

Analysis of Consumer Preference for Purchasing Ornamental Plants

Lily Fauzia¹, Rezkika Gusmiranda Siregar², Mohammad Jufri³,
Mozard Baharuddin Darus⁴, Dian Pebriyani⁵

^{1,2,3,4,5}Department of Agribusiness, Faculty of Agriculture, Universitas Sumatera Utara, Medan, Indonesia

Corresponding Author: Lily Fauzia

DOI: <https://doi.org/10.52403/ijrr.20230271>

ABSTRACT

Ornamental plants are an alternative business for Indonesian because of their high economic value. The ornamental plant sellers must always be alert in providing various types of ornamental plants with high demand. Sellers also must know consumer behavior and preferences in purchasing ornamental plants. With the increasing demand for ornamental plants, sellers are expected to know what attributes people like and understand consumer purchasing decisions. This research is conducted on 55 Consumers of the ornamental plant at Taman Bunga Madirsan to get consumer preferences. The study used conjoint analysis and using SPSS 16.0 analysis tool. The attribute of consumer preference is color, size, price, season, and plant care. The result shows that the most important attribute in consumer preference for ornamental plants is price followed by plant care, color, size, and season. The combination of attributes that the most preferred by the consumer is an ornamental plant which is a medium-sized green plant with rainy season plant types and prices <Rp. 100,000 and easy plant care.

Keywords: [Conjoint Analysis, Ornamental Plant, Consumer Preference]

INTRODUCTION

Ornamental plants are an alternative business for Indonesian because of their high economic value. Based on data from the Central Bureau of Statistics Indonesia, production of ornamental plants in 2020 reached 342,422,645, while export volume reached 4,176,294 kg, or equivalent to

US\$12,176,244. The developments experienced by ornamental plant farming are inseparable from consumer purchases that continue to increase. The large number of consumers who need ornamental plants provides good prospects for the future of the ornamental plant business

At the end of 2019, the world was shocked by the outbreak of the coronavirus, or what is often called Covid-19. The spread of Covid-19 had reached Indonesia in March 2020, so the lockdown began to be implemented to reduce the spread of the virus. All activities like offices, schools, and others must be stopped and carried out online or work from home. With the implementation of Work From Home, which requires people to do all activities at home, people have plenteous of free time to do productive activities such as gardening and cultivating ornamental plants. Planting ornamental plants is one practice to reduce anxiety and stress during the pandemic process (1). Planting is one of the choices for protecting people's emotional health due to COVID-19. Planting is not only considered a fun activity but also a way to focus one's mind on a particular task, thus diverting attention from the COVID-19 condition and helping to suppress negativity (2).

In difficult conditions, natural elements such as plants can reconnect humans with the natural environment. Such connections are cited as the cause of positive value changes in cognition and emotion, which result in

positive impacts on stress levels and human health (3).

Ornamental plant cultivation in 2020 is developing well, followed by increased consumer demand due to the impact of the Covid-19 pandemic. People are starting to like gardening and collecting ornamental plants, both ornamental flowers and leaves, which are very diverse. This makes the sellers of ornamental plants increasingly improve the cultivation of ornamental plants. Increased consumer demand and purchases cause the price of ornamental plants also increase. However, this does not reduce public interest, people are willing to spend money ranging from hundreds of thousands to millions of rupiah.

Consumers are the most significant factor in marketing success, consumers tastes for ornamental plants determine the sustainability of ornamental plant farming. In buying ornamental plants, consumers will see and weigh the price and appearance of these ornamental plants. Things that consumers consider include the size of the plants, the beauty of the color of the flowers and leaves, as well as the freshness and quality of the plants. Selling skills and product completeness are also the keys to attracting consumers because they are the main attraction for ornamental plant farming. The ornamental plant sellers must always be alert in providing various types of ornamental plants with high in demand. Sellers also must know consumer behavior and preferences in purchasing ornamental plants. The ornamental plant industry consists of several large farmers and many medium and small-scale farmers. With the increasing demand for ornamental plants, sellers are expected to know what attributes more preferred by people and understand consumer purchasing decisions.

LITERATURE REVIEW

Consumer preferences are defined as a person's choice of likes or dislikes for the products (goods and services) consumed. Consumer preferences show consumer

preferences from various existing product choices (4).

Ornamental plants are a type of agribusiness commodity with good prospects. Currently, many ornamental plants are needed to beautify the environment. Ornamental plants are one of the potential commodities that can be developed both on a small and large scale, as evidenced by the increasing public interest in cultivating ornamental plants. This has encouraged an increase in the number of ornamental plant cultivators, ornamental plant cultivation products, and the area and development of ornamental plant cultivation businesses (5).

