

Factors Affecting Consumer Decision to Buy Berastagi Orange in Medan

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Abstract - Berastagi Orange is one of main fruit for Medan citizens in daily consume. Consumer decision is influenced by factors. This study aims to analyze through consumer decision to buy orange. The sample of this study are 120 orange's consumers. Sampling method used binary logit regression. The results showed that price ratio and orange size influence positively to consumer decision while orange colour and consumer income do not influence consumer decision in buying Berastagi orange.

Keywords - Consumer Decision, Price Ratio, Size, Colour, Income, Binary Logit Regression.

I. INTRODUCTION

Orange is one of the horticultural commodities favored by people in Indonesia. orange has a distinctive aroma and flavor that makes oranges become one of the favorite fruit of Indonesian society.

On the other hand, from the aspect of citrus health consists of the content of vitamins, minerals, protein and

fiber contained in oranges that are beneficial to the health of the body.

Citrus cultivation center in Indonesia is located in Medan, Garut, Tawangmangu, Batu, Tejakula, Pontianak and Selayar (Tim Mekarsari, 2010).

Indonesian oranges consumption in the last 10 years can be seen in Table 1

Table 1. The Development of Oranges Consumption in Indonesia Year 2005-2015

Year	consumption of oranges (Kg/Kap/year)	growth (%)
2005	2,61	-
2006	3,08	17,99
2007	3,86	25,46
2008	3,60	-6,76
2009	4,64	28,99
2010	4,17	-10,13
2011	3,49	-16,23
2012	2,76	-20,89
2013	2,24	-18,89
2014	2,69	20,15
2015	3,28	21,68

Source: Pusdatin Ministry of Agriculture, 2016

Based on Table 1. it is known that the highest consumption of orange in Indonesia occurred in 2009 with the value of public consumption of 4.64 kg / kap / year with a growth value of 28.99%.

One type of orange cultivated in Indonesia, especially the province of North Sumatra is Berastagi Citrus. Berastagi orange is a type of WNO (Washington Novel Orange), but because it is grown in Berastagi it is called Berastagi sweet

orange. Medan City is the capital of North Sumatra Province. Medan City became the largest trading and service base in North Sumatra Province.

Based on data from the Central Bureau of Statistics Year 2016, the population of Medan city is 2,229,408 people. The relatively large population is a potential market for citrus marketing.

Table 2. Number of Orange Consumption in Medan City Year 2005-2015

Year	Total Population of Medan City	Per Capita Orange Consumption Indonesia	Number of Orange Consumption of Medan City (Ton)
2010	1.905.587	4,17	7.946,29
2011	2.117.224	3,49	7.389,11
2012	2.122.804	2,76	5.858,93
2013	2.123.210	2,24	4.755,99
2014	2.123.210	2,69	5.711,43
2015	2.210.624	3,28	7.250,84

Source: Pusdatin Ministry of Agriculture 2016, processed

Based on Table 2 it is known that in the last 6 years the number of orange consumption in Medan City was highest in 2010 with the total consumption of 7,946.29 tons and the lowest amount of orange consumption in Medan City occurred in 2013 with 4,755.99 tons. The largest orange production center nearest to Medan City is Karo Regency.

Berastagi orange is one of the main choices of people in the city of Medan in the fulfillment of daily consumption of orange in addition to the choice of imported oranges with different characteristics with Berastagi oranges. With the opening of free trade between countries, of course Berastagi orange must have its own charm to win the competition. Consumers of oranges will certainly be more selective in buying oranges. Important factors that must be owned by Berastagi will affect consumer's decision to buy Berastagi orange.

The purpose of this research is to analyze the influence of price ratio, Berastagi orange size, Berastagi orange color and consumer income to consumer decision to buy Berastagi orange in Medan City and to analyze the influence of price ratio, Berastagi orange size, Berastagi orange color and consumer income together same to the consumer's decision to buy Berastagi oranges in Medan City.

II. RESEARCH METHOD

The method used with binary logit regression model. This is done because the response variable consists of two types of variables. Binary regression consists of 0 and 1.

