Bottled coffee consumers' preferences in Medan City

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Abstract. Producers need to understand consumers' behaviour in purchasing bottled coffee products. Consumers' consideration in buying bottled coffee is the basis for producers for marketing strategies. The purpose of this study was to analyse consumer preferences for decisions in buying bottled coffee. Bottled coffee in this study uses 6 attributes that is colour, flavour, packaging, price, thickness, and promotion. Analysed using conjoint analysis with SPSS 24 by giving questionnaires to 100 respondents, the results of this study indicate that the majority of consumers like bottled coffee with black colour, fragrant flavour, unattractive packaging, with a price of more than 8,000 IDR, and has an ordinary thickness. Promotion seen by consumers from social media.

1. Introduction
Coffee is a plantation plant that has long been cultivated and is able to be a source of income for more than one half of the souls of Indonesian coffee farmers. Apart from being a source of people's income, coffee is a mainstay of export commodities and a source of foreign exchange income for the country [1]. Coffee has become a potential commodity to be developed due to an increase in demand for coffee both at home and abroad. Coffee has become an important commodity for the world economy both in terms of consumption and in terms of production. In product marketing, specifically the marketing of processed coffee both ground coffee and instant coffee in Indonesia there is intense competition between fellow large producers. Tight competition encourages producers to intensively promote and introduce new coffee products with new brands [2]. Currently many packaged coffee products on the market with various brands and types. The high level of competition among producers makes producers need to understand consumer behaviour in purchasing products.

2. Research methodology

2.1. Methods for determining research areas
This research was conducted in Medan City. Medan City was chosen because Medan City is a big city that already sells bottled coffee.
2.2. Method for sample determination

The population in this study is bottled coffee consumers. The method of determining the sample used is a probability sampling method. Calculation formula for the number of samples used is the formula from the Slovin method.

\[ n = \frac{N}{1+Ne^2} \]  

(1)

Information:
\( n \) : number of samples
\( N \) : total population
\( E \) : tolerance limit

With the number of households as many as 2,247,425 Household and a tolerance limit of 10%, the number of samples in this study are:

\[ n = \frac{2,247,425}{1 + 2,247,425(0.1)^2} \]

\[ n = \frac{2,247,425}{22,475.25} = 100 \text{ sampel} \]

2.3. Analysis conjoint

Conjoint analysis which is a technique used to decide how consumers prefer goods or services. Analysis is based on consumer thinking in evaluating the value of an object against a combination of their respective attributes [3].

| No. | Attribute | Attribute Level | Description |
|-----|-----------|----------------|-------------|
| 1.  | Colour    | 1              | Black       |
|     |           | 2              | Dark Brown  |
|     |           | 3              | Light Brown|
|     |           | 4              | Very Fragrant|
| 2.  | Flavour   | 1              | Very Fragrant|
|     |           | 2              | Fragrant    |
|     |           | 3              | Not Fragrant|
| 3.  | Packaging | 1              | Very Interesting|
|     |           | 2              | Interesting|
|     |           | 3              | Not Attractive|
|     |           | 4              | < 6,500 IDR  |
| 4.  | Price     | 1              | < 6,500 IDR  |
|     |           | 2              | 6,500 IDR-8,000 IDR|
|     |           | 3              | > 8,000 IDR  |
| 5.  | Thickness | 1              | Very Thick  |
|     |           | 2              | Thick       |
|     |           | 3              | Not Thick   |
| 6.  | Promotion | 1              | Newspaper   |
|     |           | 2              | Social Media|

Utility is the conceptual basis for measuring values in conjoined analysis which is an assessment of subjective preferences that are unique to each individual. Products with higher utility values have a higher preference and have a higher chance of being chosen [4].
\[ Y = X_1 + X_2 + X_3 + \ldots + X_n \]  

Which:

Independent variables \((X_1, X_2, X_3, \ldots, X_n)\) are factors and levels of each factor.

The independence variable is in the form of non-metric data, while the dependent variable \((Y)\) is the overall preference of respondents to the level of each factor of a product. According to Santoso, the basic process of conjoint analysis as described consists of:

- Determine the attribute and level design
- Designing stimuli
- Gathering the opinions of respondents on any stimuli that exist through questionnaire
- Perform a conjoint process with inputting existing data
- Analysis results in the form of Utility Values, Importance Values, Pearson and Kendall’s Tau.