Product attributes are components of product properties which guarantee that the product can meet the needs and desires expected by buyers. These properties include color, aroma, durability, quality, good impression, packaging, brand and design (6). Ornamental plant consumer satisfaction is influenced by attributes such as variety, level of product uniqueness, product price (7), future price predictions and display of potted plants (8).

MATERIALS & METHODS

The research was conducted at the Madirsan Flower Garden, Bangun Sari Village, Tanjung Morawa District, Deli Serdang Regency. The determination of the research area was carried out purposively, where Bangun Sari Village is one of the villages known as a center for selling ornamental plants in North Sumatra. The research was conducted on 55 flower consumers at Taman Bunga Madirsan to get consumer preferences for purchasing ornamental plant.

The study used conjoint analysis and was assisted by the SPSS 16.0 analysis tool. Conjoint analysis is a technique that is specifically intended to understand how consumers desire or prefer a product or service by measuring the level of usefulness and the relative importance of various attributes of a product (9).

The conjoint analysis must include attributes and sub-attributes of ornamental plants which describe in the following table

Table 1. Attributes And Sub-Attributes Of Ornamental Plants

No.	Attribute		Sub-Attribute
1	Color	1	Red
		2	White
		3	Ungu
		4	Green
		5	Others
2	Size	1	Big
		2	Medium
		3	Small
3	Season	1	Dry Season
		2	Rainy Season
4	Price	1	<Rp100.000
		2	Rp100.000 – Rp500.000
		3	>Rp500.000
5	Plant Care	1	Easy
		2	Hard

Reduction of stimuli on the attributes of ornamental plants is carried out by orthogonal design in SPSS 16.0 software which is expected to obtain a combination of product attributes that only assesses the main factors (Fractional Factor Design). Where the results of orthogonal design generate 27 stimuli.

Stimuli will be arranged into a questionnaire and asked to the research sample. Calculation of product attribute scores using a Likert scale, namely Strongly Dislike (Score 1), Dislike (Score 2), Neutral (Score 3), Like (Score 4), and Really Like (Score 5). Product attribute calculation scores obtained from interviews with respondents were then analyzed by Conjoint Analysis using SPSS 16.0. Conjoint analysis can be formulated as follows (10):

$$U(X) = \sum_{i=1}^{m_i} \cdot \sum_{j=1}^{k_j} \beta_{ij} \chi_{ij}$$

Where U (X) is the total utility, β_{ij} is the utility value of the i attribute of the j level, k_j is the j level of the i attribute, m_i is the number of the i attribute, and χ_{ij} is the dummy variable of the i attribute on j level.

The results of the Conjoint Analysis are in the form of utility values stating the usefulness of each product attribute value and importance values expressing the

combined opinions of respondents on product attributes, which are used to find out which product attributes are considered most important by respondents, where the highest value is considered the most important attribute in product selection.

RESULT

Public interest tends to increase, mainly the demand for ornamental plants also continue to increase. In purchasing ornamental plants, consumers have their own assessment of their preferences for these ornamental plants. The color of the plants to be purchased, the various sizes of the plants, the types of plants according to the season, the price of the plants and the difficulty level of plant maintenance are attributes in people's judgments about buying ornamental plants.

The results of the Conjoint Analysis of consumer preferences in purchasing ornamental plants are analyzed from the overall statistics in SPSS. Consumer preference for Ornamental can be seen from the greatest utility among the levels of each attribute. Based on the research results of ornamental plants which are consumer preferences can be seen in the following table.

Table 2. Important Value and Utility Value Consumer of Ornamental Plants

No	Attribute	Important Value	Sub-Attribute	Utility
1	Color	20,431	Red	.036
			White	.025
			Purple	-.068
			Green	.094
			Others	-.087
2	Size	9,624	Big	-.045
			Medium	.044
			Small	.001

Table 2 To Be Continued...

3	Plant Species Based on Season	4,409	Dry	.015
			Rainy	-.015
4	Price	40,547	< Rp100.000	.547
			Rp100.000-Rp500.000	-.039
			> Rp500.000	-.508
5	Plant Care	24,989	Easy	.419
			Hard	-.419

Based on importance value, the most important attribute in determining consumer preferences is the price attribute. Apparently, prices have the greatest important value which is 40.547. Consumers choose the price of ornamental plants according to the ability and beauty of these ornamental plants. Several studies explain that the price of plants is one of the most considered attributes in buying ornamental plants (11,12). Sub-attribute of Price with the greatest utility value is price of ornamental plant <100.000. The attribute of plant care is the second attribute that consumers pay most attention to when buying ornamental plants. Plant care important value is 24,989. Plant care that is in accordance with the ability of consumers will attract consumers to buy ornamental plants. Sub-attribute of plant care with the greatest utility value is an easy-care ornamental plant.

