

# Analysis of Consumer Behavior to Purchase Decisions of Ornamental Plants

## (Case study: Bangun Sari village Sub-district of Tanjung Morawa Deli Serdang regency)

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*Abstract: The purpose of this research was to examine the process of making purchasing decisions for ornamental plants and the factors that are most closely related to purchasing decisions for ornamental plants. The research was conducted using a survey method in Bangun Sari Village Sub-district of Tanjung Morawa District of Deli Serdang Regency. The research location was chosen deliberately with the consideration that the area is known as a center area for nurseries and horticultural crops. The method of determining the sample uses a non-probability sampling technique. The research sample was 50 respondents who bought ornamental plants in the research area. The research data which consists of the decision making process and the factors that are most closely related to the purchase decision of ornamental plants were collected by means of interviews using a questionnaire. Descriptive qualitative data analysis and quantitative statistics were carried out by using validity and reliability tests and factor analysis. The results showed that the process of purchasing decisions for ornamental plants by consumers through the stages of introduction needs, information searching, alternative evaluation, purchase decision and post-purchase evaluation. There are two factors that influence the decision to buy ornamental plants by consumers, namely the first component is product factor (price, comfortable place, and center of ornamental plants production), and the second component is lifestyle factors (others influence and trend).*

*Keywords: ornamental plants, consumer behavior, factor analysis, purchase decisions*

### 1. Introduction

Nowadays, the development of ornamental plant agribusiness is so fast, the main cause is because this business is a hobby that is easily pursued and has relatively high economic value. The use of ornamental plants is that they are therapeutic, soothing and preserving the environment. In addition, ornamental plants produce oxygen (O<sub>2</sub>) which is needed by humans to breathe. Ornamental plants also function in absorbing carbon dioxide (CO<sub>2</sub>) which is no longer needed by living things, including humans. Thus, ornamental plants can also function as the lungs of the environment, namely providing hygienic air and cleaning dirty air (Widyastuti, 2018).

Since the beginning of the Covid-19 pandemic, the sales of ornamental plants have started to increase. Initially, the ornamental plant sellers only produced roses, jasmine, orchids, and paper flowers. Now ornamental plant farmers are starting to cultivate ornamental plants *Aglaonema*, *Caladium*, *Monstera*, *Philodendron*, and other types of plants. The increasing demand for ornamental plants has resulted in an increase in the income of farmers and

ornamental plant traders. Ornamental plant traders are competing to provide the demands of consumers.

Bangun Sari Village in District of Tanjung Morawa is a production center for ornamental plants. This farming consists of ornamental plants trading and cultivating, both by retailers and by cultivators of ornamental plants (Nursery). One of the factors that cause rapid instability of ornamental plant prices is consumer behavior in making purchases and there are four factors that influence consumer behavior in purchasing decisions, namely cultural, social, personal and psychological (Kotler, 2003).

The objectives of this research are:

1. To identify the decision making process for purchasing ornamental plants in Bangun Sari Village.
2. To find out the factors that are most closely related to the purchase of ornamental plants in Bangun Sari Village.

## 2. Literature Review

### Ornamental plants

Ornamental plants are plants that its main function as decorations that provide the visual enjoyment both planted outdoors and indoors. As its function to serve the beauty and attractiveness on the shapes and colors, these plants are called as ornamental plants (Widyastuti, 2018).

Ornamental plants are part of non-food horticulture grouped into floriculture. Floriculture is a branch of horticulture that studies ornamental plants as cut flowers, cut leaves, potted plants or garden ornamental plants. This plant is preserved in everyday life to enjoy its beauty (Lakitan, 1995).

### The Factors Affecting Consumer Behavior

Purchasing decisions are strongly influenced by cultural, social, personal and psychological factors. Most of these factors are uncontrollable, but it really needs to be taken into account to determine their effect on purchasing behavior (Kotler, 2007).

- (1) Cultural factors. Cultural factors have a very broad influence on consumer behavior. Culture itself is defined as a set of values, responses, desires, and basic behaviors that are studied by a member of society from family and other important social institutions.
- (2) Social Factors. Social factors that influence consumer behavior, namely:
  - a) Reference Group. A person's reference group consists of all groups around an individual who have a direct or indirect influence on that individual's behavior.
  - b) Family. The family itself is generally a source of orientation in behavior. Children will tend to behave in the same way as their parents when they see their parents' behavior brings benefits or benefits.
  - c) Role and status in society. Role is an activity that is desired to be carried out by referring to the people around him. Meanwhile, status is a general recognition of the community in accordance with the role it plays.
- (3) Personal factors. Personal factors that are vary between one person and another influence the decision to make a purchase. These factors include:
  - (a) Age and Life Cycle Stage. A person in buying goods or services is generally adjusted to their changing age.
  - (b) Work. A person's job certainly influences his buying behavior. The income they earn from their jobs is an important determinant of their buying behavior.
  - (c) Lifestyle. Lifestyle is a form of a person's life as reflected in his activities, hobbies and opinions.

