

Understanding Consumer Preferences for Tangerines (*Citrus reticulata*) in Urban Traditional Markets: Evidence from Surakarta, Indonesia

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Abstract

Citrus fruit is one of the fruits favored by the people of Indonesia because this fruit is easy to find anywhere and anytime and can be consumed by various circles of society, both the upper, middle and lower classes. Tangerine (*Citrus reticulata*) is one of the Citrus that lives in tropical and subtropical regions. This study aims to examine the attributes of tangerines that are consumer preferences in the traditional market of Surakarta City and examine the attributes of tangerines that are most considered by consumers in the decision to buy tangerines in the traditional market of Surakarta City. The method of determining the location uses a purposive method and the sampling method is carried out by accidental sampling, the determination of the number of respondents in each traditional market is determined proportionally to the number of respondents as many as 50 respondents. The data analysis method used is chi square analysis and multi-attribute Fishbein. The results of this study indicate that the tangerines that are consumer preferences in the traditional market of Surakarta City are tangerines that have a sweet taste, medium fruit prices (20,000-24,900), orange skin color and have medium fruit sizes (8-9 pieces/year). kg). The attribute of tangerines that is most considered in the decision to buy tangerines in the traditional market of Surakarta City is the attribute of sweetness. The order of attributes from the most considered to the least considered is fruit taste, fruit price, fruit skin color, and fruit size.

Keywords: Tangerines, Consumer Preferences, Chi Square Analysis, Fishbein Multiattribute Analysis.

Introduction

Indonesia is an agrarian country, where a significant proportion of the population resides in rural areas and depends on agriculture as their primary livelihood. To date, the agricultural sector remains strategic and plays an important role in contributing to Gross Domestic Product (GDP), generating employment opportunities, and ensuring domestic food supply. Awareness of this vital role has encouraged many people to continue maintaining their agricultural activities (Ario, 2010). Horticultural commodities, particularly fruits, have strong prospects when developed intensively. The demand for tropical fruits continues to increase in both domestic and export markets, in the form of fresh produce as well as processed products. Citrus fruits are among the most popular fruits consumed by Indonesian society because they are widely available anytime and anywhere and can be consumed by people across all income levels, including upper,

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middle, and lower classes. Various types and varieties of citrus fruits are available in modern markets, traditional markets, fruit shops, and through street vendors. Such conditions enable consumers to easily select the type of citrus fruit that best suits their preferences (Isen, Ariffudin, & Effendy, 2016).

Surakarta City is one of the major cities in Indonesia, with a population of 518,827 people (BPS, 2019). Therefore, Surakarta represents a potential market for tangerine distribution. Consumers often prefer traditional markets over modern markets due to certain advantages, particularly the opportunity for price bargaining. The most commonly sold tangerine varieties in traditional markets of Surakarta are the Tawangmangu and Batu 55 (Malang) varieties. These two varieties possess distinct characteristics. Tawangmangu tangerines are characterized by a sweet taste with slight acidity, relatively large size (55–60 grams), smooth skin surface, green to yellowish-green peel color, and soft, juicy flesh. In contrast, Batu 55 tangerines have a sweet and slightly sour taste, round shape, medium size, orange-colored flesh, and annual productivity ranging from 40–60 kg per tree. The attributes considered by consumers when purchasing tangerines include taste, fruit size, peel color, and price.

Consumer preference refers to an individual's choice or interest in expressing liking or disliking toward a product (Simamora, 2013). It is defined as a subjective taste measured by the utility derived from various goods (Indarto, 2011). Product attributes such as quality, price, promotion, and packaging may influence consumer preferences in selecting a product. In purchasing tangerines, consumers consider various factors, particularly the inherent attributes of the fruit itself. Understanding the specific attributes of tangerines that influence consumer decisions in Surakarta City will assist marketers in formulating appropriate marketing strategies to meet consumer needs and satisfaction.

Method

The research employed a quantitative approach. The study location was selected purposively, namely traditional markets in Surakarta City. The selected markets included Pasar Gede, Pasar Legi, Pasar Nusukan, Pasar Harjodaksino, and Pasar Nongko. The sampling method used in this study was accidental sampling. A total of 50 respondents were included in the study to minimize the margin of error. The number of respondents from each traditional market was determined proportionally.

Chi Square (χ^2) Analysis

To examine whether there are differences in consumer preferences toward tangerines in Surakarta City, the Chi-Square analysis was employed. The formula used is as follows:

$$\chi^2 = \sum_{k=0}^k \left(\frac{(f_o - f_e)^2}{f_e} \right)$$

Where:

χ^2 = Chi-Square value

f_o = observed frequency

f_e = expected frequency
 $i \dots k$ = attribute categories of tangerines

The expected frequency was calculated using the following formula:

$$f_e = \frac{R_i \times C_i}{\sum R_i}$$

Where:

R_i = total of the i -th row
 C_i = total of the i -th column
 $\sum R_i$ = total number of observations

The hypotheses tested in this study were:

H_0 : There is no difference in consumer preferences toward the attributes of tangerines.
 H_a : There is a difference in consumer preferences toward the attributes of tangerines.

