

CONSUMER PREFERENCES FOR WARNO TOFU IN AEK PINING VILLAGE, BATANG TORU DISTRICT, SOUTH TAPANULI REGENCY, NORTH SUMATERA

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Abstract

This research was conducted in Aek Pining Village, Batang Toru District, South Tapanuli Regency, North Sumatra at the Warno Tofu Industry. This study aims to determine what attributes are consumer preferences for Warno Tofu and determine which attributes are most considered by consumers in making purchasing decisions for Warno Tofu. The data used in this study are primary and secondary data. The sampling technique was carried out by chance (accidental sampling). The data analysis methods used are Chi-Square and Multiattribute Fishbein analysis. The results showed that the attributes of tofu that influence consumer preferences in purchasing Warno's Tofu are flavor and durability attributes. It can be seen from the results of the Chi-Square analysis that the taste attribute (0.004) and durability (0.028) have a Sig value < α value (0.05), so H_0 is accepted, meaning that the taste and durability attributes affect consumer preferences for purchasing Warno Tofu. The attribute of tofu that is most considered in the decision to purchase tofu is the flavor attribute. The order of attributes that become consumer attitudes in purchasing tofu are taste, durability, price, texture and size.

Keywords: Chi-Square, Consumers, Multiattribute Fishbein, Preferences, Tofu

1. INTRODUCTION

The Indonesian economy shows significant dependence on the agricultural sector as the main driver of economic growth. In an effort to increase the contribution of the agricultural sector, the focus is given to developing agriculture as a resilient sector, capable of providing important support for the industrial sector. This support does not only include cultivation activities (on-farm agribusiness) alone, but also involves further processing or activities in the downstream sector (off-farm agribusiness). This step aims to produce various processed agricultural products with higher added value (Triputra, 2011).

The food processing industry is an important component of the food system, connecting the production and consumption sides. Indonesia is known for its local food products processed both in modern and traditional ways, creating abundant product diversity (Hariyadi, 2023). Soybeans are one of the main agricultural products that are the focus of the development of the agro-industrial sector. Soybeans are not only an important food commodity, but also the main raw material in the food industry. As the main source of vegetable protein, the demand for soybeans continues to increase every year, contributing to efforts to improve the quality of Indonesian human resources (Muchtadi, 2010).

There are three home industries that produce tofu from soybeans in Aek Pining Village. The Tahu Warno Industry is one of the tofu industries with the lowest production capacity. The production volume of Tahu Warno has decreased since 2018 to 2022, especially since the Covid-19 pandemic hit. In addition to being affected by the pandemic, this decrease in production was also caused by the decreasing number of retailers who were previously regular customers. As a result,

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until now the production volume of Tahu Warno has only reached 20 Kg per day, far below the production capacity before the pandemic.

Consumer preference is a person's choice of likes or dislikes for a product to be consumed. Consumer preferences for Warno Tofu Industry's production reflect unique dynamics in the local market. Although its production capacity is lower compared to other tofu industries, consumer preferences can be influenced by product attributes such as taste, texture, size, price and tofu durability.

Increasing competition in marketing encourages producers and marketers to develop effective and appropriate marketing strategies in marketing the products they produce. Producers and marketers need to know consumer tastes when deciding whether they like a product or not. This is because before making a purchase of a product, consumers consider and pay attention to the physical characteristics (attributes) related to the product according to their preferences to obtain satisfaction (Wijayanti, 2011).

2. LITERATURE AND THEORETICAL REVIEW

Consumer preference is the choice of whether or not someone likes a product (goods or services) consumed. Preferences indicate consumer preferences regarding various product choices available. Understanding consumer preferences aims to continue marketing strategies that are sustainable so that the goods or services sold or marketed remain in demand by consumers (Aiman et al., 2017). Consumer appeal usually begins with looking at the physical attributes displayed by a product, for example tofu products, attributes of tofu include taste, texture, size and durability of tofu products.

