

# FACTORS AFFECTING CONSUMPTION OF POWDER COFFEE IN THE SOUTH KALIMANTAN PROVINCE OF INDONESIA

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## FACTORS AFFECTING CONSUMPTION OF POWDER COFFEE IN THE SOUTH KALIMANTAN PROVINCE OF INDONESIA

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### ABSTRACT

Coffee commodities still have a very wide and open local market; domestic coffee consumption and foreign market demand are rising, but coffee production is steadily declining. Due to its potential for fertile soil, South Kalimantan Province is recognized as an agricultural region and a producer of a range of agricultural, horticultural, and plantation commodities. It can be argued that South Kalimantan residents consume more ground coffee on a weekly per capita basis every year. It is reported that South Kalimantan residents consumed 0.08 kg of ground coffee on average per week in 2018, 0.09 kg in 2019, 0.10 kg in 2020, and 0.12 kg in 2021. This study aims to examine: (a) ground coffee consumption patterns in South Kalimantan Province at different income levels; (b) community factors that affect ground coffee consumption; and (c) the price, income, and cross-elasticity of ground coffee products in South Kalimantan Province. Tobit's censored data multivariable regression was employed for the data analysis. The study's findings indicate that while the causes influencing ground coffee consumption in urban and rural areas are distinct, there are variances in consumption patterns between rural and urban groups at different income levels. Cross-income between rural and urban groups yields the same result for price elasticity.

### KEY WORDS

Consumer, consumption, ground coffee, Tobit censored data regression.

It may be said that the amount of ground coffee consumed weekly per person in South Kalimantan is rising yearly. The average amount of coffee consumed per person in each city or region is shown in Table 1.

Table 1 – Data on ground coffee consumption per capita

City/Year	2020	2021
Tanah Laut	0,152	0,191
Kota Baru	0,244	0,293
Banjar	0,119	0,149
Barito Kuala	0,059	0,069
Tapin	0,318	0,264
Hulu Sungai Selatan	0,012	0,01
Hulu Sungai Tengah	0,021	0,022
Hulu Sungai Utara	0,044	0,027
Tabalong	0,103	0,143
Tanah Bumbu	0,119	0,22
Balangan	0,033	0,034
Banjarmasin City	0,03	0,028
Banjarbaru City	0,148	0,137
Average	0,108	0,122

Source: BPS 2021.

Urban and rural societies have diverse consumption habits at every level of society. Compared to rural areas, urban areas are more consumptive. There is a need for in-depth research on the variations in ground coffee consumption patterns at each level of society,



both rural and urban, due to limited income for each layer of society with low, medium, and high incomes.

In addition, it is vital to identify the elements that influence the consumption of ground coffee. Besides the influence of pricing and wealth, public consumption in an area is often influenced by other factors. Coffee consumption characteristics are believed to make it easier for ground coffee producers to make judgments and build plans. Besides that, it is able to boost the per capita consumption of the people of South Kalimantan in particular. Elasticity analysis provides convenience and knowledge to producers by helping them find out the criteria for coffee customers so that they can set prices that consumers may tolerate. The background above provides an overview of the problems regarding consumption patterns of ground coffee in rural and urban communities in South Kalimantan Province at various income levels; the factors that influence the pattern of ground coffee consumption among people in South Kalimantan; and the price elasticity, income, and cross elasticity of ground coffee products in South Kalimantan.

#### 14 METHODS OF RESEARCH

This investigation was conducted in the Province of South Kalimantan. The time for research is between December 2022 and March 2023.

The data to be used in this research is secondary data. Secondary statistics, especially in the form of Susenas data (the National Socioeconomic Survey) for 2021 for the Province of South Kalimantan, were gathered by the Central Bureau of Statistics.