The following important attribute is color. Color important value is 20,432. The color of the plants is enough to attract consumers' interest in purchasing ornamental plants, because each consumer has a different color preference, the beauty of the color of the plants will be the main attraction for consumers. Sub-attribute of color with the greatest utility value is the green color plant. The attribute of plant size is the fourth attribute that is considered by consumers in purchasing ornamental plants. Plant size important value is 9,472. Consumers prefer medium-sized ornamental plants because it is fit for consumer needs. Plant species based on Season is the last attribute that play as important factor on consumer preference. Plant species based on Season important value is 4,409. Sub-attribute of Plant species based on Season with the greatest utility is dry season plant.

Table 3. Stimuli Design Sequence of Ornamental Plant Product Attributes According to Consumer Preference

Urutan	Total Utilitas	Warna Tanaman	Ukuran Tanaman	Jenis Menurut Musim	Harga Tanaman	Perawatan Tanaman
1	1,089	Green	Medium	Rainy	<Rp100.000	Easy
2	1,061	Red	Medium	Dry	<Rp100.000	Easy
3	1,020	White	Medium	Rainy	<Rp100.000	Easy
4	1,018	Red	Small	Rainy	<Rp100.000	Easy
5	1,007	White	Small	Dry	<Rp100.000	Easy
6	1,002	Red	Big	Dry	<Rp100.000	Easy
7	0,938	Others	Medium	Dry	<Rp100.000	Easy
8	0,884	Purple	Small	Rainy	<Rp100.000	Easy
9	0,503	Green	Medium	Rainy	Rp100.000 - Rp500.000	Easy
10	0,386	Red	Big	Dry	Rp100.000-Rp500.000	Easy
11	0,371	Purple	Medium	Dry	Rp100.000-Rp500.000	Easy
12	0,352	Others	Medium	Dry	Rp100.000-Rp500.000	Easy
13	0,345	White	Big	Rainy	Rp100.000-Rp500.000	Easy
14	0,252	Purple	Big	Rainy	Rp100.000-Rp500.000	Easy
15	0,192	Green	Big	Dry	<Rp100.000	Hard
16	0,182	White	Medium	Rainy	<Rp100.000	Hard
17	0,030	Purple	Big	Dry	<Rp100.000	Hard
18	0,021	Green	Small	Dry	>Rp500.000	Easy
19	-0,019	Others	Big	Rainy	<Rp100.000	Hard
20	-0,094	White	Big	Dry	>Rp500.000	Easy
21	-0,236	Others	Big	Rainy	>Rp500.000	Easy
22	-0,374	White	Medium	Dry	Rp100.000-Rp500.000	Hard
23	-0,394	Green	Big	Dry	Rp100.000-Rp500.000	Hard
24	-0,436	Red	Small	Rainy	Rp100.000-Rp500.000	Hard
25	-0,529	Others	Small	Dry	Rp100.000-Rp500.000	Hard
26	-0,862	Red	Medium	Rainy	>Rp500.000	Hard
27	-0,936	Purple	Medium	Dry	>Rp500.000	Hard

The results showed that the sequence of consumer preference stimuli was found from the sum of the utility values of each attribute with the highest value 1.089 which is stimuli with combination sub-attribute of medium-sized green plants with rainy season plant types and prices <Rp. 100,000 and easy plant care. Meanwhile the lowest stimuli design value is -0,936, which describe the lowest preference of costumer on ornamental plant is stimulus design with the attribute color of medium-sized purple plants with dry season plant types and prices > Rp. 500,000 and difficult plant care.

DISCUSSION

Based on the research results it is known that the most important attribute in consumer preferences is the price attribute. Price refers to the entity amount that an individual has to spend to obtain the product. Competitive prices are one of the determinants of consumers to determine their purchasing tastes (13). Pearson & Henryks (2008) explained that price is the dominant factor in preference formation (14). The price of ornamental plants that consumers prefer is <Rp. 100,000, because this price is considered according to the consumer's ability and at this price, consumers have the opportunity to buy ornamental plants in larger quantities and will repeat purchases of other ornamental plants.

