(RESEARCH ARTICLE)

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Preferences for Sumbawa Buffalo meat of Sumbawa west community

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Abstract

This study was conducted to determine the attributes of Sumbawa buffalo meat that are most considered in purchasing decisions, as well as the relationship between these attributes and the level of preference of the western part of the Sumbawa people in the Traditional Markets of Alas and Utan. The research used a survey method with 100 respondents. All the respondents were people from the western part of Sumbawa in the traditional market of Alas and Utan who buy/consume Sumbawa buffalo meat. The analysis used was the Fishbein analysis and the Chi Square analysis. The results of Fishbein's analysis showedthat the most considered attributes in the decision to buy Sumbawa buffalo meat were the flavor of the meat with score (11.3864) juice, the brick-red color of the meat (10.1430) , the distinctive aroma of buffalo meat, and the tenderness of the slightly tough meat (7.4949). The results of the Chi-Square were 0.002<0.05 indicates there is a relationship the attributes of Sumbawa buffalo meat with the level of preference of the western part of Sumbawa people.

1 Introduction

The buffalo is one of the large ruminants that have a different meat texture than other ruminants. The texture of buffalo meat is rougher and tougher, the color of the meat is darker, and the aroma is more intense. However, buffalo meat has almost the same structure, chemical composition, nutritional value, palatability and carcass as beef, the difference between buffalo meat and beef lies in the fat. The fat content of buffalo meat is around 2.42 grams per 100 grams of meat while beef contains around 10.15 grams per 100 grams of meat. The fat content in buffalo meat is less, which causes low cholesterol in buffalo meat (Usmiati *et al, 2006*).

In Indonesia, buffalo meat is still relatively unknown compared to beef cattle. Buffalo meat almost has its own place in terms of marketing, because of not many people eat buffalo meat. The marketing of buffalo meat in an area is inseparable from the demand or consumption patterns of the community for a product (buffalo meat), the higher the public demand for the product, the more the product will be produced. Marketing of buffalo meat can often be found in buffalo slaughterhouses, traditional markets, and various modern markets (supermarkets), but most consumers buy meat from buffalo butcher shops and traditional markets. This is almost the same as reported by Tambunan's (2009) that 70% meat consumers was found in the traditional market and 30% was in the modern market (supermarket)

Alas and Utan Traditional Market are a traditional market located in the western part of Sumbawa Regency that supplies or provides the largest amount of buffalo meat in Sumbawa Regency, from local buffalo meat to imported buffalo meat. People who buy buffalo meat usually come from various sub-districts in the western part of Sumbawa Regency, namely Alas Barat district, Alas district, Buer district, Utan district, Rhee district and various people from West Sumbawa

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Regency. People who buy buffalo meat pay attention to various attributes associated with buffalo meat that are used as considerations when making purchasing decisions. According to Sumarwan (2004).

The supply of buffalo meat in the traditional market of Alas and Utan in Sumbawa Regency with various attributes will influence the purchasing decisions of consumers. Consumers want buffalo meat based on their preferences. When purchasing buffalo meat, consumers will always pay attention to the attributes associated with buffalo meat and the preference factor for a product will affect the amount of buffalo meat purchases. Therefore, the producers or marketers of buffalo meat in the Traditional Market of Alas and Utan, Sumbawa Regency are obliged to know what are the preferences or preferences of the consumers and what factors determine the quantity of meat purchased in order to provide the best of according to consumer preferences. for buffalo meat.

2 Material and method

2.1 Study site

This research was carried out from October to December 2022 at the Alas and Utan Traditional Market, Sumbawa Regency.

2.2 Data Collection Methods and Techniques

The method used in this research is using survey method. The survey method is a method of gathering information from several samples to represent the entire population. According to Singarimbun and Efendi (2009), in a survey, information was collected from respondents using a questionnaire. Generally, the definition of a survey is limited to research where data is collected from a sample of the population to represent the entire population. It was also explained that the characteristic of this research was that the data were collected from a large number of respondents using the questionnaire method. One of the main advantages of this study is that it allows generalization to a large population.

2.3 Location Determination Method

Sumbawa Regency was chosen as the research area because it is famous for its Sumbawa buffalo and quite a lot of people consume Sumbawa buffalo meat. This research was carried out at the Alas and Utan Traditional Market, Sumbawa Regency, which is a traditional market that sells Sumbawa buffalo meat.