Binary logit regression model as follows.

$$\frac{p}{1-p} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots \beta_5 X_5$$

Where:

- $\frac{p}{1-p}$: Odd Ratio (comparison opportunities), where:
 p states the probability of occurrence of events
 $1-p$ states the probability not the occurrence of events
- β_0 : constants
- Y : The consumer's decision to buy orange Berastagi
 1 = Consumers buy Berastagi Oranges
 0 = Consumers do not buy Berastagi oranges (buy imported oranges)
- X_1 : Price Ratio (Rp/Kg)
- X_2 : Berastagi Orange Size
 1 = Large berastagi oranges (4 - 6 pieces / kg)
 0 = Berastagi orange sized outside great
- X_3 : Berastagi Orange Color
 0 = Berastagi orange is ripe yellow
 0 = Berastagi orange is colored outside yellow
- X_4 : income consumer (Rp/month)

III. RESULT AND DISCUSSION

A. Factors - Factors Affecting Consumer Decision to Buy Berastagi Oranges in Medan City

The following descriptive explanation of factors - factors that affect consumers buy Berastagi oranges in the city of Medan

1) Price Ratio

The price a consumer pays for the purchased product is the consumer's appreciation of the satisfaction of the product he purchased (Walters, 2000). Based on the results of research in the field, while the average price of Berastagi oranges in some traditional markets and supermarkets in the city of Medan is Rp. 10,000 - Rp. 25,000.

The difference in price on Berastagi orange is differentiated by size, for small size usually ranges from Rp. 10,000 - Rp. 15,000 while the price of Berastagi large berryagi ranged from Rp. 18,000 - Rp. 25,000. Thus, the average price ratio of citrus berastagi compared with orange imports ranged from Rp. 10,000 up to Rp. 20,000.

2) Berastagi Orange Size

Consumer purchasing decisions can be influenced by many factors both inside and outside factors.

The basis of purchasing decisions for a consumer one of them is a factor of the product. According Tjiptono (2008) components that exist within the product factor is often the basis of purchasing decisions for a consumer.

One of the components present in the product factor in Berastagi citrus fruit is the size of Berastagi oranges.

In research Syani Juara (2012) which become factor in Decision and Satisfaction of Consumers of Jeruk Medan in Bogor City such as price, size, skin color, presence or absence of seeds. While the research Isni Yuniar (2012) on the Analysis of Consumer Preference Against Local Citrus Fruits and Imported Citrus Fruits in Kudus District, it is known that the local citrus fruits that become consumers' favorite in Kudus District is the size of the fruit being. In the research area in the traditional markets and fruit market supermarkets of Medan City, Berastagi oranges are sold by size, ie large size (4-6 pieces / kg) and out of large size.

3) Berastagi Orange Colors

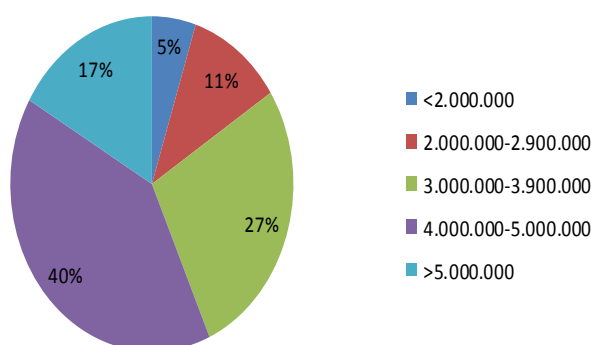
In this study, Berastagi orange consists of mature yellow and outside yellow. The more consumers decided to buy Berastagi orange ripe yellow because it is considered more sweet than the yellowish-green.

While on Isni Yuniar's (2012) research on Consumer Preference Analysis on Local Citrus Fruits and Imported Citrus Fruits in Kudus Regency, it is known that the color of local citrus fruits that become consumers' favorite in Kudus Regency is citrus fruit with yellowish green color.

4) Consumer income

According to Reksoprayitno (2004) the income of the community or also called consumers is the amount of income received by members of the community for a certain period of time as a consideration. Revenue can also be sourced from the salary and effort received.

In this study, consumers who decide to buy Berastagi oranges can be seen in the following graph.



Source: Primary Data Processed 2017

Figure 1. Graph The Number of Respondents by Revenue

From Figure 1 it is known that the average consumer income in this research is Rp. 4,456,833.

The level of consumer income in this study varied, from income amounted to <Rp. 2,000,000 to the highest> Rp. 5,000,000. Respondents in the field with different levels of income buy Berastagi oranges.