Plant care is an activity carried out to maintain the beauty and survival of ornamental plants. Plant care is considered an attribute that is quite important in purchasing ornamental plants, because consumers will choose the care of ornamental plants according to their abilities. consumer's preference the ornamental plant which is easy in maintenance

On the plant size attribute, consumers are more interested in medium-sized plants. Consumers choose the size of ornamental plants usually according to their needs and uses. Consumers prefer medium-sized ornamental plants (11), because it will be easier to arrange inside or outside the home

On the attribute of color, it is known that consumer preference is greater for green plants. The color of these ornamental plants will be seen by consumers for the first time so that consumers are interested in buying ornamental plants.

Seasons are divisions of time in a year determined by changes in weather. Indonesia is divided into two seasons, namely the dry season and the rainy season. Consumers will usually be more careful in seeing the ongoing season because each plant has a different treatment according to the season. The season that consumers prefer is dry, because consumers find it easier to care for ornamental plants in the dry season. During the rainy season, consumers feel that ornamental plants will wilt or be damaged more easily because the volume of water received will be too large

CONCLUSION

The most important attribute in consumer preference on ornamental plant is price followed by plant care, color, size and season. The combination of attribute that the most preferred by consumer is ornamental plant which is medium-sized green plants with rainy season plant types and prices <Rp. 100,000 and easy plant care.

Declaration by Authors

Acknowledgement: None

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

REFERENCES

1. Turkoglu T, Akbulut GB. The Emotional Effects of Growing Ornamental Plants on People in the Pandemic Process. *Turkish J Agric Nat Sci.* 2023;10(1):107–15.
2. Ambrose G, Das K, Fan Y, Ramaswami A. Is gardening associated with greater happiness of urban residents? A multi-activity, dynamic assessment in the Twin-Cities region, USA. *Landsc Urban Plan* [Internet]. 2020;198(January):103776. Available from: <https://doi.org/10.1016/j.landurbplan.2020.103776>

3. Grinde B, Patil GG. Biophilia: Does visual contact with nature impact on health and well-being? *Int J Environ Res Public Health*. 2009;6(9):2332–43.
4. Kotler P. *Manajemen Pemasaran*. Bahasa Ind. Jakarta: Prentice Hall; 1997.
5. Nxumalo SS, Wahome PK. Effects of application of short-days at different periods of the day on growth and flowering in chrysanthemum (*Dendranthema grandiflorum*). *J Agric Soc Sci [Internet]*. 2010;6:39–42. Available from: <http://www.fspublishers.org>
6. Foster DW. *Prinsip - Prinsip Pemasaran*. In: 4th ed. Jakarta: Erlangga; 1995.
7. Hasanah N, Lubis S. Analisis Pengaruh Harga, Kualitas Produk, Dan Gaya Hidup Terhadap Keputusan Pembelian Tanaman Hias Pada Cv. Paris Garden Medan. *J PLANS Penelit Ilmu Manaj dan Bisnis*. 2017;12(1):13–21.
8. Sari EN, Santosa ME, Anggara MA, Praasetyo A. Tingkat Kepuasan Konsumen terhadap Tanaman Hias di Bursa dan Pelelangan Level of Consumer Satisfaction with Ornamental Plants Stocked and Auction of Menggung Forest Art 2 Tawangmangu. 2022;1(June):1–9.
9. Hair JF. *Multivariate Data Analysis*. Sixth. Pearson Prentice Hall; 2006.
10. Malhotra. *Riset Pemasaran*. Jakarta: Indeks Kelompok Gramedia; 2005.
11. Sukhufi D. Faktor-Faktor Yang Mempengaruhi Perilaku Konsumen Tanaman Hias Anthurium Gelombang Cinta (Studi Kasus di Desa Sidomulyo Kecamatan Batu Kota Batu). Universitas Brawijaya; 2009.
12. Noviana A, Indriani Y, Situmorang S. Perilaku Konsumen Dalam Pembelian Tanaman Hias Di Kecamatan Pekalongan Kabupaten Lampung Timur. *J Agribus Sci*. 2014;2(1):77–85.
13. Malau H. *Manajemen Pemasaran: Teori Dan Aplikasi Pemasaran Era Tradisional Sampai Era Modernisasi Global*. Bandung: Alfabeta; 2008.
14. Pearson D, Henryks J. Marketing organic products: Exploring some of the pervasive issues. *J Food Prod Mark*. 2008;14(4):95–108.

How to cite this article: Lily Fauzia, Rezkika Gusmiranda Siregar, Mohammad Jufri et.al. Analysis of consumer preference for purchasing ornamental plants. *International Journal of Research and Review*. 2023; 10(2): 596-601. DOI: <https://doi.org/10.52403/ijrr.20230271>
