricultural sector is still a mainstay sector in creating jobs with a fairly large number when compared to other sectors for the economy in Indonesia. Indonesia is one of the countries that has natural resources in the form of relatively large and fertile land with a climate, temperature and humidity that are suitable for the needs of staple food crop growth, so almost all of these staple food crops (grains, tubers and nuts native to Indonesia) can grow relatively well. One type of food crop needed by most of the Indonesian population is soybeans (Andarwulan, 2018).

Soybeans are one type of high-calorie legume, a source of fat, vitamins, and minerals which is one of the most important sources of vegetable protein because soybeans contain complete essential amino acids (Scholichah Rohmani, et al, 2018). According to (Damayanti and Murtini, 2018) the protein content of soybeans is quite high, which is 30.44% compared to other types of beans. A source of food intake that has a fairly high nutritional value is soybeans. There are many types of foods and drinks that are processed from soybeans, one of which is soy milk.

Soy milk has a balanced combination of nutrients, which is almost similar to cow's milk but is free of gluten, cholesterol, and lactose (Riska, et al, 2020). The protein content of soybeans is about twice the protein content of meat, which is around 40% while the protein content of meat is around 18%. Soy milk is one of the processed products which is the result of soybean extraction. Soy milk protein has an amino acid structure that is almost the same as cow's milk, so soy milk is often used as a substitute for cow's milk. According to (Budi, 2007) soy milk is a highly nutritious

drink, especially because of its protein content, besides soy milk also contains fat, carbohydrates, calcium, phosphorus, iron, provitamins, vitamin B complex (except B12), and water.

Aceh Province has quite a large potential, there are many home industries engaged in the processing of soybean raw materials which are then processed into raw materials for food and beverages, processed from soybean raw materials in the form of tofu, tempeh, soy milk, oncom, tauco and others. One of them is in Aceh Tamiang which has the highest number of industrial businesses according to the field of business, namely the food sector compared to other industrial businesses, namely 322 businesses, one of which is the soybean-based food processing industry, for example tempeh, tofu, soy milk, oncom and others (Office of Cooperatives, SMEs and Industry of Aceh Tamiang, 2020).

Soy milk in Sidodadi Village consists of two types of businesses, namely Cita Rasa Soy Milk and Halalan Toyyiban Soy Milk, which have differences in quality and taste. These two businesses also have different prospects and opportunities. The use of soybean raw materials in the Cita Rasa Soy Milk business reaches around 5 kg per day, while the Halalan Toyyiban Soy Milk business uses around 10 kg of soybeans per day. The resulting product is ready-to-drink soy milk with various flavors.

Table 1. Cita Rasa soy milk production data in 2024

Month	Soybean Raw Material (Kg/Month)	Soy Milk Production (Package)
1	150	15,000
2	150	15,000
3	150	15,000
4	150	15,000
5	150	15,000
6	150	15,000

Source: Processed Primary Data (2024)

Based on table 1, it can be seen that the production of Cita Rasa soy milk business in 2024 uses 150 kg of soybean raw materials per month, with a total production reaching 15,000 packs of soy milk.

Table 2. Halalan Toyyiban soy milk production data in 2024

Month	Soybean Raw Material (Kg/Month)	Soy Milk Production (Package)
1	300	24,000
2	300	24,000
3	300	24,000
4	300	24,000
5	300	24,000
6	300	24,000

Based on table 2, the production results of the Halalan Toyyiban soy milk business in 2024 use 300 kg of soybeans per month as raw material, with a total production reaching 24,000 packs of soy milk. Every day, this business uses 10 kg of soybeans to produce 800 packs of soy milk. However, if there are additional orders, production can increase to 10-17 kg of soybeans per day.

Consumers of soy milk in Sidodadi Village tend to buy products based on the brands they like. Consumers who like Cita Rasa soy milk will choose that product, while those who like Halalan Toyyiban soy milk will buy Halalan Toyyiban products. There are also consumers who buy both products, both Cita Rasa soy milk and Halalan Toyyiban. Each individual has their own preferences in determining choices to meet their needs. Based on the background above, it is

necessary to conduct a Consumer Preference Analysis of Soy Milk in Sidodadi Village, Kejuruan Muda District, Aceh Tamiang Regency.

2. LITERATURE AND THEORETICAL REVIEW

Agroindustry is an economic activity that utilizes agricultural products as raw materials to be processed into final products or other industrial raw materials. The agroindustry process involves changing and preserving through physical or chemical treatment, storage, packaging, and distribution. The main goal of agroindustry is to increase the efficiency of agricultural production through modernization of technology and agriculture, so that it can produce profitable products. One of the agroindustries that is currently developing is the processing of agricultural products that produce food and beverages because it is considered easy to do business. The type of product that is widely developed by small businesses is drinks, one of which is soy milk.