Consumer behavior is the actions taken by behavior related to the decision-making process in obtaining, using and disposing of consumed products. Consumers can differ in terms of gender, social status and age which will affect the way consumers carry out the selection process to not using the consumed products (Fachrurazi et al., 2023).

Tofu is one of the food products that is very popular in Indonesian society. Indonesian people are used to consuming tofu as a protein supplement, a side dish with rice or as a snack. Tofu is a very popular food because it tastes good and is relatively cheap. Tofu is made from soybean extract which is then processed into tofu that is consumed daily (Primaleon, 2020).

Product attributes are characteristics or aspects contained in a product that then become determinants and considerations for consumers to like the product and then buy it. Product attributes can be divided into two parts, namely: technical attributes (functional) and non-technical attributes (emotional). Technical attributes on a product only show the utility of the product. While non-technical attributes, not only show utility but also the differentiating power and attractiveness of a product (Sungkawa et al., 2016).

3. IMPLEMENTATION METHOD

This research was conducted in Tahu Warno Industry. The determination of the research location was done intentionally (purposive), with the consideration that Tahu Warno Industry is an industry with the lowest production capacity in Aek Pining Village. The object of this research is consumers who buy Tahu Warno. The data used in this research are primary data and secondary data. Primary data was obtained from a direct survey to consumers who buy Tahu Warno through interview techniques using a questionnaire. Secondary data in this research was obtained from literature studies, books, journals, theses and scientific publications.

The sampling technique was done by chance (accidental sampling). The number of samples in this study was 35 samples with the criteria that respondents or consumers had bought or consumed Tahu Warno at least 3 times a month. The data analysis method used was chi-square analysis and fishbein multiattribute.

Chi-square analysis is used to determine consumer preferences for tofu products purchased by consumers. The basic formula for this calculation is:

$$x^2 = \sum_{i=1}^k \left[\frac{(fo - fe)^2}{fe} \right]$$

Information:

- x² = Chi Square
- fo = frequency observed in the study
- fe = expected frequency in the study
- i...k = attribute category in variable

The Fishbein multi-attribute method is used to determine which attributes consumers consider most when purchasing tofu products, with the following formula:

$$Ao = \sum_{i=1}^n bi \cdot ei$$

Information:

- Ao: Consumer attitudes towards Tahu Warno.
- bi: consumer confidence level that Tahu Warno has a certain attribute (attribute i).
- ei: consumer evaluation of the I variable owned by Tahu Warno.
- n: the number of attributes that Tahu Warno has.

4. RESULTS AND DISCUSSION

4.1 Consumer Preferences for Tofu Attributes

Consumer preference is a person's choice of likes or dislikes for a marketed product. These choices can vary from one respondent to another (Larasasty, 2023). Consumer preference for Tahu Warno can be seen from the frequency of consumers choosing the tofu attributes studied.

4.1.1 Chi-square analysis

Chi-square analysis is used to determine consumer preferences for products that will be purchased by consumers. From the chi-square analysis, it can be seen that consumer preferences for Tahu Warno show the results in Table 1.

Table 1. Results of chi square analysis

	Flavor	Texture	Price	Size	Durability
Chi Square	8.257a	.029a	.029a	.257a	4.829a
Df	1	1	1	1	1
Asymp. Sig.	.004	.866	.866	.612	.028

Source: Primary data, processed 2024

Based on Table 1, it shows that of the five attributes observed, there are 2 attributes in this study that are significantly different in the 95% confidence level, namely the taste and durability attributes, which means the Sig value α value (0.05) then H₀ is accepted,

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meaning that the taste and durability attributes influence consumer preferences for purchasing Tahu Warno. While the texture, price, and size attributes have Sig values $> \alpha$ values (0.05) then H_0 is rejected, meaning that the texture, price, and size attributes do not influence consumer preferences in purchasing Tahu Warno.