- (d) Personality. Personality is a psychological characteristic that is different from a person which causes a relatively stable and constant response to their environment.
- (4) Psychological factors. Psychological factors that influence a person in choosing the items they buy are:
    - (a) Motivation. A proper need to direct a person to find ways to satisfy his needs.
    - (b) Perception. The process by which a person specifies, coordinates and interprets information to create an important picture of the world. A motivated person is ready for action.
    - (c) Knowledge. Learning describes changes in a person's behavior that arise from experience. Strong incentives, motivational clues, and positive roles are important implementations of knowledge theory for marketers in creating demand for a product.

### Marketing Mix

Marketing mix is a combination of variables or activities that are the core of the marketing system, namely, product, price, promotion and distribution. In other words, the marketing mix is a group of variables that can be used by companies to influence consumer reactions (Sumarmi and Soeprihanto, 2010).

The components of the marketing mix that are often referred to as the 4Ps are: product, price, distribution / place, and promotion.

- (1) Products. The competitive advantage of a product is one of the determining factors for the success of a new product, where the success of the product is measured by the standard number of product sales (Tjiptono, 2008).
- (2) Price. Price, namely all forms of monetary costs incurred by consumers to obtain, own, take advantage of a number of combinations of goods and services from a product.
- (3) Place. The place in the marketing mix is generally referred to as the distribution channel or marketing channel, the channel through which the product reaches the hands of the consumer.
- (4) Promotion. According to Sawastha and Irawan (2001) promotion is a one-way flow of information or persuasion that is formed to direct a person or institution to create exchanges in marketing.

### Decision Making Process

Consumer behavior will decide the decision-making of their purchase. The decision-making

process is a problem-solving approach consisting of five stages (Kotler, 2008).

These stages are the introduction of needs. The main purpose of analyzing wants and needs is to identify unfulfilled and unsatisfied wants and needs.

Information Search. Consumers who are aware of their needs are motivated to seek more Information about the products or services they need.

Alternative Evaluation. This stage includes two stages, namely determining purchase objectives and assessing, as well as selecting alternative purchases based on the purchase objectives.

Buying decision. The purchase decision is a real buying process. So, after the initial stages are carried out, consumers must make a decision whether to buy or not.

Post purchase evaluation. After buying a product, consumers will find a level of satisfaction or dissatisfaction

### 3. Research Method

This research was conducted in Bangun Sari Village, District of Tanjung Morawa, Deli Serdang Regency. The sampling technique is a non-probability sampling that using the accidental sampling method. This technique is suitable for the

number of consumers who were buying ornamental plants in Bangun Sari Village were not identified specifically, so it is assumed that they are countless. The selected sample are 50 buyers who are willing to be interviewed using questionnaires. The Malhotra formula was used to calculate the number of samples needed in this study.

The method of data analysis in the study are validity test using the Pearson Product Moment correlation formula and the reliability test using the Cronbach's Alpha formula. In addition, Principal Component Analysis (PCA) extraction method and varimax rotation are used to determine factor analysis.

## 4. Results and Discussion

### 4.1 Validity and Reliability Test Results

The validity test was carried out using the Pearson Product Moment correlation formula which was run in SPSS software version 25 for windows. Based on validity and reliability test, results obtained by the value of r count of all variables are greater than r table (0.279). Thus, it is concluded that all tested variables are valid and reliable. Hence, all of variables are valid instrument in this research.