3. Results and discussion

3.1. Consumer preferences on bottled coffee attributes in Medan City

| No. | Attribute | Level/Sub-attribute | Utility Values | Importance Values |
|-----|-----------|---------------------|----------------|-------------------|
| 1.  | Colour    | Black               | 0.052          |                   |
|     |           | Dark Brown          | 0.014          | 10.496            |
|     |           | Light Brown         | -0.066         |                   |
|     |           | Very Fragrant       | 0.148          |                   |
|     |           | Fragaunt            | -0.149         |                   |
|     |           | Not Fragrant        | 0.001          |                   |
| 2.  | Flavour   | Very Interesting    | -0.057         |                   |
|     |           | Interesting         | 0.023          | 8.706             |
|     |           | Not Attractive      | 0.034          |                   |
| 3.  | Packaging | Very Interesting    | -0.023         |                   |
|     |           | Interesting         | 0.008          | 8.462             |
|     |           | Not Attractive      | 0.015          |                   |
| 4.  | Price     | < 6,500 IDR         | -0.052         |                   |
|     |           | 6,500 IDR-8,000 IDR | 0.035          | 9.711             |
|     |           | > 8,000 IDR         | 0.017          |                   |
| 5.  | Thickness | Very Thick          | -0.081         | 12.173            |
|     |           | Thick               | 0.081          |                   |
|     |           | Not Thick           | 0.081          |                   |
| 6.  | Promotion | Newspaper           | -0.081         |                   |
|     |           | Social Media        | 0.081          |                   |

Source: Primary data analysis, 2019

Bottled Coffee products become consumer preferences seen from utility values which are the greatest among the levels/levels on each attribute. The following are the results of the research that have been carried out using the conjoint analysis process. The results of this study can be seen from overall statistics on SPSS.

Based on the conjoint analysis of each attribute based on the design that has been formed, the matrix results for bottled coffee are the consumers’ preferences. Consumers tend to pay attention to the colour to buy coffee bottles, where consumers like coffee black colour, flavour coffee bottles that are preferred by consumers that coffee has an flavour very sweet because it is the hallmark of a coffee with a delicious flavour, consumers prefer to not pay attention to the packaging for coffee, price preferred consumers is the price range > 8,000 IDR, and consumer preferences are coffee bottles that
level of consistency mediocre, and information obtained on consumers who consumes coffee of bottle packaging through social media.

The results showed that preferences consumers against bottled coffee is coffee black colour, the aroma is very fragrant, packaging not attractive, with the price > 8,000 IDR, viscosity mediocre, and promotions are consumers is through social media.

3.2. Most important order of bottled coffee attributes according to consumer preferences
The level of importance of attributes is the level of importance that is obtained as a whole from the conjoint analysis step which explains the level of consumer preference towards the preference for a predetermined product attribute the importance of the highest attribute indicates that the attribute is more considered by consumers than other attributes and levels that influence consumer preferences in choosing the product to consume [5].

| Importance Values |
|-------------------|
| Flavour           | 21.113 |
| Promotion         | 12.173 |
| Colour            | 10.496 |
| Thickness         | 9.711  |
| Packaging         | 8.706  |
| Price             | 8.462  |

Source: Primary data analysis, 2019

Especially for bottled coffee lovers, the very fragrant flavour really affects consumer choices. The flavour of coffee is the main choice for consuming bottled coffee. Because by smelling the flavour of coffee, is a special satisfaction for lovers of bottled coffee to make his choice. Promotion on social media has more influence on consumers, especially at this time social media is more in demand by consumers to get information on bottled coffee products. Bottled coffee consumers prefer black coffee, because it shows the real coffee in accordance with the colour. Compared to bottled coffee which is dark brown and light brown which uses a mixture of milk or cream. Consumers prefer the thickness of bottled coffee which is not too thick, not too thick and not too thin. Consumers are of the opinion that unattractive coffee packaging is more a choice, because usually a very attractive and ordinary packaging can cover the quality of the coffee. Consumers do not attach great importance to the price of bottled coffee. They prefer the aroma and thickness to choose the product to be purchased.

3.3. Level of accuracy of prediction of conjoint analysis results model
Conjoint analysis in principle aims to estimate the opinion pattern of respondents from conjoint results with the opinions of actual (actual) respondents on the stimuli process. The accuracy of predictions is reflected by the existence of a high correlation and significance between the results of the conjoint and the results of the respondents.

| Correlations | Value | Sig. |
|--------------|-------|------|
| Pearson's R  | 0.801 | 0.000|
| Kendall's Tau| 0.595 | 0.000|

a. Correlations between observed and estimated preferences

Source: Primary data analysis, 2019
To determine the accuracy of the prediction model results conjoint analysis can be seen through the correlation value Pearson’s R and Kendall’s Tau. In Table 4 shows the resulting correlation number is high both on the Pearson's correlation value (0.801) and Kendall’s Tau (0.595) which shows the accuracy of the conjoint process. Based on the significance values of Pearson's and Kendall’s Tau which are equal to 0.000 where 0.000 < 0.05, is rejected so the interpretation is that there is a strong relationship between estimation preferences and actual preferences, or high predictive accuracy in the conjoint process.

4. Conclusions

Consumer preferences for bottled coffee are black coffee, the flavour is very fragrant, the packaging is not attractive, with prices > 8,000 IDR, the thickness is normal, and the promotion obtained by consumers is through social media. Attributes that become the main consideration of consumers in Medan in the decision to purchase bottled coffee based on the highest importance to the lowest value are flavour, promotion, colour, thickness, packaging, and price. Pearson's and Kendall's Tau correlation values 0.000 (< 0.05), the interpretation is that there is a strong relationship between estimation preferences and actual preferences, or high predictive accuracy in the conjoint process means that local rice which is the preference of sample consumers can describe consumer preferences whole (population).

Preferences
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