4.2 Consumer Beliefs and Evaluations of Tofu Attributes

Consumer attitudes towards tofu are based on the consumer's own assessment of the attributes possessed by the tofu being studied. The assessment in question concerns two things, namely the belief that tofu has certain attributes of taste, texture, price, size and durability and the evaluation of these attributes. One model of the attitude approach to multi-attributes is the Fishbein model. Fishbein's multi-attribute analysis is known for the magnitude of the consumer attitude index so that it can be seen that the attributes considered by consumers in purchasing tofu are in sequence from the most considered to the least considered. The consumer's beliefs and evaluations of tofu attributes are as follows:

4.2.1 Consumer (bi) Confidence

Respondents' beliefs are respondents' knowledge of tofu attributes and the benefits of these attributes. Consumer beliefs can be seen in Table 2 below:

Table 2. Consumer confidence (bi) in tofu attributes

No	Attribute	Frequency of Each Attitude Value					Total Value	Average
		1	2	3	4	5		
1	Flavor	0	0	10	22	3	35	3.80
		0	0	30	88	15	133	
2	Texture	0	0	19	13	3	35	3.54
		0	0	57	52	15	124	
3	Price	0	0	5	26	4	35	3.97
		0	0	15	104	20	139	
4	Size	0	0	13	22	0	35	3.63
		0	0	39	88	0	127	
5	Durability	0	0	14	19	2	35	3.66
		0	0	42	76	10	128	

Source: Primary data, processed 2024

Based on Table 2, it shows that what is believed best by Tahu Warno consumers is the price attribute with an average value of 3.97 or it can be said that consumers have confidence that the price of tofu purchased by consumers is an affordable tofu price. While the attribute that is less believed by Tahu Warno consumers is the tofu texture attribute with an average value of 3.54.

4.2.2 Consumer Evaluation (ei)

The analysis of the evaluation of the level of importance is an analysis that shows the level of importance of the attributes owned in tofu that are considered important by respondents. The results of consumer evaluation of tofu attributes can be seen in Table 3 below:

Table 3. Consumer evaluation (ei) of tofu attributes

No	Attribute	Frequency of Each Attitude Value					Total Value	Average
		1	2	3	4	5		
1	Flavor	0	0	3	23	9	35	4.17
		0	0	9	92	45	146	
2	Texture	0	2	17	14	2	35	3.46
		0	4	51	56	10	121	
3	Price	0	2	18	14	1	35	3.40
		0	4	54	56	5	119	
4	Size	0	7	22	6	0	35	2.97
		0	14	66	24	0	104	
5	Durability	0	2	0	21	12	35	4.23
		0	4	0	84	60	148	

Source: Primary data, processed 2024

Based on Table 3, it shows that the durability of tofu is the attribute that has the highest level of importance in the decision to purchase tofu or consumers consider that the durability attribute is the most important or primary attribute to pay attention to in determining the decision to purchase tofu.

4.2.3 Consumer Attitude (Ao)

After knowing the confidence level score (bi) and the evaluation of the level of importance, the attitude value (Ao) towards tofu will be obtained by multiplying the confidence assessment number (bi) and the consumer evaluation value (ei). This attitude value (Ao) shows the consumer's assessment of the attributes inherent in tofu including taste, texture, price, size and durability. The value of the consumer attitude index (Ao) towards tofu can be seen in Table 4.

Table 4. Consumer attitudes towards tofu

No	Attribute	Belief (bi)	Evaluation (ei)	Consumer Attitudes (Ao)	Ranking
1	Flavor	3.80	4.17	15.85	I
2	Texture	3.54	3.46	12.25	IV
3	Price	3.97	3.40	13.50	III
4	Size	3.63	2.97	10.78	V
5	Durability	3.66	4.23	15.46	II

Source: Primary data, processed 2024

In addition to being in the form of a table, the results of consumer attitudes can also be presented in the form of a graph to see the attributes of tofu that are most considered in the purchase decision of Tahu Warno. The following are the results of consumer attitudes towards tofu in the form of a graph, namely:

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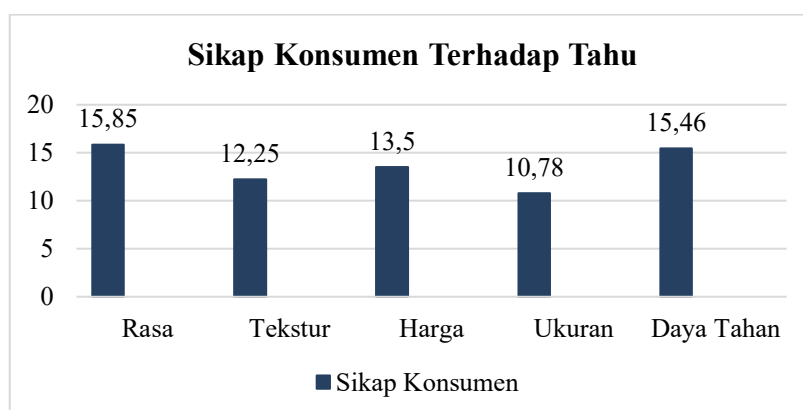


Figure 1. Diagram of consumer attitudes towards tofu

Based on Table 4 and Figure 1 above, it is known that the tofu attribute that is most considered in the purchasing decision of Tahu Warno is taste. The order of attributes from the most considered to the least considered is the taste attribute with a consumer attitude index value (Ao) of 15.85. The second attribute is durability which is worth 15.46. The third attribute is price which is worth 13.50. The fourth attribute is texture which is worth 12.25 and the last is the size attribute with a consumer attitude index value (Ao) of 10.78.

Based on the results of the analysis conducted on the five observed attributes consisting of taste, texture, price, size and durability of tofu, it shows that the Warno Tofu Industry products offered are in accordance with consumer tastes.

Some of the reasons consumers buy Tahu Warno products are as follows:

1. Taste Attribute

Taste is a series of consumer assumptions and impressions about the satisfaction obtained from the taste of tofu, taste is a factor that is evaluated by consumers, where consumers will evaluate several products consumed to find out which products are in accordance with preferences. Tofu basically has a bland taste, so it is easy to absorb spices and herbs in the processing process.

The taste attribute is the attribute that consumers consider most when buying a product. In this study, the taste attribute has a score of 15.85 (Table 19), this shows that consumers really like the taste of tofu offered by the Warno Tofu Industry. Warno Tofu has a bland taste like tofu in general, the taste of the tofu offered does not have a sour taste so it makes it easy to process tofu, because the bland taste is easy to combine with various cooking spices.

2. Endurance Attribute

Tofu is one of the processed soybean products that has a fairly high water content, so it is susceptible to damage if not stored properly. Tofu has a short shelf life and rots quickly. Tofu requires soaking, so it is easily contaminated by soaking water and air. This condition causes tofu to become sour and rotten. The durability that consumers prefer is tofu that can last between 1-2 days, because tofu that can last between 1-2 days is tofu that does not use preservatives (Rahmawati, 2013).

The durability attribute is the 2nd attribute considered by consumers in purchasing Tahu Warno products. The durability attribute has a score of 15.46 (Table 19). Tahu Warno products can last between 1-3 days if stored at room temperature. However, basically tofu can be stored for more than 3 days or even up to a week according to the consumer's own treatment in the storage process. For example, changing the water hose every other day until it is ready to be consumed.

3. Price Attributes

Price is an important consideration for many consumers, as consumers tend to judge whether the price of tofu is comparable to the quality offered. Consumers will tend to choose tofu that is priced according to their budget, while still considering quality. A higher price will be acceptable if the tofu has better quality, but a price that is too high without significant advantages can make consumers choose other, more affordable products. A lower price but still good quality can be a big attraction for price-sensitive consumers.

Price attribute is the 3rd attribute considered by consumers in purchasing Tahu Warno. The price attribute has a score of 13.50 (Table 19). The price of Tahu Warno is relatively more affordable than the price of other tofu, but price is not the main reference for consumers in purchasing Tahu Warno.

4. Texture Attributes

Texture is a series of assumptions about the physical tofu that consumers feel when biting or chewing tofu. This includes the level of elasticity, softness, hardness and density of tofu. According to (Andarwulan et al., 2018) tofu texture is an equally important quality attribute that can affect product acceptance. In this study, the texture attribute is the 4th attribute considered by consumers.