Table 1. Validity and Reliability Test Results

Variable	Validity (r-count)	Reliability (r-count)
Culture ( $X_1$ )	0,402	0,665
Other influence ( $X_2$ )	0,492	0,624
Hobby ( $X_3$ )	0,301	0,642
Experience ( $X_4$ )	0,635	0,579
Trend ( $X_5$ )	0,548	0,607
Various choice of ornamental plants ( $X_6$ )	0,425	0,628
Prices ( $X_7$ )	0,699	0,569
Promotion ( $X_8$ )	0,323	0,685
Comfortable place ( $X_9$ )	0,412	0,626
Center of ornamental plants production ( $X_{10}$ )	0,646	0,583

### 4.2 Factor Analysis

To identify factors that are closest related to consumer decisions in purchasing ornamental plants, the variables are tested. These variables are Culture

( $X_1$ ), Others Influence ( $X_2$ ), Hobby ( $X_3$ ), Experience ( $X_4$ ), Trend ( $X_5$ ), Various choices of ornamental plants ( $X_6$ ), Price ( $X_7$ ), Promotion ( $X_8$ ), Comfortable place ( $X_9$ ), and Center of ornamental plant production ( $X_{10}$ ).

Table 2. KaiserMeyer-Olkin (KMO) *measure of sampling adequacy* and Barlett's Test Result

Descriptions	Variables	Factors Analysis		
		1	2	3
<b>KMO Values</b>		0,58	0,57	0,64
<b>Barlett Test of Sphericity (Sig.)</b>		0,00	0,00	0,00
<b>MSA Values</b>	Culture ( $X_1$ )	0,46	Reduction	Reduction
	Other influence ( $X_2$ )	0,60	0,58	0,55
	Hobby ( $X_3$ )	0,50	0,46	Reduction
	Experience ( $X_4$ )	0,75	Reduction	Reduction
	Trend ( $X_5$ )	0,66	0,67	0,63
	Various choice of ornamental plants ( $X_6$ )	0,52	0,54	Reduction
	Prices ( $X_7$ )	0,63	0,68	0,68
	Promotion ( $X_8$ )	0,33	Reduction	Reduction
	Comfortable place ( $X_9$ )	0,57	0,52	0,68
	Center of ornamental plants production ( $X_{10}$ )	0,59	0,56	0,60

Based on the first test, it was obtained that the KMO MSA value was  $0.589 > 0.5$ . The significance value of the Barlett Test of Sphericity is  $0.000 < 0.05$ , then the variables used can be continued because they meet the requirements. To see the correlation between the independent variables, it can be seen from the MSA value. Based on the results of the analysis, there are several variable values less than 0.5, namely Culture (0.465), Promotion (0.335), and Experience are reduced because the value of Extraction Communalities (0.490) is less than 0.5, thus the reduction is not used in the next analysis.

The second analysis remains 7 variables, where the KMO MSA values of  $0.576 > 0.5$  and a significance value of the Barlett Test of Sphericity of  $0.000 < 0.05$ . In the second test, several variables were reduced because the MSA value was less than 0.5, namely the Hobby and Various of ornamental plants variables were reduced because the Extraction

Communalities (0.499) were less than 0.5. In the third test, there are 5 variables with a KMO MSA values of  $0.640 > 0.5$  and a Barlett Test of Sphericity significance value of  $0.000 < 0.05$ , and the MSA value of each variable greater than 0.5. Hence, the tested variable meets the requirements.

Furthermore, those values were extracted using the Principal Component Analysis (PCA) method. the value of Extraction Communalities in each tested variable  $> 0.5$ , namely the influence of others (0.712), trend (0.673), prices (0.669), comfortable places (0.669), and ornamental plant production centers (0.839), and the initial eigenvalues are 1. Therefore, it can be concluded that all variables can explain the formed factors. The next test is Total Variance Explained to find out how many factors that are formed.

Table 3. Total Variance Explained

Component	Total	Variance (%)	Cumulative (%)
1	2,299	45,986	45,986
2	1,262	25,241	71,227
3	0,617	12,343	83,569
4	0,564	11,290	94,859
5	0,257	5,141	100,000

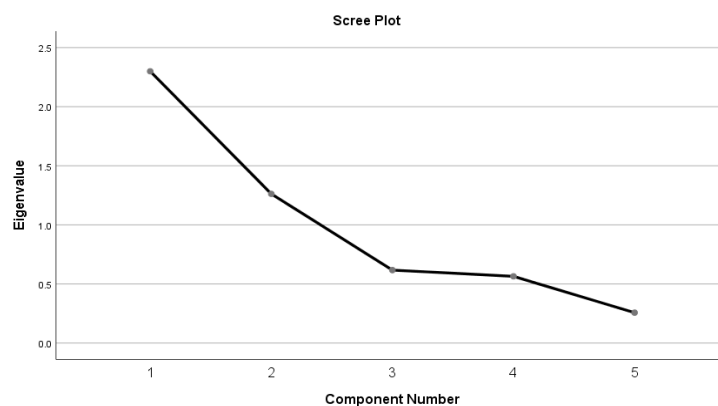
Based on the analysis results, there are two factors that are formed of five tested variables. The requirement to be a factor should has an eigenvalues  $> 1$ . The first eigenvalues factor is  $(2,299 / 5) \times 100\% = 45,986\%$ , the second factor eigenvalues is  $(1,262 / 5) \times 100\% = 25,241\%$ . Total of the two factors will