In an effort to answer the first study problem involving consumption patterns of ground coffee among the inhabitants of South Kalimantan, a descriptive analysis was performed. This descriptive analysis classifies public consumption patterns according to urban and rural areas into three groups, namely high income, medium income, and low income groups, with the following criteria:

- Separating income data (X) according to rural communities and urban communities;
- Calculating the median ( $\mu$ ) income of urban and rural communities;
- Calculate the income standard deviation ( $\sigma$ ) of the income of rural and urban communities.

$$\begin{aligned} 15: \bar{X} - S &= \text{low income} \\ \bar{X} - s < X < \bar{X} + S &= \text{moderate income} \\ X > \bar{X} + S &= \text{high income} \end{aligned}$$

In an effort to answer the second problem regarding the factors that influence ground coffee consumption, Tobit regression analysis is used with the following formulation:

$$8 \quad Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{14} X_{14} + \beta_{15} X_{15} + \beta_{16} X_{16} + \beta_{17} X_{17} + \beta_{18} X_{18} + \beta_{19} X_{19} + \beta_{20} X_{20} + \beta_{21} X_{21} + e \quad (1)$$

Where:

- Y: coffee consumption (ounces per month);
- X<sub>1</sub>: ground coffee price (Rp/ounce);
- X<sub>2</sub>: price of sugar (Rp/ounce);
- X<sub>3</sub>: price of brown sugar (Rp/ounce);
- X<sub>4</sub>: price of instant coffee (Rp/sachet);
- X<sub>5</sub>: price of the finished drink (Rp/glass);
- X<sub>6</sub>: price of cigarettes (Rp/stick);
- X<sub>7</sub>: liquid milk price (Rp/per box);
- X<sub>8</sub>: price of powdered tea (Rp/ounce);
- X<sub>9</sub>: the price of the dip (Rp/sachet);
- X<sub>10</sub>: income (monthly);



- $X_{11}$ : sugar consumption (ounces/month);
- $X_{12}$ : consumption of brown sugar (ounces/month);
- $X_{13}$ : consumption of instant coffee (sachet/month);
- $X_{14}$ : ready-to-drink consumption (glass/month);
- $X_{15}$ : cigarette consumption (cigarettes per month);
- $X_{16}$ : factory liquid milk consumption (per box (250 ml)/month);
- $X_{17}$ : consumption of powdered tea (ounces/month);
- $X_{18}$ : consumption of tea dip (sachet/month);
- $X_{19}$ : gender (D0: female; D1: male);
- $X_{20}$ : number of family members;
- $X_{21}$ : number of hours worked (a month);
- $\alpha$ : constant;
- $e$ : model residuals that follow the censored normal distribution;
- $\beta_{1-21}$ : coefficient value of each independent variable.

Attempts to obtain a tobit regression model are made through testing the following parameters (Hosmer & Lemeshow, 2000).

The simultaneous test is used to examine the function of the coefficient  $\beta$ s as a whole or together. To test it, we used the likelihood ratio method, or the G test. The following hypothesis is used.

$$H_0: \beta_1 = \beta_2 = \dots = \beta_{21} = 0$$

$$H_1: \text{There is at least one } \beta_i \neq 0, i=1,2,\dots,21$$

The test statistics used are as follows:

$$G_{\text{count}} = -2 \ln \frac{L(\omega)}{L(\Omega)}$$

Where:

- $L(\omega)$ : maximum likelihood value without certain predictor variables;
- $L(\Omega)$ : likelihood with certain predictor variables.

Test criteria:

- $H_0$  cannot be rejected if  $G_{\text{count}} \leq \chi^2_{(va)}$  or if  $p\text{-value} > \alpha$  for the response variable;
- $H_0$  rejected if  $G_{\text{count}} > \chi^2_{(va)}$  or if  $p\text{-value} < \alpha$  for the response variable.

A partial test is used for individual testing, which indicates whether an independent variable is significant or feasible to enter the model or not. To test it, use the Wald test.

The following hypothesis is used:

- $H_0: \beta_j = 0$  (the  $\beta_j$  coefficient is not statistically significant);
- $H_0: \beta_j = 0$  (coefficient  $\beta_j$  statistically significant),  $j = 1, 2, \dots, 21$ .

The test statistics used are:

$$W = \frac{\beta_j}{SE(\beta_j)}$$

Where:  $SE(\beta_1)$  – Variant;  $\beta_1$  - the estimated coefficient value of the independent variable.

