



# Consumer Preferences For Chili Commodities In Special Region Of Yogyakarta

Paksi Mei Penggalih<sup>1\*</sup>, N. Nabila<sup>2</sup>

\*Corresponding author email: paksi.meipenggalih@upnyk.ac.id

<sup>1</sup>Department of Agribusiness, Faculty of Agriculture, Universitas Pembangunan Nasional Veteran Yogyakarta

<sup>2</sup>Department of Agrotechnology, Faculty of Agriculture, Universitas Pembangunan Nasional Veteran Yogyakarta

**Abstract.** Chili is one of the horticultural commodities that is much liked by Indonesian people, including the people in Special Region of Yogyakarta, who in their cultural history have a tendency to like sweet food. The high number of chili enthusiasts encourages chili to continue to be cultivated throughout the year in Special Region of Yogyakarta. Knowing consumer preferences is very important. The purpose of this study was to determine consumer preferences for chili in Special Region of Yogyakarta. This research was conducted in Special Region of Yogyakarta from July to August, 2023. The sample selection method was simple random sampling. The type of data was primary data, with an online data collection method for chili consumers in Special Region of Yogyakarta. The data was analyzed by Conjoint Analysis. The results of this study indicated that in buying or consuming red chili, the people in Special Region of Yogyakarta preferred with the following criteria: elongated shape, red color, smooth surface, spicy taste, medium skin thickness, straight curve, shelf life was 14-16 days, chili size was 10-15 cm.

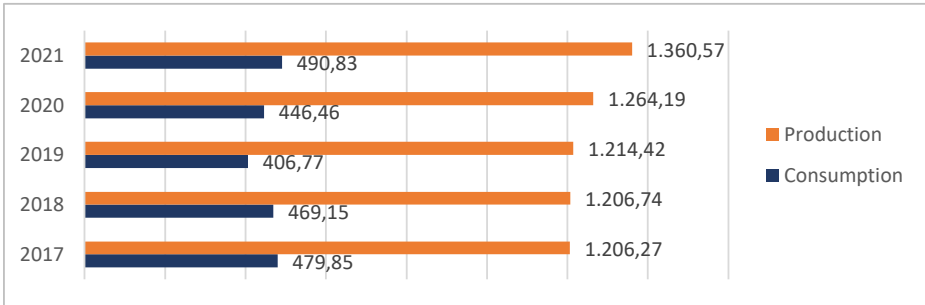
**Keywords:** chili characters, chili preferences, consumer preferences

## 1 Introduction

In facing the threat of a world food crisis, agricultural development continues to be carried out in various parts of the world. In this current globalization and trade liberalization era, it certainly opens a great opportunity as well as challenges in agricultural development, including in Indonesia. Based on data from the Central Statistics Agency (2022), agriculture is the third sector that contributes greatly to Gross Domestic Product (GDP) in the third quarter of 2022, reaching 12.91%. This figure shows that agriculture is still a very important sector in Indonesia. The agricultural subsector that plays an important role and provides many opportunities in Indonesia is the horticulture. This horticulture subsector provides opportunities because the market for horticultural commodities is expanding and trade barriers between countries are being eliminated [1].

One of the mainstay horticulture commodities is chili. Chili is a commodity that can be grown in various types of land, bears fruit along the year, can be sold in fresh or processed form, and has high socio-economic value. Chili is also a commodity that can be consumed at any time and cannot be substituted, so chili will continue to be needed in increasing quantities along with population growth, the national economy, and the development of the national food industry. With these various advantages, chili is interested by Indonesian people, so production and consumption are relatively high. The trend in red chili production from 2017-2021 is always

increasing. The following is data on the production and consumption of red chili in Indonesia from 2017-2021, shown in Figure 1.



**Fig. 1.** Red Chili Production and Consumption (thousand tons)  
Source: Indonesian Central Statistics Agency, 2022

The Indonesian Central Statistics Agency data shown in Figure 1 shows that for five years red chili production has always increased, while consumption has never been more than 50% of the annual production. This illustrates that there are a lot of chilies that have not been consumed. Meanwhile, the fact shows that Indonesian people have a tendency to like chili or food with a spicy taste. According to the Licorice survey (2022), as many as 93.6% of Indonesian people like a spicy food, including in Special Region of Yogyakarta.

The commodity which has a great demand by many people is important to know about how the consumer preferences are. By knowing the consumer preference, it pushes producers to produce the products which has a good suitable with consumer tastes. Consumer preferences are a person's choice of whether they like it or not regarding the products (goods or services) they consume. Consumer preferences show consumers' interesting about various existing product choices [2]. Preference mapping, especially external preference mapping, is an effective tool in new product development through the correlation of sensory and consumer data to gain a deep understanding of the preference space, including the traits that drive consumers to like a product [3]. There are times when consumers in families who have certain socio-economic conditions have special preferences about a product [4].