2.4 Selection of Respondents

This study used a purposive sampling technique, namely the respondents who were sampled were people who bought/consumed Sumbawa buffalo meat (Sugiyono, 2017). The number of people who have been used as respondents was 100 people. All respondents were people who buy/consume Sumbawa buffalo meat.

2.5 Data collection technique

Data collection techniques were

- Direct interview to respondents was carried out by using a list of prepared questions as primary data containing the characteristics of respondents and consumer preferences.
- Dircet observations were carried out in studiedfields
- Documentation

2.6 Data analysis

Data obtained were collected, tabulated and analyzed using Descriptive, Fishbein and Chi-Square analysis based on a predetermined model. Fishbein analysis uses Microsoft Office Excel 2007 software while the Chi-Square analysis uses SPSS 25 For Windows software.

2.7 Descriptive Analyst

Descriptive analysis aims to describe and describe data from independent variables in the form of Marketing Mix. Descriptive statistical analysis is a data analysis technique to explain data in general or generalization, by calculating the minimum value, maximum value, mean value, and standard deviation (Sugiyono, 2017).

2.8   Fishbein analysis

Fishbein defines attitude as a human learning tendency. Based on this tendency, an individual will respond to an object (or idea) or a number of things (or opinions) (Tsang *et al*, 2004). Consumer attitudes towards a product are needed to understand what is needed by the consumers themselves. One of the analyzes that can be used to determine consumer attitudes through assessing the attributes of a product is the analysis of the Fishbein attitude model.

According to Schiffman and Kanuk (1994), the fishbein multi-attribute attitude model can be used to measure consumer attitudes toward a product or service or a specific brand. This research was conducted on a preference basis, namely respondents were asked to answer several questions based on their experience in buying and consuming processed products from Sumbawa buffalo meat to ensure that they were given a value with a predetermined scale. The provisions for the rating numbers given are 1 = Really Dislike, 2 = Like, 3 = Somewhat Like, 4 = Really Like.

This analysis includes an interest evaluation component (ei) and a trust component (bi). The ei component measures consumers' evaluation of the i attribute of buffalo meat products in general, while the bi component measures consumer confidence in the i attribute of buffalo meat products. According to Susanta (2006), in the Fishbein model trust in an object is the total number of beliefs that are not only one attribute but the overall relevant attributes attached to the object.

2.9   Chi Square analysis

According to Siegel (1997) the technique of the chi square test is a type of goodness of fit, namely that the test can be used to test whether there is a significant difference between the number of observed objects or expected answers. The basic formula for this calculation is:

$$x^2 = \sum_{i=0}^{k} \left[\frac{(fo - fe)^2}{fe} \right] where fe = \frac{Ri.Ci}{\Sigma Ri}$$
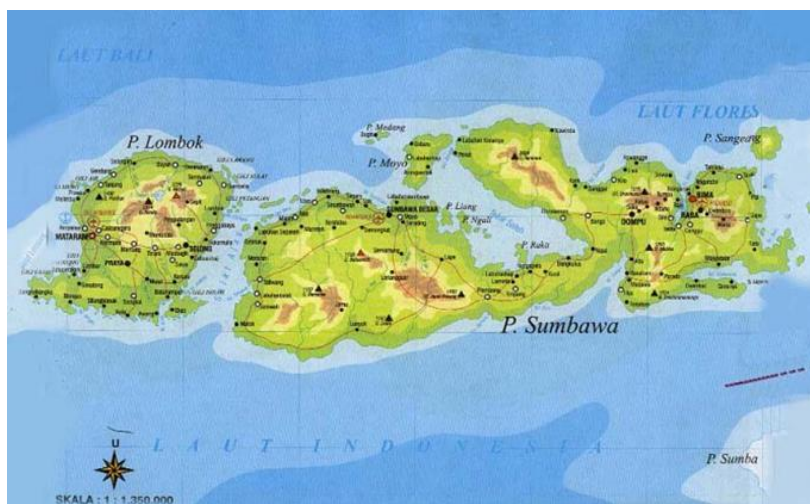
Information:

x^2 : Chi Square
fo : observed frequency
fe : expected frequency
i..k : attribute category in variable

3   Results and discussion

3.1   Sumbawa island

Source: http://beautiful-indonesia.umm.ac.id/

Figure 1 Sumbawa island

Sumbawa Island is one of the islands in the province of West Nusa Tenggara. On the island of Sumbawa there is one of the buffalo family, namely the Sumbawa buffalo. Sumbawa buffalo have a description of the clump with dominant body and head colors from gray to black, hair color reddish to dark gray, horn color clear yellowish to black, compact body shape with relatively short legs, male and female horns with large curved horns sideways and backwards (Suhudy, 2013). The total population of Sumbawa buffalo in Sumbawa district 2021 is 28.644 cattle, with the number of slaughtered buffaloes in 2021 totaling 1.750 cattle (Central Bureau of Statistics Sumbawa Regency, 2022).