Criteria Test:

- $H_0$  cannot be denied if  $w^2 \leq \chi^2_{\alpha}$  or if  $p\text{-value} > \alpha$  means  $\beta_j$  have a role in the model;
- $H_0$  rejected if  $w^2 > \chi^2_{\alpha}$  or if  $p\text{-value} < \alpha$  means  $\beta_j$  has no role in the model.

To answer the third problem regarding price elasticity, income elasticity, and cross-price elasticity of ground coffee products, the elasticity analysis tool is used from the regression coefficient obtained in the Tobit model analysis above.

To calculate the self-price elasticity value of ground coffee consumption:

$$\epsilon_{op_i} = \beta_{op_i} \times \left[ \frac{K_i}{K_i + TK_i} \right] \times \frac{OP_i}{C_i}$$



$$= \frac{n_1}{n_0 + n_1} \times k$$

Where:

- $\varepsilon_{op_i}$ : price elasticity;
- $n_1$ : number of samples of coffee consumers;
- $n_0$ : number of samples of coffee consumers.

If:

- $\varepsilon_{op_i} > 1$  is said to be elastic demand;
- $\varepsilon_{op_i} < 1$  is said to be inelastic demand;
- $\varepsilon_{op_i} = 1$  is said to be unitary elasticity.

To calculate the cross-price elasticity, the following formula is used:

$$\begin{aligned} \varepsilon_{cp} &= \beta_{cp} \times \left[ \frac{K_i}{K_i + TK_i} \right] \times \frac{\overline{Cp_j}}{\overline{C_i}} \\ &= \frac{n_1}{n_0 + n_1} \times \text{cross regression} \end{aligned}$$

Where:

- $\varepsilon_{cp_i}$ : price elasticity;
- $n_1$ : number of samples of coffee consumers;
- $n_0$ : number of samples of coffee consumers.

If:

- $\varepsilon_{cpi}$  is positive, then substitute good;
- $\varepsilon_{cpi}$  is negative, then goods are complementary.

To calculate the income elasticity value, the following formula is used:

$$\begin{aligned} \eta_i &= \beta_i \times \left[ \frac{K_i}{K_i + TK_i} \right] \times \frac{\overline{I}}{\overline{C_i}} \\ &= \frac{n_1}{n_0 + n_1} \times \text{income regression coefficient} \end{aligned}$$

Where:

- $\eta_i$ : price elasticity;
- $n_1$ : number of samples of coffee consumers;
- $n_0$ : number of samples of coffee consumers.

if:

- $\eta_i$  is positive, then goods are normal;
- $\eta_i$  is negative, then the goods are inferior information.

Explanation:

- $\varepsilon_{opi}$ : self-price elasticity of ground coffee consumption;
- $\varepsilon_{cpi}$ : cross-price elasticity of ground coffee consumption;
- $\eta_i$ : income elasticity of i-th food consumption;
- $K_i$ : number of households consuming ground coffee;
- $TK_i$ : number of household samples that do not consume ground coffee;
- $\left[ \frac{K_i}{K_i + TK_i} \right]$ : proportion of households consuming food -i;
- $\beta_{opi}$  coffee self-price regression coefficient of ground coffee consumption;
- $\beta_{cpi}$ : cross-price regression coefficient of ground coffee consumption;
- $\beta_i$ : regression coefficient of ground coffee consumption income;
- $\overline{I}$ : average household income;
- $\overline{C_i}$ : average cigarette consumption;
- $\overline{OP_i}$ : average price of cigarettes;
- $\overline{CP_i}$ : average price of other goods.



## RESULTS AND DISCUSSION

The pattern of consumption of ground coffee can be explained based on low, medium and high income categories, both rural and urban consumption that is consumed or used by residents in a certain period of time, along with income classification:

Table 2 – Income Classification

Income	Large range of income (Rp) per month	
	Urban Society	Rural Society
Low	< 663.874	< 553.298
Currently	663.874- 10.823.264	553.298 - 4.013.173
Tall	>10.823.264	> 4.013.173

Source: Processed Data (2023).

The description of consumption patterns can be seen through the coffee consumption variables in Table 3.

