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Consumer Preferences for Cut Roses in Surakarta

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ABSTRACT

This research aims to determine the combination of attributes that are most popular with consumers of cut roses in the city of Surakarta. The research was conducted at several traditional markets, flower shops and florists in the city of Surakarta in August - September 2023. The research used survey, interview and questionnaire methods with 100 respondents as consumers of cut roses, and sampling was carried out by accident. Research data was analyzed quantitatively and descriptively. The research results showed that the highest attribute importance value was color at 31%, followed by the aroma attribute at 30%, stem length at 21%, and stem stiffness at 16%. The combination of attributes most preferred by consumers when buying cut roses is red, strong scent, long stem and tough. These attributes can be used by traders or producers to provide products that suit consumer desires.

Keywords : Consumer Preferences, Roses, Attributes.

INTRODUCTION

Ornamental plants that have relatively high economic value are cut flowers (Nurmalinda & Hayati, 2014). Cut flowers have a role in the ornamental plant industry which is usually used as material for flower arrangements for various purposes in the human life cycle. There are many types of cut flowers that are in great demand in Indonesia, including roses, orchids, chrysanthemums, anthuriums, gerberas, carnations and tuberose flowers (Ridhawardani, Armenia., 2017). According to the Central Statistics Agency, plant production in the cut flower group tends to increase. The increase in demand will continue to increase along with the growth of the floriculture industry.

One type of cut flower that is popular with people is roses. Roses are popular because of their shape, color, beauty and long vase life (long period of freshness) as well as their fragrant and distinctive aroma, so they are nicknamed the queen of flowers (Ayesha, 2017; Kurniawati, 2017; Muzaki et al., 2021). Roses are a type of national superior cut flower that is popular in Indonesia. Not only are they used as decoration, roses also have a close relationship with culture and are a religious symbol and are often used at every state event or festival held in Indonesia (Fatchur Rozci, 2021; Indrajati, Siti B., Lukman D.S., 2022). Production of cut roses in Indonesia is in second place after chrysanthemums with total production in 2022 of 162,963,432 stems (BPS, 2023).

Increasing demand for a wide range of cultivars of fresh cut flowers has kept the market growing (Short et al., 2017). Consumer demand for cut roses is greater in big cities. According to (Sunarmani et al., 2016), the demand for cut flowers in big cities tends to increase every year, around 10-15%. This means that cut

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flower consumption has good prospects in urban areas. One of them is the city of Surakarta.

Surakarta City is a city in Central Java Province. The location of the city of Surakarta which is close to cut flower producing areas is an advantage, considering that the main problem often faced by florists is the character of cut flowers which are easily damaged and fragile (Schimmenti et al., 2013). The city of Surakarta also has the potential to develop cut flower businesses such as flower shops/florists, because the florist business is one way of marketing cut roses. Even though it has the potential to develop a business, information is still needed regarding preferences for cut flowers, especially roses, so that they can be accepted by the market.

Increasingly tight business competition also has a very important influence on marketing information in terms of consumer needs, desires and tastes (Fathin & Marline, 2020)(Fathin & Marline, 2020). In order to win the competition, it is necessary to design an appropriate marketing strategy by the flower shop/florist. According to (Adiyoga & Nirmala, 2013) business orientation requires flower shops/florists to be able to provide flowers on offer according to consumer demand. The consequence of these demands is that there is a need for flower shops/florists to have a good understanding of the preferences of the final flower consumer.

Consumers of cut roses have different preferences in purchasing cut roses which are related to different attributes as well. Attributes are very closely related to products, because consumers see a product as a bundle of attributes. Consumers have their own beliefs about product attributes, where the selected product attributes will describe consumer behavior/preferences towards the product. Knowing the attributes preferred by consumers can help business actors determine better marketing strategies, not only that, business actors can also assess the competitiveness of competitors' products. Marketing strategies can also be directed to be more effective in reaching target markets, attracting interest and increasing sales (Sadeli & Utami, 2013).

These attributes include flower color (Lim et al., 2014), aroma (Berki-Kiss & Menrad, 2019), stalk length (Adiyoga & Nirmala, 2013) and stalk stiffness (Laily Qodriyah, 2018). The attributes of cut roses are a series of combinations of choices made by consumers when buying cut roses. According to (Ong et al., 2022) when someone plans to buy flowers, the type of flower, size, place of purchase, really need to be considered. Therefore, it is relevant to analyze these attributes.