be able to explain the variable of  $45,986\% + 25,241\% = 71,227\%$ . It is indicating that 71,227% of all existing variables can be explained by the two components formed. Since the eigenvalues value is 1, the total value to be taken is the one which is  $> 1$ , namely components 1 and 2.

The number of factors formed can also be determined with a scree plot. This criterion is used to determine the optimum number of factors, by making a scree plot, namely the curve by plotting between the factor (as the horizontal axis) and its characteristic

root (as the vertical axis). Then the sharpness of the curve is seen to determine the out of points, when the curve starts to resemble a horizontal line (Nugroho, 2008).

Fig 1. Scree plot



Based on the Figure 1, there are two component points that have an eigenvalue > 1, it means that there are two factors that were formed, namely component 1 and component 2. Further, the

identification of variables which will enter into the first factor or the second factor is conducted as shown in Component matrix table.

Table 4. Component Matrix

Variable	Component	
	1	2
<b>Other influence (<math>X_2</math>)</b>	0,300	0,789
<b>Trend (<math>X_5</math>)</b>	0,428	0,700
<b>Prices (<math>X_7</math>)</b>	0,798	-0,180
<b>Comfortable place (<math>X_9</math>)</b>	0,769	-0,279
<b>Center of ornamental plants production (<math>X_{10}</math>)</b>	0,894	-0,200

The Component matrix table shows the correlation value between each variable and formed factors variables. Variables that have a factor loadings  $\geq 0.5$  are grouped into component one or component two. Price, Comfortable place, and center ornamental plant production variables are correlated

with factor 1. While the Other influence and Trend are correlated with factor 2.

In order to ensure which factor is included in its factor group, the largest correlation value between the variable and the factor which is formed by using Varimax rotation.

Table 5. Rotated Component Matrix

Variables	Components	
	1	2
<b>Other influence (<math>X_2</math>)</b>	0,004	0,844
<b>Trend (<math>X_5</math>)</b>	0,155	0,806
<b>Prices (<math>X_7</math>)</b>	0,810	0,111
<b>Comfortable place (<math>X_9</math>)</b>	0,818	0,009
<b>Center of ornamental plants production (<math>X_{10}</math>)</b>	0,907	0,127

After rotation with varimax rotation, two main components are formed, namely the first component (product factor) that consists of Price

( $X_7$ ), Comfortable place ( $X_9$ ), and Center of ornamental plant production ( $X_{10}$ ), and the second

component (lifestyle factors) consists of Other influence ( $X_2$ ) and Trend ( $X_5$ ).

The first component of the factor analysis results consists of price, a comfortable place, and center of ornamental plants production which is identified as product factor. In purchasing decision, price affects the ornamental plants purchase. In information search stage, the main focus that attracts consumers' attention in buying ornamental plants is the affordable price of ornamental plants. A comfortable place will give consumers the convenience of choosing and buying the ornamental plants they seek for, as well as consumers who has reference that Bangun Sari Village is one of the production centers for ornamental plants.

The second component of the factor analysis results consists of the others influence and the trend which is identified as lifestyle factors. The purchase of ornamental plants which is trending has made a new lifestyle today as people are competing to beautify their homes with ornamental plants and make plant cultivation a new trend in a pandemic period. The influence of other people also affects the purchase of ornamental plants, because of other people such as family, friends / neighbors are the closest influence to make purchases and seeing other people starting to cultivate ornamental plants makes consumers interested in following the similar hobby.

## 5. Conclusion

The consumer decisions making process in purchasing ornamental plants consists of five stages, namely recognition of needs, seeking information, evaluation of alternatives, purchasing decisions and post-purchase behavior. The factors that are most closely related to purchasing decision of ornamental plants in Bangun Sari Village consist of two components, namely the first component (product) consisting of price, a comfortable place, and center for ornamental plants production. The second component (Lifestyle) consists of the Others influence and Trend.

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