Table 3 – Consumption Patterns of various levels of income

Income	Consumption (tons)	Expenditure of Coffee (Rp)	
		Urban Society	Price (Rp)
Low	1,76	12.464,80	7.090,43
Currently	1,76	12.870,52	7.331,43
Tall	1,71	12.093,32	7.090,56
Average	1,74	12.476,21	7.170,81
Rural Society			
Low	1,75	13.389,37	7.644,87
Currently	1,75	13.369,32	7.640,24
Tall	1,75	13.360,22	7.628,34
Average	1,75	13.372,97	7.637,82

Source: Processed Data (2023).

Coffee consumption expenditure of rural communities is greater than that of urban communities in South Kalimantan Province. The average consumption expenditure of ground coffee per capita in rural and urban communities does not show a very large difference in consumption, and the difference between income levels can be seen clearly. According to Lestari (2009), this is because rural communities hold gatherings and meetings such as salvation, and they always consume coffee drinks compared to urban people, who consume a variety of drinks, not just coffee drinks, causing spending on powdered coffee consumption in rural communities to be higher than in urban areas. <sup>5</sup>

Analysis of the Tobit censored data regression model uses the Likelihood Ratio test and the Wald test. The Likelihood Ratio test is intended to verify the existence of factors that influence ground coffee consumption as the dependent variable individually in the model. Estimation of the Tobit censored data regression model is calculated in Table 4.

Table 4 – Likelihood Ratio Results

Redundant Variable	Log likelihood ratio	Probability
Ground Coffee Prices	192,0116	0,0000
Sugar Prices	1,648888	0,1991
Price of Brown Sugar	0,058526	0,8088
Instant Coffee Prices	1,55E-01	0,6937
Finished Beverage Prices	0,011166	0,9158
Cigarette Prices	0,07082	0,9850
Liquid Milk Prices	0,045455	0,8312
Price of Teabags	3,736639	0,0532
Income	3,714462	0,0539
Gender	0,393727	0,5303
Number of Family Members	0,496136	0,4812
Number of Working Hours	11,48675	0,0007

Source: Processed Data (2023).



Table 4 above shows the results that there are 4 (four) significant variables, namely the price of ground coffee ( $X_1$ ), the price of teabags ( $X_8$ ), income ( $X_{10}$ ), and working hours ( $X_{12}$ ).

Table 5 – Wald Test

Normalized Restriction (= 0)	Value	Std. Err.
C(1)	-0,0002	1,34E-05
C(2)	-1,93E-05	1,51E-05
C(3)	-1,05E-05	3,91E-05
C(4)	5,37E-06	1,31E-05
C(5)	4,68E-07	2,92E-06
C(6)	-8,44E-08	9,63E-07
C(7)	-1,24E-06	5,11E-06
C(8)	5,88E-05	3,05E-05
C(9)	1,21E-07	6,32E-08
C(10)	0,642065	1,012064
C(11)	0,00839	0,011822
C(12)	0,643093	0,190443

  

Test Statistic	Value	df	Probability
F-statistic	24,40932	(12, 838)	0,0000
Chi-square	292,9119	12	0,0000

Source: Processed Data (2023).

In the results of the analysis above, it shows that all variables fulfill the requirements for  $H_0$  cannot be rejected because  $w^2 \leq \chi^2 \alpha$  which means that  $\beta_j$  as a role in the data, so it is obtained that all independent variables in the Wald test have a role or influence on the data. In other words, the independent variables correspond to the chosen model (the Tobit model).

Regression analysis estimates the social economic factors that influence the consumption of ground coffee in the community in the Province of South Kalimantan using the EViews 10.0 package. The estimation results for the Tobit model are shown in Table 8..