Preference is a condition when consumers make decisions about interests. Preference means choice or choosing. Consumer preference is a choice of consumer likes or dislikes for a product, either goods or services that are consumed or used (Schifman and Kanuk, 2000). Consumer preferences arise in the alternative evaluation phase of the purchasing decision process faced by consumers for different products and services and different activities. Consumer preferences can be known by measuring the level of usefulness and relative importance of each attribute contained in a product.

Attributes are factors that consumers consider in making decisions about purchasing a brand product or product category. Product attributes are properties or characteristics possessed by a product. In other words, product attributes are everything that makes a product unique and different from other products. According to (Kotler, 2017) product attributes consist of characteristics or features that can be seen, felt or measured by consumers.

3.IMPLEMENTATION METHOD

This research was conducted in the agro-industry of Cita Rasa soy milk and Halalan Toyyiban soy milk. The selection of the research location was done intentionally (purposive) with the consideration that in Sidodadi Village there are two soy milk businesses where this soy milk is in great demand by the community. The objects of this research are soy milk business owners and consumers who buy Cita Rasa soy milk and Halalan Toyyiban soy milk in Sidodadi Village, Kejuruan Muda District, Aceh Tamiang Regency. Then the scope of this research is limited to analyzing consumer preferences for purchasing soy milk in Sidodadi Village, Kejuruan Muda District, Aceh Tamiang Regency.

This study uses primary data and secondary data. Primary data is data taken directly from the research object by conducting observations, interviews, and direct observations with producers and consumers of soy milk using a prepared questionnaire. While secondary data is obtained from literature studies or related institutions such as books, scientific publications (journals), and literature related to the research title.

This research method uses a quantitative descriptive method using conjoint analysis. Quantitative descriptive is a type of research that describes variables supported by data in the form of real conditions. Conjoint analysis is used to answer the question of how important a number of attributes of a soy milk product are. Conjoint analysis is a technique used specifically to determine

the attributes that are the preferences and attributes that are most considered by soy milk consumers.

This study uses conjoint analysis to measure the utility value and relative importance value of each attribute. This utility value indicates consumer preference for the level of an attribute where the highest utility value of a level tends to be preferred by consumers while the relative importance value indicates an indication of the order of attributes that are most considered in purchasing Cita Rasa soy milk and Halalan Toyyiban soy milk. In this analysis, consumers are asked to make a ranking, namely consumers choose an attribute that is most preferred by sacrificing other attributes at the same time. Thus, consumers will create a combination of attribute sequences from most preferred to least preferred. The steps of conjoint analysis are as follows:

1) Determine the design of attributes and levels that are considered important. Table 3. Attributes and Attribute Levels

No	Attribute	Level
1	Brand	Taste Halal and lawful
2	Flavor Variants	Original Strawberry Durian Chocolate Pandanus Wine
3	Texture	Thick Not Thick

Source: Processed Primary Data (2024)

2) Designing stimuli, the combination of attributes with attribute levels is called stimuli. The stimulus card or combination of soy milk products that have been designed can be seen in the following table:

Table 4. Stimuli

No	Brand	Flavor Variants	Texture
1	Halal and lawful	Chocolate	Not Thick
2	Taste	Original	Not Thick
3	Halal and lawful	Original	Not Thick
4	Taste	Chocolate	Thick
5	Taste	Wine	Not Thick
6	Taste	Strawberry	Thick
7	Taste	Pandanus	Not Thick
8	Halal and lawful	Pandanus	Thick
9	Halal and lawful	Strawberry	Not Thick
10	Halal and lawful	Original	Thick
11	Halal and lawful	Strawberry	Thick
12	Halal and lawful	Wine	Thick
13	Taste	Original	Thick
14	Halal and lawful	Durian	Not Thick
15	Taste	Durian	Thick
16	Taste	Strawberry	Not Thick

Source: Results of SPSS 26 Statistical Processing

3) Determining the data collection method, there are two approaches that can be used in data collection, namely non-metric data and metric data.

4) Collecting respondents' opinions on each existing stimulus. This consumer opinion is called utility, which is expressed in numbers and is the basis for calculating conjoint analysis.

5) By conducting a conjoint analysis procedure, after obtaining consumer opinions through ranking the stimuli provided, the conjoint analysis process is then carried out.

4. RESULTS AND DISCUSSION

4.1 Consumer Characteristics

Respondent characteristics are used to describe the identity of respondents according to the identified research sample. Respondent characteristics (consumers) in this study include gender, age, education, income, and number of dependents.