Thus, it is known that the price of Berastagi orange in Medan City has been reached from various levels of income of the people of Medan City. This is in accordance with Sriwijayanti (2004) research that oranges are the main source of fruit consumption with the largest proportion of expenditure compared to other fruits commodities in lower, middle and upper class household groups.

B. Result of Goodness Of Fit Analysis of Logistic Regression Model

Based on the results of data processing using SPSS version N0.16 obtained the logistics results in Table 3 below.

Table 3. Results of Logistic Regression Analysis

Variable	B	SE	Sig	Exp(B)
Price Ratio	3,612	2,425	0,000	1,495
Size of Berastagi Orange	2,313	0,814	0,004	10,101
Berastagi Orange Color	-0,733	0,503	0,145	0,481
Consumer Revenue	0,000	0,000	0,808	1,000
Constant	-5,477	1,748	0,004	0,004
G = 28,309 (sig = 0,000)				
Chi-square = 13,135 (sig = 0,107)				

Source: Primary Data Processed 2017

From logistic regression analysis result obtained logistic regression equation as follows:

$$\text{Ln} \frac{p}{1-p} = -5,477 + 3,612 X_1 + 2,313 X_2 - 0,733 X_3 + 0,000 X_4$$

C. Model Conformity Test Results

a) Classification Assessment Test (*percentage correct*)

Table 4. Test Results *Percentage Correct*Classification Table^{a,b}

Observed			Predicted		
			Consumer Decision		Percentage Correct
			not buying	buyi	
Step 0	Consumer Decision	not buying	0	46	.0
		buy	0	74	100.0
Overall Percentage					61.7

Classification Table^a

Observed			Predicted		
			Consumer Decision		Percentage Correct
			Not buyingi	buying	
Step 1	Consumer Decision	Not buying	23	23	50.0
		buying	13	61	82.4
Overall Percentage					70.0

Source Result Of Data Processing, 201

Table 4 shows that the samples used in this study were 120 samples consisting of 46 samples not buying Berastagi oranges (buying imported oranges) and 74 samples purchasing Berastagi oranges. The prediction classification results show the prediction determination between samples not buying Berastagi oranges (buying imported oranges) and buying Berastagi oranges by 61.7%.

Out of 46 samples do not buy Berastagi oranges (buy imported oranges) 13 samples can still be predicted not to buy Berastagi oranges while 23 samples do not buy Berastagi oranges. From the table that does not buy Berastagi predicted as many as 23 samples was predicted to buy Berastagi oranges. Overall prediction is 70%.

b) Hosmer and Lemeshow Test

Tabel 5. Hasil uji Hosmer and Lemeshow Test

Hosmer and Lemeshow Test			
Step	Chi-square	Df	Sig.
1	13.135	8	.107

Source : Result Of Data Processing

From Table 5 it can be seen that the obtained chi-square value is 13,135 with a significance level of 0.107. Level of significance obtained > 0.05 then reject H_1 and receive H_0 . Thus there is no difference between the observed distribution and the estimated frequency distribution. So the logit model is suitable for use.

D. Significance Test Results

a) Test the variables simultaneously with test G

Table 6. G test results of variables simultaneously

Omnibus Tests of Model Coefficients			
Step 1	Chi-square	Df	Sig.
Model	28.309	4	.000

Source : Result Of Data Processing

From Table 6 it can be seen that the value of G obtained is 28.309 with a significance level of 0.000. Level of significance obtained $0.000 < 0.05$ then reject H_0 and receive H_1 .

Thus, there is at least one independent variable that affects the dependent variable.

b) Partial variable test with Wald test

Wald test is used to determine whether there is a significant influence on each independent variable to the dependent variable.

This can be seen in Table 7.

Table 7. Partial Wald variable test results

Variable	B	Wald	Sig
Price Ratio	3,612	15,716	0,000
Size of Berastagi Orange	2,313	8,080	0,004
Berastagi Orange Colour	-0.733	2,126	0,145
Consumer Revenue	0.000	0.059	0,808

Source: Primary Data Processed 2017

From Table 7 it is known that the ratio of price and size ratio of berastagi berastagi, influence to consumer decision to buy Berastagi orange. While Berastagi orange color variables and consumer income does not affect the consumer decision to buy Berastagi oranges.

E. Interpretation

The way used to interpret the logistic regression parameters of categorical variables is by odd ratios (Hosmer and Lemeshow, 2000). The categorical variables in the

study include the size of Berastagi orange (X_2) and Berastagi orange color (X_3).