Preference relationship have three basic characteristics:

a) Completeness

If A and B are two conditions or situations, then each person must always be able to specify whether:

1. A is preferred over B,
2. B is preferred over A, or,
3. A and B are both preferred.

Based on this concept, it is assumed that each person never hesitates in making a choice, because they know which one is better and which one is worse, so they can always make a choice between two alternatives.

b) Transitivity

If someone says that he prefers A over B, and prefers B over C, then he must prefer A over C. The result is people cannot articulate his conflicting preferences.

c) Continuity

If someone states that they prefer A over B, it means that all conditions under A are preferable to conditions under choice B. According to Lilien *et al.*, [5], there are several steps that must be taken until consumers have preferences.

- a) It is assumed that consumers view products as a collection of attributes. Different consumers have different perceptions of what attributes are relevant.
- b) The level of importance of attributes varies according to individual needs and desires. Consumers have varying emphasis on what attributes are most important.
- c) Consumers develop a number of beliefs about where a place on each attribute.
- d) The level of consumer satisfaction with products will vary according to differences in attributes.
- e) Consumers have different attitudes towards brands through evaluation procedures.

Beside of safety factors, price or willingness to pay is an important factor for consumer acceptance. Consumer reactions when tasting products consist of three types:

- a) Consumers like the product. This leads to the potential acceptance of the product but is influenced by product availability, interaction with competing products, marketing and promotion in the market.
- b) Consumers don't like the product. This leads to potential product rejection but will be influenced by price, availability of alternatives, and marketing.
- c) Consumers are neutral towards the product. This indicates a neutral attitude, it means a lack of incentive to buy the product [6].

Based on this background, this research aims to determine farmers' preferences for red chili commodities in Special Region of Yogyakarta.

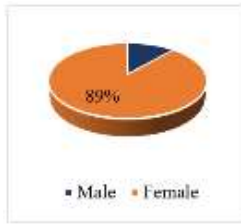
## 2 Research Method

This research was conducted using a quantitative approach. The research sample was red chili consumers in Special Region of Yogyakarta. The sample was selected with the simple random sampling method. The analysis involved primary data with an online survey data collection method in July – August 2023. Secondary data was also used in this research, which was obtained from literature that was relevant to this research. Data analysis was conducted using Conjoint Analysis. The red chili attributes observed to analyze consumers preferences in purchasing red chili were (1) Chili shape, (2) Chili curvature, (3) Chili size, (4) Chili shelf life, (5) Chili color, (6) Chili skin surface, (7) Chili taste, and (8) Thickness of the chili skin.

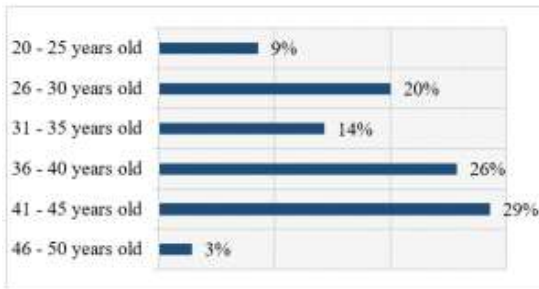
## 3 Results and Discussion

### 3.1. Consumer Characteristics and Socioeconomics

In the world of business marketing, questions about how to identify different types of customer, their distinctive preferences, and matching products to fit their needs are all familiar problems and the subject of intensive research [7]. The socioeconomics characteristics of consumers studied include: gender, age, education, type of work, and district of residence. The most chili consumers in this research were female, about 89%. Based on age group, the most consumers of red chilies were aged 36-41 years, it was shown on Figure 2 and Figure 3.

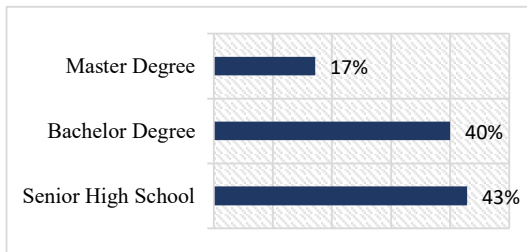


**Fig. 2.** Respondent's Gender  
Source: Primary Data Analysis, 2023

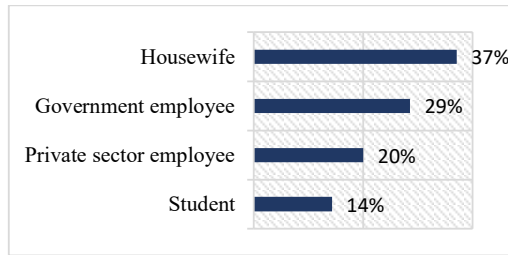


**Fig. 3.** Respondent's Age  
Source: Primary Data Analysis, 2023

In the educational aspect, it was dominated by high school graduates, about 43%. Regarding work, the majority of consumers were housewives, about 37%. These data was shown on Figure 4 and Figure 5.