Table 5. Consumer characteristics by gender

No	Gender	Number of people)	Percentage %
1	Man	24	40
2	Woman	36	60
Total		**60**	**100**

Based on Table 5, it can be seen that out of 60 consumers who bought soy milk in Sidodadi Village, 24 were male with a percentage of 40%, while 36 were female with a percentage of 60%. Female consumers buy more soy milk, this shows that they tend to pay more attention to the nutritional needs of all family members to meet family consumption needs.

Table 6. Consumer characteristics based on age

No	Age (Years)	Number of people)	Percentage %
1	17-25	12	20
2	26-45	21	35
3	> 45	27	45
Total		**60**	**100**

Based on table 6, the age above 45 years is 27 people with a percentage of 45%. So with the largest percentage, it is concluded that the most respondents who buy soy milk are the age group over 45 years with a percentage of 45%. This shows that consumers who buy soy milk with an age range of >45 years are more aware of a healthy lifestyle and want to buy soy milk as a healthier choice because soy milk is low in fat, cholesterol-free and can maintain health (Mayarni et al, 2020).

Table 7. Consumer characteristics based on education level

No	Level of education	Number of people)	Percentage%
1	SD	6	10
2	JUNIOR HIGH SCHOOL	6	10
3	SENIOR HIGH SCHOOL	27	45
4	S1	20	33
5	S2	1	2
Total		**60**	**100**

In Table 7, it can be seen that respondents who buy soy milk have different levels of education. Most respondents have a high school education of 27 people with a percentage of 45%. This shows that most consumers have a fairly high level of education, namely having graduated from 9 years of compulsory education.

Table 8. Consumer characteristics based on occupation

No	Work	Number of people)	Percentage%
1	Employee	18	30
2	civil servant	5	8
3	Teacher	9	15
4	Self-employed	7	12
5	Farmer	6	10
6	Businessman	11	18
7	Honorary	4	7
	Total	**60**	**100**

In table 8, it can be seen that the most soy milk consumers are people who work as employees, which is 18 people with a percentage of 30%. Occupation is a respondent characteristic that greatly influences purchases because from the occupation it will be seen how much income the respondent earns.

Table 9. Consumer characteristics based on income

No	Income (Rp)	Number of people)	Percentage %
1	Height > 3,500,000	15	25
2	Medium > 2,500,000 – 3,500,000	26	43
3	Low < 2,500,000	19	32
	Total	**60**	**100**

Based on the income level in table 9, it can be seen that the respondents who consume the most soy milk are at the income level> Rp.2,500,000-Rp.3,500,000 as many as 26 people with a percentage of 43%. This shows that soy milk consumers come from the middle income category, because the price of soy milk is affordable so that consumers can meet their needs to buy soy milk.

Table 10. Consumer characteristics based on number of dependents

No	Number of Dependents (Persons)	Number of people)	Percentage %
1	1 - 5	49	82
2	> 5	11	18
	Total	**60**	**100**

Based on table 8, it can be seen that soy milk consumers are dominated by the number of dependents 1-5 as many as 49 people with a percentage of 82%. The number of dependents has a fairly large role and can influence consumer decisions in purchasing soy milk products. Especially because it is related to the budget, priority needs, and consumption preferences of family members.

4.2 Consumer Preferences

Consumer preference is a ranking process to determine the level of consumer preference for the selected attribute level, at this stage consumers are faced with attributes ranging from the most preferred to the least preferred based on the attributes and attribute levels so that they become the basis for consumers in choosing attributes of processed soy milk products. It can be concluded that consumer behavior is a decision taken and chosen by consumers from a variety of available choices.

1. Utility Value at Each Attribute Level

Utility value is a preference value chosen by consumers for the attribute level in a product (Arikunto, 2002). A positive value (+) indicates the level of consumer preference for an attribute level in a product, while a negative value (-) indicates the level of consumer dislike for an attribute level in a product.

Table 11. Utility value of each attribute

		Utility Estimate	Std. Error
Brand	Taste	-.008	.028
	Halal and lawful	.008	.028
Flavor	Original	.328	.054
	Strawberry	-.234	.054
	Durian	-.105	.070
	Chocolate	.162	.070
	Pandanus	.153	.070
	Wine	-.305	.070
Texture	Thick	.002	.028
	Not Thick	-.002	.028
(Constant)		3.363	.029

Source: Results of processing statistics SPSS 26

Based on table 11, the interpretation results related to utility can be seen as follows:

1. Brand attributes, the utility value of the brand attribute can be seen, namely consumers prefer Halalan Toyyiban soy milk with a utility estimate value of 0.08 while Cita Rasa soy milk has a utility estimate value of -0.08. This shows that consumers tend to prefer halalan toyyiban soy milk products.
2. Taste attribute, it can be seen that the utility estimate value for each attribute and attribute level is different. At the original attribute level, it has the highest utility estimate value of 0.328. Original is a variant of soy milk drink flavor which is the result of processing soybeans made by extracting soybeans. So that the original flavor variant has a distinctive and unique taste without additional colors and other flavors. This is what causes the high utility estimate value for the original flavor variant of soy milk. While the lowest value is in the grape flavor variant, which is -0.305. This is because consumers do not like soy milk mixed with grape flavor.
3. Texture attributes, consumers also pay attention to the texture of soy milk because consumer tastes vary, some like thick textures and some like non-thick textures. In

this study, consumers prefer the texture of thick soy milk with a utility estimate value of 0.02 while the non-thick texture has a utility estimate value of -0.02. Consumers in this study prefer the texture of thick soy milk because they can taste the soy milk better compared to non-thick ones which contain more water so that the taste of soy is reduced.

2. Relative Importance Value (NPR) of Each Attribute

Relative importance value (RIM) is the overall level of importance found in the conjoint analysis section that explains the level of consumer preference for consumer preferences and interests in soy milk products in Sidodadi Village. The highest attribute importance value indicates that the attribute is considered more by consumers in making decisions to purchase soy milk products. From the results of the analysis, the importance value of each attribute is obtained. The relative importance value of each attribute can be seen in the following table:

Table 12. Relative importance of each attribute

No	Attribute	NPR
1	Flavor	72,982
2	Brand	14,446
3	Texture	12,571

Source: Results of processing statistics SPSS 26

Based on the table above, it is known that the level of importance of the first attribute that is most considered is taste with an NPR value of 72.982. This shows that consumers prioritize taste in buying products compared to other attributes. Taste is considered important because soy milk comes in various variants, such as original, strawberry, durian, chocolate, pandan, and grape. Because consumers pay more attention to taste before buying soy milk products, soy milk products in Sidodadi Village are expected to continue to maintain and develop unique flavor combinations to attract more consumers.

The second consideration chosen by consumers in purchasing soy milk based on the level of attribute importance is the brand attribute with an NPR value of 14.446. Meanwhile, the third consideration is the texture attribute with an NPR value of 12.571.

3. Validity Test

To find out whether there is a significant and insignificant relationship or the strength and weakness of the relationship between stimuli/combinations of the levels of attributes tested with consumer preference assessments obtained in the field, a validity test is carried out. The research data obtained between the combination of attributes and consumer preferences for soy milk products are said to be valid and reliable if the correlation value is in accordance with the previously determined category. To obtain validity results by looking at the Pearson'R and Kendall's tau values and significant values can be seen in the following table:

Table 13. Validity Test Results

Correlations	Value	Sig.

Pearson's R	.952	.000
Kendall's know	.790	.000

Source: Results of processing statistics SPSS 26

Based on table 15, it can be seen that the correlation results of Pearson's R are 0.952 and Kendall's tau are 0.790, meaning that there is a very strong relationship between the results of the attribute combination research and consumer preferences. The predictive accuracy value at the Pearson's R rank is 0.000 and Kendall's tau is 0.000. The results of this study can be concluded that this study is valid, because the predictive accuracy value at Pearson's R and Kendall's tau is smaller than the error rate of 0.05, thus providing a significant value.

5. CONCLUSION

5.1 Conclusion

The results of the consumer preference analysis show that the product attribute levels that are consumer preferences for soy milk products in Sidodadi Village are Halalan Toyyiban products, original flavor variants, and thick textures. The attributes that are most considered in purchasing soy milk products in Sidodadi Village are taste, product, and texture attributes. This can be seen from the respective NPRs, namely the taste NPR value (72.982), the product NPR value (14.446), and the texture NPR value (12.571). The combination of attributes that are consumer preferences for soy milk products in Sidodadi Village are original flavors, Halalan Toyyiban products, and thick textures.

5.2 Suggestions

The suggestions that can be given from the results of the study on consumer preferences for soy milk in Sidodadi Village, Kejuruan Muda District, Aceh Tamiang Regency can be concluded as follows:

1. It is recommended for producers to maintain the quality of soy milk products that are consumer preferences, one of which is the taste and texture variants of soy milk in order to get a distinctive taste so that it can provide consumer satisfaction in consuming soy milk.
2. It is recommended for manufacturers to develop and increase attribute levels so that there are many choices and provide consumer satisfaction.
3. It is recommended that the government pay more attention to the development of MSMEs, the government can provide skills and management training to MSME actors to improve product quality.

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