The hypothesis testing was conducted at 95% and 99% confidence levels using the established Chi-Square critical value criteria.

Multi Atribut Fishbein Analysis

To identify the most important attributes of tangerines considered by consumers, the Fishbein Multi-Attribute Analysis was employed. The model is formulated as follows:

$$A^0 \sum_{i=1}^n b_i \cdot e_i$$

Where:

A_o = overall consumer attitude toward the object
 b_i = the consumer's belief that the object possesses attribute i
 e_i = the evaluative dimension (importance rating) assigned by the consumer to attribute i
 n = the total number of attributes associated with the tangerines

RESULT AND DISCUSSION

The results of the Chi-Square analysis indicate that there are significant differences in consumer preferences toward tangerines in the traditional markets of Surakarta City. This finding suggests that consumers consider different attributes when purchasing tangerines, depending on their individual tastes and preferences. The availability of various tangerine varieties in traditional markets in Surakarta exposes consumers to multiple choices, including differences in taste, price, peel color, and fruit size across varieties. Based on the analysis results, the most preferred tangerines among respondents in traditional markets of Surakarta are those characterized by a sweet taste, orange-colored peel, medium fruit size, and relatively affordable prices.

Respondent Characteristics

Table 1

Characteristics of Respondents in the Study of Consumer Preferences for Tangerines in Traditional Markets of Surakarta City, 2021, by Gender

No	Gender	Number of Respondents (people)	Percentage (%)
1	Female	48	96
2	Male	2	4
Total		50	100

Source: Primary Data Analysis

Based on Table 1, it can be observed that the majority of respondents purchasing tangerines were female, accounting for 48 individuals, while only 2 respondents were male. This finding indicates that women play a significant role in fulfilling household needs. Within the household context, women generally bear responsibility for managing domestic needs, including decisions related to household consumption. Consequently, shopping for food and other household necessities is predominantly carried out by women. Although men occasionally undertake shopping activities, women remain the primary decision-makers and actors in household purchasing activities.

Table 2

Characteristics of Consumer Preference Respondents for Keprok Oranges in Traditional Markets of Surakarta City in 2021 Based on Employment Status

No	Occupation	Number of Respondents (people)	Percentage (%)
1	Entrepreneur	27	54
2	Trader	5	10
3	Private Employee	8	16
4	Midwife	1	2
5	Civil Servant	5	10
6	Housewife	4	8
Total		50	100

Source: Primary Data Analysis

Based on the results presented in Table 2, consumers of tangerines come from diverse occupational backgrounds. The table shows that the majority of respondents were self-employed (27 respondents), followed by private-sector employees (16 respondents). In this study, traders refer to respondents whose occupation is grocery retailing. Overall, the largest group of tangerine consumers consisted of self-employed individuals. This finding may be explained by the fact that Surakarta is an urban area. According to Robinson (2005), cities function differently from rural areas, as their primary economic base lies in goods-producing sectors as well as trade and service sectors, provided that such activities generate income from outside the region. The main occupations of urban residents typically include entrepreneurship, trade, and industrial labor. As entrepreneurs or self-employed individuals, urban residents are often required to maintain good physical health. With greater awareness of health, many consumers choose to consume tangerines, which are believed to provide various health benefits.

Household Per Capita Income of Consumers

Income plays an important role in household decision-making, as it influences consumers' purchasing decisions. The level of income reflects consumers' purchasing

power. Based on the research findings, data were obtained regarding respondents who purchased tangerines according to their household income background, as follows:

Table 3

Characteristics of Consumer Preference Respondents for Keprok Oranges in Traditional Markets of Surakarta City in 2021 Based on Consumers' Monthly Household Income

No	Income (IDR)	Number of Respondents (people)	Percentage (%)
1	500.000 – 900.000	6	12
2	1.000.000 – 1.500.000	12	24
3	1.600.000 – 2.000.000	22	44
4	2.100.000 – 2.500.000	7	14
5	2.600.000 – 3.000.000	3	6
Total		50	100

Source: Primary Data Analysis

Based on Table 3, it can be observed that the income levels of tangerine consumers in traditional markets of Surakarta City vary. The income referred to in this study represents the individual income of each respondent rather than the total household income. For housewives, income refers to the financial allowance provided by the husband as the head of the household.

According to the Decree of the Governor of Central Java No. 561/61 of 2020, the City Minimum Wage (UMK) for Surakarta was established at IDR 2,013,810. Based on this standard, 18 respondents had household incomes below the minimum wage level. The majority of respondents (22 individuals or 44%) reported household incomes ranging from IDR 1,600,000 to IDR 2,000,000 per month.