The odd ratio for a predictor variable k is the value of $\text{Antiln of } (\beta_i)$ or $\exp (\beta_i)$ for $i = 1, \dots, k$.

Odd ratio = $\exp (\beta_i)$

Meanwhile, for covariate variable is interpreted based on Marginal Effect value. Covariate variable in this research is price ratio (X_1) and consumer income (X_3).

So obtained results and interpretations on each variable as follows.

F. Opportunities consumers buy Berastagi oranges against price ratio

The odds ratio for the price ratio variable is 0.86. The results of the calculation explain that when the ratio of orange prices increased by 1 Rupiah, the chances of consumers to decide to buy Berastagi oranges increased by 86%.

Price ratio is the ratio of berastagi price of orange to imported orange price. From the research result, it is known that imported orange price is higher than Berastagi orange price.

The existence of positive influence of price ratio to consumer decision to buy Berastagi orange because seen from its price ratio, Berastagi orange is still cheaper compared to imported citrus price. So consumers still decide to buy Berastagi oranges.

This is in line with the research results Agriani Hermita and Hesty Nurul (2013) who examines Consumer Attitudes Against Product Attributes to Measure the Competitiveness of Citrus Products shows that the price is one of the factors. Although in this study the price of local oranges is more expensive than imported oranges, consumers still buy local oranges because if viewed in terms of quality, for example tangerine and orange Siam, have a better quality, fresher, sweeter than imported oranges.

G. Opportunities consumers buy Berastagi oranges against the size of Berastagi Oranges

The odds ratio for the Berastagi citrus size variables is 0.90. That is, opportunities Berastagi orange large size, larger than 90% compared to Berastagi orange out of large size. The existence of the positive effect of Berastagi orange size on consumer decision to buy Berastagi orange indicates that the bigger the size of Berastagi orange then the consumer decision to buy Berastagi orange increases.

This is in line with the results of research Luthfi Indriyani (2017) who examines the Image Processing Technique To Measure Diameter of Citrus Fruits Using Matlab Application indicates that each citrus fruit has a different size or diameter that will affect the selling value, the larger the size it will be more expensive so that the government has set the SNI standard for citrus fruits that are suitable for sale and consumption, where the large citrus fruits are citrus fruits that meet the standard in the fulfillment of the maturity level on the fruit and meet the

nutritional and vitamin standards in the consumption of the day.

H. Variables that have no effect on consumer's decision to buy Berastagi oranges

Variables that have no significant effect on consumer decision to buy Berastagi orange are Berastagi orange color variables and consumer income.

In Berastagi orange color variables, most consumers still believe that Berastagi orange is a honey orange that taste is already sweet, so that any color of the skin is definitely sweet, so consumers consider the color does not affect the decision to buy Berastagi oranges.

As for the marketing, Berastagi orange color does not show quality, so consumers are free to assume that every color is the same. So the desire and taste of consumers to orange yellow or orange outside yellow shows the tastes of consumers and their hope will get a sweet Berastagi orange.

This is in line with the results of research Isni Yuniar (2012) who examines the Analysis of Consumer Preference Against Local Fruits and Citrus Fruits Imported in Kudus District indicates that the type of local orange preferred by consumers is that have a green yellow color.

The consumer income factor has no effect in influencing consumer's decision to buy Berastagi orange. Consumer income factor becomes no effect due to the fact that in the field that happens that consumer who buys Berastagi orange comes from different levels of income - different.

In other words, low-income and high-income consumers buy Berastagi oranges as well. So that Berastagi citrus fruit is not a certain kind of fruit that is only consumed by people with certain income only.

It is also supported by research conducted by Sriwijayanti (2004), that oranges are the main source of fruit consumption with the largest proportion of expenditure compared to other fruits commodities in lower, middle and upper class household groups.

So it is not in accordance with the hypothesis of variables that states that consumer income affects consumer decisions buy berastagi oranges in the city of Medan.

IV. CONCLUSIONS

The conclusion of this research is the variable of price ratio and size of Berastagi orange have positive influence while the variable while the color of berastagi citrus and consumer income do not influence to consumer decision to buy berastagi orange.

Price ratio, size of berastagi berastagi, berastagi orange color and consumer income together have an effect on to consumer decision to buy berastagi orange.

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