The texture attribute has a score value of 12.25 (Table 19). Tahu Warno has a dense and soft texture, Tahu Warno also has a texture that expands when fried. Consumers like this kind of tofu texture because it makes it easier for consumers to process tofu because it is not easily broken.

5. Size Attribute

Tofu size is a physical attribute of tofu that includes the dimensions or volume of the product, such as length, width, and thickness or weight. Tofu size is usually measured per piece (eg small, medium, large). This tofu size determines how much tofu consumers get in one purchase. In this study, size is the last attribute considered in purchasing Warno tofu products. The size attribute has a score value of 10.78 (Table 19).

Small tofu is more practical for individual consumption or used as a cooking ingredient that does not require many portions. On the other hand, larger tofu is often purchased by consumers for family needs or culinary businesses that require more volume in processing.

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5. CONCLUSION

Based on the results of the research and analysis that have been carried out, the following conclusions can be drawn:

1. The tofu attributes that influence consumer preferences in purchasing Tahu Warno are taste and durability attributes. This can be seen from the results of the chi-square analysis that the taste attributes (0.004) and durability (0.028) have a Sig value $< \alpha$ value (0.05) then H_0 is accepted, meaning that the taste and durability attributes influence consumer preferences for purchasing Tahu Warno.
2. The most considered attribute of tofu in tofu purchasing decision is the taste attribute. The order of attributes that become consumer attitudes in purchasing tofu are taste, durability, price, texture and size.

REFERENCES

- Aiman, A., Handaka, A. A., & Lili, W. 2017. Analisis preferensi konsumen dalam pengambilan keputusan membeli produk olahan perikanan di kota Tasikmalaya Ammar Aiman , Asep Agus Handaka , dan Walim Lili Universitas Padjadjaran Email : ammaraiman14@g. Jurnal Perikanan Dan Kelautan, 8:1, 146–156.
- Andarwulan, N., Nuraida, L., Adawiyah, D. R., Triana, R. N., Agustin, D., & Gitapriatiwi, D. 2018. Pengaruh perbedaan jenis kedelai terhadap kualitas mutu tahu. Jurnal Mutu Pangan, 5:2, 66–72. <https://journal.ipb.ac.id/index.php/jmpi/article/download/26224/16991>
- Fachrurazi, H., Kuswibowo, C., Azanda, S. H., SIA, M. S., Chadidja, S. R., Muhamad, L. F., MM, M. P., Pilifus Junianto, S. S., Suksesty, C. E., & St, S. 2023. Perilaku konsumen. Cendikia Mulia Mandiri.
- Hariyadi, P. 2023. Perhimpunan ahli teknologi pangan indonesia (PATPI). february.
- Larasasty, M. 2023. Pembelian buah jeruk di pasar modern. Universitas Islam Negeri Syarif Hidayatullah.
- Muchtadi, D. 2010. Kedelai komponen untuk kesehatan. Bandung: Alfabeta, 50–172.
- Primaleon, A. 2020. Analisis rantai nilai industri tahu pada pabrik mtb kota Padang. Universitas Andalas.
- Rahmawati, F. 2013. Teknologi proses pengolahan tahu dan pemanfaatan limbahnya. Yogyakarta: Universitas Negeri Yogyakarta.
- Sungkawa, I., Purnomo, D., & Fauziah, E. 2016. Hubungan antara persepsi dan preferensi konsumen dengan pengambilan keputusan pembelian buah lokal. Agrijati Jurnal Ilmiah Ilmu-Ilmu Pertanian, 28:1.
- Triputra, E. 2011. Analisis komparasi nilai tambah usaha pengolahan kedelai pada berbagai skala usaha di kabupaten Deli Serdang. Skripsi. Universitas Sumatera Utara. Medan.
- Wijayanti, M. R. 2011. Analisis preferensi konsumen dalam membeli daging sapi di pasar tradisional kabupaten Karanganyar.