These findings indicate that most tangerine consumers in traditional markets of Surakarta belong to the middle-income group. Consumers tend to choose traditional markets due to the opportunity for price bargaining, which allows them to obtain tangerines at prices that match their purchasing power. Based on the respondent characteristics, the primary market segment for tangerines in traditional markets of Surakarta consists of young housewives.

Consumer Purchasing Behavior

Table 4

Reasons for Purchasing Keprok Oranges in Traditional Markets of Surakarta City in 2021

No	Reasons for Purchasing in Traditional Markets	Number of Respondents (people)	Percentage (%)
1	Cheaper price	12	24
2	Can bargain	16	32
3	Close to home	13	26
4	Monthly shopping	3	6
5	More variety	6	12
Total		50	100

Source: Primary Data Analysis

Based on Table 4, it can be observed that the primary reason respondents purchased tangerines in traditional markets was the personal satisfaction derived from bargaining with sellers, enabling them to obtain prices that matched their expectations. This reason was reported by 16 respondents (32%). The second most common reason,

stated by 13 respondents (26%), was the proximity of traditional markets to their homes, making them more accessible and allowing consumers to save both time and transportation costs. The third reason, reported by 12 respondents (24%), was that the price of tangerines in traditional markets is relatively lower compared to prices in supermarkets. The fourth reason, indicated by 6 respondents (12%), was the greater variety of tangerine attributes available in traditional markets, including differences in taste, peel color, size, and price. This wider range of options allows consumers to select products that better suit their preferences compared to those available in supermarkets. Finally, 3 respondents (6%) stated that they preferred purchasing tangerines in traditional markets because they fulfill their monthly household needs by shopping in traditional markets.

Table 5

Frequency of Keprok Orange Purchases by Consumers in Traditional Markets of Surakarta in 2021

No	Purchase Frequency	Number of Respondents (people)	Percentage (%)
1	Every day	0	0
2	Once a week	10	24
3	Once every two weeks	19	38
5	Irregular	21	42
Total		50	100

Source: Primary Data Analysis

Table 5 shows that the majority of respondents in traditional markets purchased tangerines on an irregular basis, accounting for 21 respondents (42%). Consumers who reported irregular purchases did not have a specific schedule for buying tangerines. They often consumed tangerines along with other types of fruit, resulting in non-routine purchasing behavior. Tangerines were purchased only when consumers desired to consume them and were not considered a staple item bought daily or weekly. Respondents who purchased tangerines once a week or once every two weeks stated that their families preferred a variety of foods on a daily basis. In addition, purchasing frequency was influenced by their current financial condition at the time of purchase.

Table 6

Total Quantity of Keprok Oranges Purchased in Traditional Markets of Surakarta in 2021

No	Total Purchase (Kg)	Number of Respondents (people)	Percentage (%)
1	1	30	60
2	2	15	30
3	3	2	4
4	>3	3	6
Total		50	100

Source: Primary Data Analysis

Based on Table 6, the majority of tangerine consumers in traditional markets of Surakarta City purchased 1 kilogram per transaction, accounting for 30 respondents. Consumers indicated that this quantity was sufficient to meet the needs of their households, which typically consist of three to four family members. This finding provides important information for marketers and traders to carefully manage product inventory levels. Maintaining an appropriate stock level is essential to

avoid both excess supply and shortages. Overstocking may lead to financial losses for tangerine traders, as unsold fruit may experience quality deterioration due to reduced freshness and eventually spoilage.

Table 7

Purpose of Purchasing Keprok Oranges in Traditional Markets of Surakarta in 2021

No	Purpose of Purchase	Number of Respondents (people)	Percentage (%)
1	For personal consumption	45	90
2	As souvenirs/gifts	5	10
Total		50	100

Source: Primary Data Analysis

Based on Table 7, it can be observed that the majority of consumers in traditional markets of Surakarta City, namely 45 respondents, purchased tangerines primarily for personal consumption, either to be eaten fresh or processed into juice. Only 5 respondents reported purchasing tangerines as souvenirs. This finding indicates that most respondents reside within Surakarta City and purchase tangerines from traditional markets located near their homes. Consequently, tangerines are mainly purchased for personal and household consumption rather than for gifting purposes.

Consumer Preferences for Tangerine Attributes

The results of the Chi-Square analysis reveal consumer preferences toward tangerines in traditional markets of Surakarta City, as presented in Table 8.