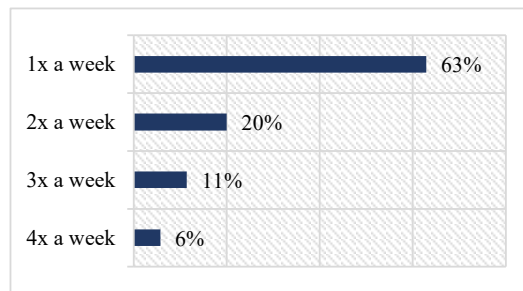


**Fig. 4.** Respondent's Education Background  
Source: Primary Data Analysis, 2023

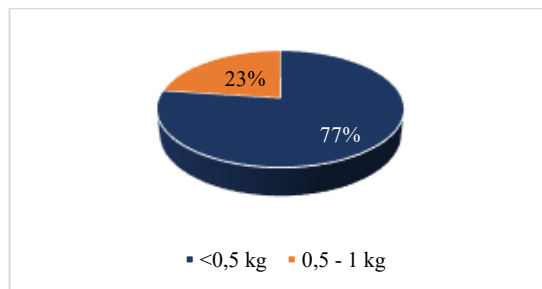


**Fig. 5.** Respondent's Job  
Source: Primary Data Analysis, 2023

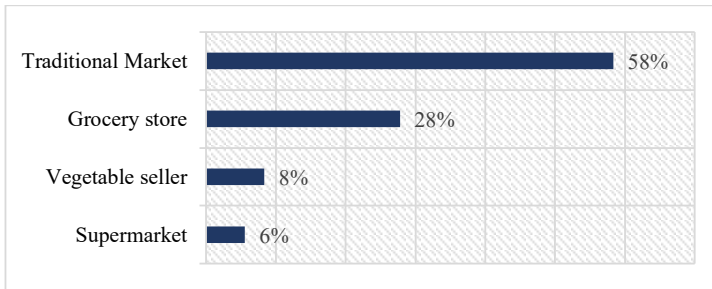
Special Region of Yogyakarta was known for its people who like sweet food, however its people also have a high interest in spicy taste. As many as 74% of respondents said that they like spicy food. The majority of red chili consumers was bought for chilies once a week. In one purchase, the maximum number of red chilies they bought was 0.5 kg. They most often bought red chili at markets and grocery stores.



**Fig. 6.** Frequency of Purchasing Chili  
Source: Primary Data Analysis, 2023



**Fig. 7.** Amount of Purchasing Chili  
Source: Primary Data Analysis, 2023



**Fig. 8.** Amount of Purchasing Chili  
Source: Primary Data Analysis, 2023

**3.2. Consumers Preference for Red Chili**

The attributes of red chili observed to analyze consumer preferences in buying red chili were: (1) Chili shape, (2) Chili curvature, (3) Chili size, (4) Chili shelf life, (5) Chili color, (6) Chili skin surface, (7) Chili taste, and (8) Thickness of the chili skin. Each of these attributes has various levels. The results of the orthogonal plan produced 49 types of stimuli that were assessed by consumers to determine their preferences for red chili. After being analyzed using Conjoint Analysis, a ranking of the importance of the attributes of chili can be found, starting from the most important to the least important. It was shown in Table 1.

**Table 1.** Importance Value

Atribut	Importance Value
Chili shape	17.721
Chili color	17.092
Chili skin surface	14.036
Chili taste	11.351
Chili thickness skin	11.215
Chili curvature	9.653
Chili shelf life	9.641
Chili size	9.291

Source: Primary Data Analysis, 2023

Based on the data analysis result, the most important attribute was chili shape with the importance value score was about 17.721. The second important attribute was chili color with the importance value score was about 17.092. The third important attribute was chili skin surface with the importance value score was about 14.036.

Each attribute analyzed has various levels. Based on the data analysis results, it was known that each level of attribute has the biggest score of utility estimate was the consumer preference. Consumer preferences of red chili in Special Region of Yogyakarta was shown in Table 2.