The classification of the characteristics of the respondents was based on gender, age, last education, occupation, number of family members, per capita income, Sumbawa buffalo meat buying experience, and the purpose of buying Sumbawa buffalo meat.

Table 1 Characteristics of the respondents

Respondent Characteristics	Information	Frequency (person)	Percentage (%)
Gender	Man	11	11
	Women	89	89
Age	18-30	26	26
	31-50	63	63
	>50	11	11
last education	South Dakota	36	36
	Secondary High School	23	23
	Senior High School	27	27
	Diploma/Bachelor Degree	14	14
Work	Housewife	47	47
	Businessman	40	40
	private employees	8	8
	Government Employees	5	5
Number of family members	2-3 person	36	36
	4-5 people	57	57
	6-7 people	7	7
per capita income	500,000-1,000,000	21	21
	2,000,000-3,000,000	56	56
	4,000,000-5,000,000	23	23
Experience buying Sumbawa buffalo meat	3-5 years	19	19
	6-10 years	17	17
	11-15 years	19	19
	>15 years	45	45
Purpose of buying Sumbawa buffalo meat	Resell	7	7
	accomplished	81	81
	Processed/Sale of processed buffalo meat dishes (Meatballs, Cilok, Soto Madura, etc.)	12	12

Source: Processed from primary data, (2023).

As presented in Table 1, 100 respondents in this study, women were the most dominant, due to in general they make decisions in family consumption, more frequent in the market place to satisfy the need. According to Wijayanti (2011that women tend to play a more important role in the home, one of which is to meet the consumption needs in the home. The lowest percentage of respondents over the age of 50 was 11% of 100 respondents. This is in accordance with the view of Baraja (2018) who states that the more mature the individual will influence the decision to purchase a product so that it is more selective and adapts to its consumption pattern. The last educational level of the primary school respondents has the most dominant percentage, namely 36%. Past education has a relatively important influence on decisions to purchase a product. According to Nugroho et al (2015) The level of education determines the understanding of the nutritional content contained in Sumbawa buffalo meat and the level of rationality in consumption behavior, so it is concluded that education positively influences the level of consumption of Sumbawa buffalo meat. Housewives were the dominant category of respondents with a total percentage of 47%. Housewives tend to have more time than working women where most of this time is used to attend to household needs, such as shopping for family consumption. According to Wijayanti (2011), everyday housewives carry out domestic activities, buy and manage their expenses. The most dominant number of family members was4-5 people with a percentage of 57%. The number of family members can influence product purchases in terms of quantity. Khusna et al. (2016) stated that consumers with family members of less than 4 people tend to choose fewer products, while consumers with 4 or more family members tend to choose a greater number of products. The average income of the respondents was IDR 2.000.000- 3.000.000 as much as 56%. The number of family members can influence product purchases in terms of quantity. Khusna et al. (2016) stated that consumers with family members of less than 4 people tend to choose fewer products, while consumers with 4 or more family members tend to choose a greater number of products.

3.2 Preference of West Sumbawa people for consumption of Sumbawa buffalo meat

Classification of the preferences of the western part of the Sumbawa people towards the consumption of Sumbawa buffalo meat, namely, needs, preferences, hobbies and perceptions.

**Table 2** Preferences of the West Sumbawa people when choosing Sumbawa buffalo meat

No	Preferences choose to consume Sumbawa buffalo meat	Respondents (Person)	Percentage (%)	Reason
1	Need	11	11	As an ingredient for resale in the form of raw or cooked/processed Sumbawa buffalo meat (cilok/dumplings, jerky, soto Madura, sate and rawon).
2	Favorite	76	76	Sumbawa buffalo meat has a brick-red color, quite strong aroma (typical for Sumbawa buffalo), the taste of the meat is slightly sweet with beef, and the tenderness is a little tougher than beef .
3	Hobby	4	4	Always have a desire to eat Sumbawa buffalo meat and the community will give you special free time to eat Sumbawa buffalo meat.
4	Perception	9	9	To increase body resistance, stabilize body condition due to disease (lack of blood), and consume Sumbawa buffalo meat, which is tastier and safer than beef.
	Amount	100	100	

Source: Processed from Rimer data, (2023).