Based on the results of the analysis presented in Table 6, it can be seen that the results of the Tobit model test show that there are eight explanatory variables that have a significant effect on ground coffee consumption (an independent variable) in urban communities, namely:

Table 6 – Regression test results

Variable	Coefficient	z-Statistic	Probability
Constant	7,422083	5,94795	0,0000***
Ground Coffee Prices	-0,0002	-14,5673	0,0000***
Sugar Prices	-1,93E-05	-1,28062	0,2003
Price of Brown Sugar	-1,05E-05	-0,26888	0,7880
Instant Coffee Prices	5,37E-06	0,409193	0,6824
Finished Beverage Prices	4,68E-07	0,160178	0,8727
Cigarette Prices	-8,44E-08	-0,08768	0,9301
Liquid Milk Prices	-1,24E-06	-0,24377	0,8074
Price of Teabags	5,88E-05	1,92417	0,0543*
Income	1,21E-07	1,918841	0,0550*
Gender	0,642065	0,634411	0,5258
Number of Family Members	0,008387	0,709491	0,4780
Number of Working Hours	0,643093	3,376824	0,0007***

Source: Processed Data (2023).

The z-test value shows a z-statistic value of -14.5673. The calculation results show that the probability of error is 0.0000, which means that the effect of coffee prices is significant if the 99% confidence level is used. The value of the regression coefficient on the ground coffee price variable is -0.0002, so every additional price of ground coffee is Rp.1.00/ounce, it will reduce the consumption of ground coffee in urban communities in



South Kalimantan Province by -0.0002 ounces assuming a variable others in the model are considered fixed.

The z-test value shows the z-statistic value of 1.92417. The results of the Tobit regression analysis show a probability of 0.0543, meaning that the tea price variable has a significant effect on ground coffee consumption at the 90% level of confidence. The regression coefficient value for the tea price variable is 0.000588 which means that every time the price of tea increases by IDR 1.00/ounce, it will increase the consumption of ground coffee in urban communities by 0.000588 ounces. It is assumed that other variables in the model are fixed.

The z-test value shows a z-statistical value of 1.918841. The calculation results show that the probability of error is 0.0550, so the effect of household income is significant if the 90% confidence level is used. The regression coefficient value for the income variable for the head of the household is 0.000000121, so for every additional urban income of Rp. 1.00, it will increase consumption of ground coffee in urban communities in South Kalimantan Province by 0.000000121 ounces. It is assumed that other variables in the model are considered fixed.

The z-test value shows a z-statistical value of 3.3768. The calculation results show that the probability of error is 0.0007, which means that the effect of the number of family members is significant if the 99% confidence level is used. The regression coefficient value for the variable number of family members is 0.643093, meaning that for every additional family member in a small town; one person consumes 0.643093 ounces of ground coffee in a small town in South Kalimantan province. It is assumed that other variables in the model remain constant.

Analysis of the Tobit censored data regression model uses the Likelihood Ratio test and the Wald test.

The Likelihood Ratio test is intended to verify the existence of factors that influence ground coffee consumption as the dependent variable individually in the model. Estimation of the Tobit censored data regression model is calculated in Table 7.

Table 7 – Redundant Variable

Redundant Variable	Log likelihood ratio	Probability
Ground Coffee Prices	269,1399	0,0000
Sugar Prices	15,68932	0,0001
Price of Brown Sugar	10,35392	0,0013
Instant Coffee Prices	6,460127	0,0110
Finished Beverage Prices	90,26384	0,0000
Cigarette Prices	1,023572	0,3117
Liquid Milk Prices	17,6556	0,0000
Price of Teabags	8,90215	0,0028
Income	656,4326	0,0000
Gender	12,2615	0,0005
Number of Family Members	3,913478	0,0479
Number of Working Hours	50,48695	0,0000

Source: Processed Data (2023).

From Table 7 above, the results show that there are 11 (eleven) significant variables, namely the price of ground coffee ( $X_1$ ), the price of sugar ( $X_2$ ), the price of brown sugar ( $X_3$ ), the price of instant coffee ( $X_4$ ), the price of finished drinks ( $X_5$ ), liquid milk price ( $X_7$ ), teabag price ( $X_8$ ), income ( $X_9$ ), gender ( $X_{10}$ ), number of hours worked ( $X_{11}$ ), and number of family members ( $X_{12}$ ).

The results of the analysis above show that all variables fulfilling the requirements for  $H_0$  cannot be rejected because  $w \leq 2$ , which means that  $j$  has a role in the data, so we get information that all independent variables in the Wald test have a role or influence on the data. In other words, the independent variable corresponds to the selected model (the Tobit model).