**Table 2.** Consumer Preference for Red Chili

		Utilities	
		Utility Estimate	Std. Error
Chili Shape	Elongated	0.224	0.012
	Oval	0.079	0.015
	Round	-0.129	0.015
	Cone	0.028	0.015
	Rectangular	-0.087	0.015
	Irregular	-0.115	0.015
	White	-0.099	0.012
Chili Color	Yellow	-0.106	0.015
	Orange	-0.004	0.015
	Red	0.254	0.015
	Purple	-0.092	0.015
	Green	0.046	0.015
Chili Surface	Smooth	0.176	0.009
	Medium Twisting	-0.039	0.009
	Strong Twisting	-0.138	0.009
Chili Taste	Not Spicy	0.010	0.009
	Spicy	0.053	0.009
	Very Spicy	-0.062	0.009
Thickness of the Chili Skin	Thin	-0.035	0.009
	Medium	0.042	0.009
	Thick	-0.007	0.009
Chili curvature	Straight	0.029	0.009
	Curved	0.009	0.009
	Winding	-0.039	0.009
Chili Shelf Life	7-10 days	-0.003	0.009
	11- 13 days	-0.020	0.009
	14- 16 days	0.023	0.009
	<10 cm	0.012	0.009
Chili Size	10-15 cm	0.021	0.009
	16-20 cm	-0.032	0.009
(Constant)		3.263	0.007

Source: Primary Data Analysis, 2023

Table 2 showed consumer preferences for red chili commodities. In the chili shape attribute (1), consumers were more likely to red chili that was elongated in shape. It has been proven that the elongated shape of the chili has the largest utility estimate score among the other shape (0.224). The elongated shape of the chili was preferred because it made easier for consumers to cut the chili. For the chili color (2), consumers prefer red chili. Utility estimate score of this red

color was 0.254. The next attribute was the surface of the chili (3). The smooth surface of red chili was more popular by consumers compared to surfaces with medium twisting or strong twisting. It was because a smooth surface was easier to clean before consumed. The smooth surface of these red chili has utility estimate score 0.176. For the chili taste (4), consumers preferred the spicy taste, with utility estimate score was 0.053. Regarding the chili skin thickness (5), consumers preferred red chili with medium skin thickness. The utility estimate score the thickness of this skin was 0.042. For chili curvature (6), consumers preferred straight red chili because this made it easier for consumers to store, clean and cut the chili before processing them. For the shelf life of chili (7), consumers preferred chili that have the longest shelf life, it was about 14-16 days after harvesting. This saving power has utility estimate score 0.023. The final attribute measured was the chili size (8). Consumers preferred red chili that have 10-15 cm in length. They consider red chili of this size to be the most suitable compared to other sizes.

## 4 Conclusion And Recommendation

### 4.1 Conclusion

In buying or consuming red chili, the people in Special Region of Yogyakarta preferred with the following criteria: elongated shape, red color, smooth surface, spicy taste, medium skin thickness, straight curve, shelf life was 14-16 days, and chili size was 10-15 cm.

### 4.2 Recommendation

For producers and farmers who produce red chili seeds or seedlings, it is very important to know about the market or consumer preference. This aims to ensure that the red chili which have been harvested can be sold more easily because they were suit with the consumers tastes and needs.

## References

- [1] N. A. Widiyanto, "Preferensi Konsumen terhadap Buah Apel (Studi Kasus Kota Malang dan Kota Surabaya)," *J. Ilmu-Ilmu Pertanian*, vol. 1, no. 1, pp. 22-32, 2019.
- [2] P. Kotler and N. Armstrong, "Dasar-Dasar Pemasaran Edisi Kesembilan," PT. Indeks, Jakarta, 2004.
- [3] A. J. Bowen, A. Blake, J. Turecek, and B. Amyotte, "External preference mapping: A guide for a consumer-driven approach to apple breeding," *J. Sens. Stud.*, pp. 1-12, 2018.
- [4] E. Weltzien and F. Rattunde, "Gender and farmer preferences for varietal traits: evidence and issues for crop improvement," *Plant Breed. Rev.*, vol. 43, pp. 243-278, 2020.
- [5] B. Simamora, "Membongkar Kotak Hitam Konsumen," Gramedia Pustaka Utama, Jakarta, 2003.
- [6] A. Bechoff, K. Tomlins, G. Fliedel, L. A. B. Lopez-lavalle, A. Westby, C. Hershey, and D. Dufour, "Cassava traits and end-user preference: Relating traits to consumer liking, sensory perception, and genetics," *Food Sci. Nutr.*, pp. 1-20, 2017.
- [7] A. Orr, C. M. Cox, Y. Ru, and J. Ashby, "Gender and Social Targeting in Plant," *CGLAR Gender Breeding Initiat. Int. Potato Cent. (CIP)*, Peru, 2018.



**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