Table 8

Results of the Chi-Square Analysis on Consumer Preferences for Keprok Oranges in Traditional Markets of Surakarta in 2021

Attribute	Chi-Square Value (X ² calculated)	Df	X ² table (0,05)	X ² table (0,01)	Description
Taste	30.160	3	7.815	11.345	Highly Significant
Peel Color	8.560	3	7.815	11.345	Significant
Size	31.600	3	7.815	11.345	Highly Significant
Price	7.720	2	5.991	9.210	Significant

Source: Primary Data Analysis

Based on the Chi-Square test results presented in the analysis table above, the findings are as follows:

1) Taste Attribute

The analysis shows that taste has a highly significant effect on consumer preferences for tangerines, with a calculated Chi-Square value (χ^2 calculated) of 30.160, which is greater than the critical Chi-Square values at the 5% significance level (7.815) and the 1% significance level (11.345).

2) Peel Color Attribute

The analysis indicates that peel color has a significant effect on consumer preferences for tangerines, with a calculated Chi-Square value of 8.560, which exceeds the critical Chi-Square value at the 5% significance level (7.815).

3) Size Attribute

The analysis demonstrates that fruit size has a significant effect on consumer preferences for tangerines, with a calculated Chi-Square value of 31.600, which is greater than the critical Chi-Square values at both the 5% (7.815) and 1% (11.345) significance levels.

4) Price Attribute

The analysis shows that price has a significant effect on consumer preferences for tangerines, with a calculated Chi-Square value of 7.720, which exceeds the critical Chi-Square value at the 5% significance level (5.991), although it does not exceed the 1% critical value (9.210).

Based on these attributes, the tangerines were categorized into more specific classifications as follows:

- 1) Taste: sour; slightly sweet and sour; sweet with slight sourness; sweet.
- 2) Peel Color: green; yellowish-green; greenish-yellow; orange.
- 3) Fruit Size: very small (12–14 fruits/kg); small (10–11 fruits/kg); medium (8–9 fruits/kg); large (6–7 fruits/kg).
- 4) Price: low (IDR 15,000–19,999/kg); medium (IDR 20,000–24,999/kg); high (IDR 25,000–29,999/kg).

Table 9

Preferensi Konsumen Terhadap Buah Jeruk Keprok di Pasar Tradisional Kota Surakarta 2021

No	Keprok Orange Attributes	Consumer Preference
1	Taste	Sweet
2	Peel color	Orange
3	Fruit size	Medium
4	Price	Affordable

Source: Primary Data Analysis

Based on Table 9, it can be concluded that the tangerines preferred by respondents in the traditional markets of Surakarta City are those characterized by a sweet taste, orange-colored peel, medium fruit size, and relatively low price.

Conclusion

Based on the research findings and analysis conducted, the following conclusions can be drawn:

1. The tangerines preferred by consumers in traditional markets of Surakarta City are those characterized by a sweet taste, medium price range (IDR 20,000–24,900 per kilogram), orange-colored peel, and medium fruit size (8–9 fruits per kilogram).
2. The most influential attribute in consumers' purchasing decisions for tangerines in traditional markets of Surakarta City is taste. The order of attributes from most to least considered is taste, price, peel color, and fruit size.

Recommendation

Based on the research findings and analysis conducted, the following recommendations are proposed:

1. **For producers**, it is recommended to maintain and improve the taste quality of tangerines, as taste is the most influential attribute considered by consumers when selecting tangerines. Improving taste quality can be achieved through the implementation of proper cultivation techniques and the development of organic tangerine farming practices.
2. **For marketers**, the findings indicate that the tangerine varieties most preferred by consumers are the Garut and Berastagi varieties. Therefore, marketers are encouraged to consider aligning the types of tangerines they offer with consumer preferences. Additionally, marketers should improve post-harvest handling practices, particularly in storage and packaging, to maintain fruit quality and enhance the visual appeal of tangerines.
3. **For the government**, it is recommended to encourage agricultural research institutions to develop new tangerine varieties that are tailored to consumer preferences within specific market segments.

References

- Ario. 2010. *Menuju Swasembada Pangan, Revolusi Hijau II: Introduksi Manajemen Dalam Pertanian*, RBI. Jakarta
- BPS. 2019. *Kota Surakarta Dalam Angka 2019*. Surakarta : Badan Pusat Statistik Kota Surakarta
- BPS. 2019. *Provinsi Jawa Tengah Dalam Angka 2019*. Jawa Tengah : Badan Pusat Statistik Provinsi Jawa Tengah
- Indarto R. 2011. *Analisis Preferensi Konsumen Terhadap Building Kartu GSM Dengan Smartphone*. Thesis. Universitas Indonesia Press. Jakarta.
- Isen, Ariffudin, Effendy. 2016. Analisis Preferensi Konsumen Terhadap Buah Jeruk Lokal Dan Buah Jeruk (Sunkis) Impor Kota Palu. *Jurnal Agrotekbis*. Vol. 4 No. 4. ISSN: 2338-3011
- Simamora, Bilson. 2013. *Panduan Riset Perilaku Konsumen*. Jakarta: Gramedia Pustaka Utama