Based on these problems, although many studies have been carried out regarding consumer preferences, there is still no research and explanation regarding consumer preferences for cut roses. This is in line with research (Rombach et al., 2018) regarding flower consumer preferences in Germany, that currently there are no studies that consider cut flower attribute preferences. Therefore, it is still unclear whether producers have provided flowers that suit consumers' needs and desires or not. The aim of this research is to determine consumer preferences for the attributes of cut roses in the city of Surakarta.

RESEARCH METHODS

Research was conducted in Surakarta City, especially at flower shops/florists/traditional markets. The consideration for choosing Surakarta City, including the big city in Surakarta City, is also because the demand for cut flowers is higher in big cities (Sunarmani et al., 2016). The research was conducted in August – September 2023 using survey techniques. The sampling technique uses a non-probability sampling technique with a sampling technique using the accidental

sampling method. This non-probability sampling technique is used because the population size is unknown (Sugiyono, 2016). According to (Amalina, 2015), determining the number of samples in an unknown population can be determined using a formula.

$$n = \frac{Z^2}{4(Moe)^2} \quad \text{.....(1)}$$

Where n is the number of samples, Z is the level of normal distribution (5%), and Moe is the Max Margin of Error. Based on calculations, it was found that the number of samples used in this research was 96 respondents which were rounded up to 100, to avoid damage to the sample. The type of data used is a survey method collected using primary data obtained through interviews using a questionnaire. The observed product attributes are presented in Table 1.

Table 1
Attributes and Attribute Levels in Cut Roses

Attribute	Level Attribute
Flower Color	Red
	White
	Pink
Scent	Strong
	Weak
	Unscented
Stalk Length	Long (45-55 cm)
	Medium (35-45 cm)
	Short (25-35 cm)
Stalk Kink	Strong/sturdy
	Not Firm/Withered

Source: (Adiyoga & Nirmala, 2013; Berki-Kiss & Menrad, 2019; Darliah et al., 2010; Sunarmani et al., 2016)

The main analytical tool used in this research is conjoint analysis with the help of the SPSS for Windows 24 program application. Conjoint analysis can examine the stimulus evaluated by respondents in detail where the stimulus is a combination of all levels or levels of each attribute of the object being studied. The results of conjoint analysis are quantitative information that can be used to model consumer preferences for several combinations of product attributes (Fauzy, 2014).

The stages of conjoint analysis are as follows:

a. Determine important attributes or factors that will be studied further. The attributes in this research were obtained from previous research, namely how to present several attributes from exploration in the field and several literature related to this research

b. Designing or designing stimuli (combination of attributes and levels), stimuli are combinations formed between attribute levels. One of the techniques used to obtain stimuli is the fractional factorial design technique

c. Determining the type of data, in general there are 2 forms of input data in conjoint analysis, namely metric and non-metric forms

d. Developing mathematical models for stimuli, in carrying out conjoint analysis there are several models that can be applied.

RESULTS AND DISCUSSION

Respondent Characteristics

Respondents in this study consisted of 100 consumers of cut roses in the city of Surakarta, dominated by women (71%) with employment status as students (39%) and the majority aged 20-24 years (54%) with predominantly marital status. unmarried status was 93% and had 3-4 family members (49%). Respondents' final education level was dominated by Bachelor's degree/equivalent (83%) with income level ≤ 1,500,000 (23%) and 1,500,000 – 2,000,000 (23%). The highest frequency of consumer purchases is several times a year (61%) because purchases are usually only made when there are certain events.

Consumer Preferences for Cut Rose Flower Attributes

Research on consumer preferences for cut roses uses four attributes with 11 levels or sub-attributes (Table 1) where the four levels of attributes and sub-attributes can provide a combination of attributes of 3 x 3 x 3 x 2 = 54 stimuli. Too many stimuli will be difficult for respondents to analyze. Therefore, simplification can be made. One technique that can be used to reduce the complexity of the combination of stimuli is fractional factorial design. Fractional factorial design is a variation of the basic factorial design in which only a portion (subset) of the combination of stimuli is carried out. One of the procedures included in the fractional factorial design section is the orthogonal procedure, so that the 54 stimuli are formed into nine stimuli in Table 2.

Before carrying out conjoint analysis, validity testing needs to be carried out to see the correlation of the variables to be measured with actual conditions in the field. The correlation value resulting from Pearson's R and Kendall's tau respectively shows 0.991 and 0.873, the maximum value between the correlation of the actual value and the estimated value of the conjoint analysis is 1. The correlation value produced in this study is not completely 100%, this is because it is not all stimuli were used because they had been reduced during the formation of the stimuli (Ihwah et al., 2020).