Based on Table 2. It can be seen that out of 100 respondents, the most dominant preference for Sumbawa buffalo meat consumption is up to 76% preference due to Sumbawa buffalo meat having a brick red color, a pretty strong color. aroma (typical of Sumbawa buffalo), flavor slightly meaty, sweet with beef and tenderness a little tougher than beef.

3.3 Purchase/consumption of Sumbawa buffalo meat in the last year

The average total purchase/consumption of Sumbawa buffalo meat in 2022.
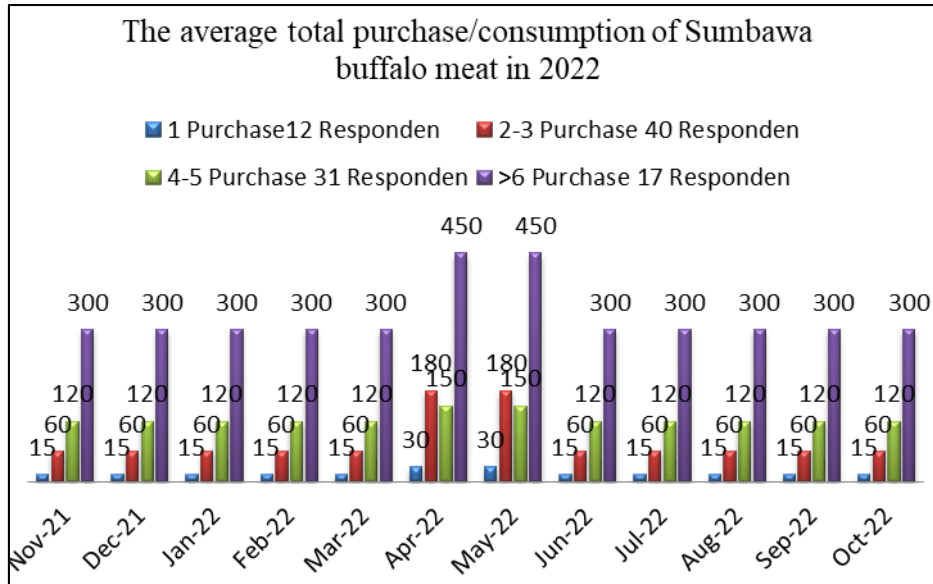
Source: Processed primary data, 2023

Figure 2 The Average Total Purchase/Consumption of Sumbawa Buffalo Meat In 2022

Based on the data in Figure 2, it is known that in April to May 2022, the average purchase/consumption of Sumbawa buffalo meat in the past year by respondents increased. The increase in the number of purchases/consumption of Sumbawa buffalo meat in the western part of Sumbawa district was due to the fact that that month coincided with the month of fasting and Eid al-Fitri (the Muslim holy month) marked by an increase in almost all commodities it tended to increase.

3.4 Fishbein analysis

The attitudinal value of respondents' trust in Sumbawa buffalo meat in the Mercado de Alas, Sumbawa Regency was obtained from the results of data processing using fishbein analysis through Microsoft Excel 2007. According to Susanta (2006), in the Fishbein model the trust in objects is the total number of beliefs that are not just an attribute, but the relevant general attributes attached to the object.

Table 3 Beliefs of the respondents (bi) about the attributes of Sumbawa buffalo meat

No	Sumbawa buffalo meat attributes	Brand				full value	Average
		4	3	2	1		
1	Flesh color (brick red)	45	42	13	0	100	3.22
		180	126	26	0	332	
2	Tenderness of the meat (a little tough)	28	38	3. 4	0	100	2.94
		112	114	68	0	294	
3	Meat flavor (juice/slightly sweet flavor)	55	3. 4	11	0	100	3.44
		220	102	22	0	344	
4	The smell of meat (typical of buffalo)	40	44	16	0	100	3.24
		160	132	32	0	324	

Source: Processed primary data, 2023.

Based on the data in Table 3, the respondents believe that the best attribute of Sumbawa buffalo meat was the juice meat flavor with an average value of 3.44, which means that the buffalo meat flavor Sumbawa bought by the respondents is the best flavor. Also, the community created attribute was brick red meat color with an average value of 3.32. Then, the Sumbawa buffalo meat attribute has a distinctive buffalo meat aroma with an average value of 3.24. Regarding the

attributes in which the respondents distrust, namely, the tenderness attribute of slightly tough meat with a mean of 2.94.

Table 4 Evaluation of the respondents (ei) on the attributes of Sumbawa buffalo meat

No	Sumbawa buffalo meat attributes	Brand				full value	Average
		4	**3**	**2**	**1**		
1	Flesh color (brick red)	39	37	24	0	100	3.15
		156	111	48	0	315	
2	Tenderness of the meat (a little tough)	32	37	31	0	100	3.01
		128	111	62	0	301	
3	Meat flavor (juice/slightly sweet flavor)	48	35	17	0	100	3.31
		192	105	3. 4	0	331	
4	The smell of meat (typical of buffalo)	36	40	24	0	100	3.12
		144	120	48	0	312	

Source: Processed primary data, 2023

Based on the data in Table 4, the Sumbawa buffalo meat attribute that respondents consider the most when buying Sumbawa buffalo meat is the meat flavor attribute with an average value of 3.31 or the respondents feel that the evaluation of the taste of the meat was the most important in the formation of attitudes towards the purchase of Sumbawa buffalo meat. According to Hidayati and Gusteti (2016), the final attribute considered by the respondents of beef when making a purchase was the attribute of fat content.

Table 5 Respondents' attitude index (Ao) towards Sumbawa buffalo meat in the Alas market, Sumbawa Regency

No	Sumbawa buffalo meat attributes	belief (bi)	Assessment (ai)	Attitude (Year)	Classification
1	Meat color(Red brick)	3.22	3.15	10.1430	2
2	meat tenderness(a bit of clay)	2.94	3.01	7.4949	4
3	meat flavour (juice/slightly sweet)	3.44	3.31	11.3864	1
4	meat fragrance(typical buffalo)	3.24	3.12	10.1088	3

Source: Processed primary data, 2023

Based on the data in Table 5, it is shown that the first rank was the meat flavor attribute (juice/slightly sweet) with a value of (Ao) 11.3864, the second rank was the meat color attribute with an attitude value (Ao) 10.1430, the third rank was the meat aroma (typical of buffalo) with an attitude value (Ao) 10.1088, and the fourth rank was the slightly tough meat tenderness attribute with a value of attitude (Ao) 7.4949.

3.5 Chi square analysis

The value of the relationship between the attributes of the Sumbawa buffalo meat and the level of preference of the Sumbawa people was obtained from data processing by Chi-Square analysis through the SPSS 25 for Windows software.

Based on the data in Table 6, the significant value of Pearson Chi-Square is 0.002 <0.05, so it can be seen that there is a relationship between meat attributes and the preference level of respondents who buy/ they consume Sumbawa buffalo meat in the Sumbawa Islands. and the traditional markets of Alas and Utan, Sumbawa Regency.

Table 6 Results of the chi-square analysis of the attributes of Sumbawa buffalo meat with the levels of satisfaction of the respondents

Chi-square tests			
	Worth	**df**	**Asymptotic (bilateral) meaning**
Pearson chi-square	20.406a	6	002
Likelihood ratio	19,821	6	003
linear by linear association	1,000	1	.317
No of valid cases	400		
0 cells (0.0%) have an expected count less than 5. The minimum expected count is 20.25. Source: Processed primary data, 2023			

4   Conclusion

The preference of the Western Sumbawa people for buffalo meat is an expression of the people's feelings towards the attributes of buffalo meat that the color, tenderness, aroma and flavor of buffalo meat are better than beef. Buffalo meat consumption can increase the body's resistance, stabilize the body's condition due to disease, and public perception that buffalo meat consumption was safer than beef Western Sumbawa people's preference for Sumbawa buffalo meat is that Sumbawa buffalo meat has brick-red color, fairly strong aroma (typical of buffalo), slightly sweet meat flavor (juice), and a little more tender than beef. The attributes considered in the decision to buy Sumbawa buffalo meat successively from highest to lowest were meat flavor 11.3864, meat color 10.1430, meat aroma 10.1088 and meat tenderness 7.4949 and there was a relationship between the meat attributes and the level of preference of the respondents to buy buffalo meat in the Traditional Market of Alas and Utan.

Suggestion

More research is needed on the physical quality of Sumbawa buffalo meat so that it can be compared with consumer perceptions and factors of the number of buffalo meat purchases. The local government is desirable to concern more on the supervision and regulation in the cattle slaughter process. Especially for the productive female Sumbawa buffalo, so that the Sumbawa buffalo population can be controlled and prevent the huge population in decline.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

Statement of informed consent

All informants in this study have agreed to become respondents in the study.

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