Red cut roses have a positive utility value of 0.412, which means that consumers prefer red roses compared to pink or white. This is in line with research (Darliah et al., 2010) which states that the rose clone most liked by consumers is bright red. A strong aroma has a positive utility value of 0.612, which means that consumers prefer roses with a strong aroma, because this strong and fragrant aroma will influence consumer satisfaction. The stalks preferred by consumers are long stalks with a positive utility value of 0.172 and tough stalks with a positive utility value of 0.326.

Table 2
Combination of Research Attributes

No	Color	Scent	Stalk Length	Stalk Kink
1	Pink	Weak	Short	Strong
2	Pink	Unscented	Long	Withered
3	White	Strong	Short	Withered
4	White	Unscented	Medium	Strong
5	White	Weak	Long	Strong
6	Red	Unscented	Short	Strong
7	Red	Strong	Long	Strong
8	Pink	Strong	Medium	Strong
9	Red	Weak	Medium	Withered

Source : Primary Data Processed, 2023

Table 3
General assessment of aggregate consumer preferences for several attributes of cut roses

Importance Value (%)	Utility Value	Attribute Levels	Preference
		Flower Color	
31,030	0,412	Red	Red
	-0,171	White	
	-0,241	Pink	
		Scent	
30,610	0,612	Strong	Strong
	-0,311	Weak	
	-0,301	Unscented	
		Stalk Length	
21,638	0,172	Long	Long
	0,029	Medium	
	-0,201	Short	
		Stalk Kink	
16,722	0,326	Strong	Strong
		Withered	
Pearson's R = 0,991		Significant = 0,000	
Kendall's tau = 0,873		Significant = 0,001	
Constant = 2,856			

Source : Primary Data Processed, 2023

Overall, consumers prefer cut roses that are red, have a strong aroma, have long stems and are tough. The constant values in table 3 are used as a basis for finding utility quantities from flower color, flower aroma, stalk length, and stalk stiffness. Utility value is defined as the difference between the average of a certain factor and its constant as a positive or negative determinant of utility (Adiyoga & Nirmala, 2013). The relative importance value (importance value) of cut rose flower attributes can be seen in Table 3.

In table 3 it can be seen that the first most important attribute of roses is flower color (31.030%), second is aroma (30.610%), third is stem (21.638%) and fourth is stiffness of stem (16.722%). This is in line with research by Darliah et al (2010) regarding rose flower preferences that the flower clones that are most preferred are those that are bright red, have sturdy and upright stems and have long stalks. The novelty in this research is the addition of the aroma attribute which turns out to have quite high importance.

Color Attribute

The color attribute has an importance value of 31.030%, this shows that consumers prioritize the color attribute of roses compared to other attributes. This is in line with research (Purnamasari et al., 2017) regarding chrysanthemum flower preferences which states that the color attribute is an attribute that is considered important by consumers. At the color attribute level, consumers prefer red roses. Based on interviews with traders and consumers, red, white and pink are the most popular colors. According to (Lim et al., 2014) stated that the preference for roses with the highest transaction volume is red roses.

Aroma Attributes

Aroma is the second priority that consumers consider when buying cut

roses. The resulting interest value is 30.610%. According to research (Rombach et al., 2018) states that aroma is an important factor that consumers pay attention to, because aroma is naturally inherent in many flowers and if there are flowers that are not fragrant it will reduce consumer satisfaction. Consumers also prefer scented flowers compared to unscented flowers, most consumers will smell the flowers first before buying.

Stalk Length Attribute

The relative importance value of the stem length attribute is 21.638% which is in third place in the preference attribute for cut roses. Most consumers prefer long rose stems rather than short ones. This is in accordance with research (Darliah et al., 2010) which explains that consumers prefer roses with long stems. Roses that have long stems tend to last longer because more water can be absorbed by long stems, and also because it makes it easier to cut the ends of the stems when the flowers are placed in a vase of water.

Stalk Firmness Attribute

The final attribute that consumers pay attention to in this research is the stiffness of the stem. According to (Rombach et al., 2018) cut flowers are perishable products so their shelf life is not long. The stiffness of the stalk is related to the durability of the flower, where a stalk that is still strong indicates a flower that lasts longer than a stalk that is not strong.

CONCLUSION

Based on the results of research regarding consumer preferences for cut roses in the city of Surakarta, several conclusions can be drawn that the type of cut roses most liked by consumers are red roses, with a strong aroma, long stems and tough. Based on the order of relative importance, the most prioritized by consumers are color, aroma, length of stalk and stiffness of the stalk. So traders or producers can provide roses that match these attributes and add other attributes such as larger flower sizes or longer lasting flowers to provide added value to cut roses.

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