Table 8 – Wald test result

12	Normalized Restriction (= 0)	Value	Std. Err.
C(1)		-0,00036	2,19E-05
C(2)		-4,12E-05	1,04E-05
C(3)		-4,75E-05	1,50E-05
C(4)		2,98E-05	1,16E-05
C(5)		2,44E-05	2,64E-06
C(6)		-4,67E-07	4,61E-07
C(7)		-3,61E-05	9,39E-06
C(8)		7,07E-05	2,37E-05
C(9)		2,80E-06	1,10E-07
C(10)		1,755045	0,508411
C(11)		0,016582	0,008384
C(12)		0,894341	0,126916

6	Test Statistic	Value	df	Probability
F-statistic		153,96	(12, 49)	0,0000
Chi-square		1847,56	12	0,0000

Source: Processed Data (2023).

To estimate the socio-economic factors that affect the consumption of <sup>13</sup>ound coffee in the community in South Kalimantan Province, the E-Views 10.1 package is used, and the estimation results of the Tobit model are shown in Table 9.

Table 9 – Regression test results

Variable	Coefficient	z-Statistic	Probability	
Constant	-9,30459	-12,7138	0,0000	
Ground Coffee Prices	-0,00036	-16,4913	0,0000***	
Sugar Prices	-4,12E-05	-3,96925	0,0001***	
Price of Brown Sugar	-4,75E-05	-3,16683	0,0015***	
Instant Coffee Prices	2,98E-05	2,573011	0,0101**	
Finished Beverage Prices	2,44E-05	9,251611	0,0000**	
Cigarette Prices	-4,67E-07	-1,01255	0,3113	
Liquid Milk Prices	-3,61E-05	-3,84653	0,0001***	
Price of Teabags	7,07E-05	2,982933	0,0029***	
Income	2,80E-06	25,5213	0,0000***	
Gender	1,755045	3,452017	0,0006***	
Number of Family Members	0,016582	1,977933	0,0479**	
3	Number of Working Hours	0,894341	7,046728	0,0000***

Source: Processed Data (2023).

Based on the results of the analysis presented in Table 9, it can be seen that the Tobit model test results show that there are 11 (eleven) explanatory variables that have a significant effect on ground coffee consumption (independent variable) in rural communities in South Kalimantan Province, namely: ground coffee price ( $X_1$ ), price of sugar ( $X_2$ ), price of brown sugar ( $X_3$ ), price of instant coffee ( $X_4$ ), price of finished drinks ( $X_5$ ), price of liquid milk ( $X_6$ ), price of teabags ( $X_7$ ), income ( $X_8$ ), gender ( $X_9$ ), number of working hours ( $X_{10}$ ), and number of family members ( $X_{11}$ ), namely:

The z-test value shows a z-statistical value of -16.4913. The calculation results show that the probability of error is 0.0000, which means that the effect of coffee prices is significant if the 99% confidence level is used. The ground coffee price variable is known to have an influence on the consumption of ground coffee in rural communities in South Kalimantan Province. The regression coefficient value for the ground coffee price variable is -0.00036 which means that every additional price of ground coffee is IDR 1.00/ounce, it will reduce the consumption of ground coffee in rural communities in South Kalimantan Province by 0.00036 ounces with an alleged variable others in the model are considered fixed.

The z-test value shows the z-statistic value of -3.969. The results of the Tobit regression analysis show a probability of 0.0001, meaning that the sugar price variable has an influence on ground coffee consumption with a 99% confidence level. The regression



coefficient value for the sugar price variable is -0.0000412, so every increase in the price of sugar by IDR 1.00/ounce, it will reduce the price of sugar in rural communities by 0.0000412 ounces. It is assumed that other variables in the model are fixed.

The z-test value shows the z-statistic value of -3.1668. The results of the Tobit regression analysis showed a probability of 0.0015, meaning that the brown sugar price variable had an influence on ground coffee consumption with a 99% confidence level. The regression coefficient value for the brown sugar price variable is -0.0000475, so every time the price of brown sugar increases by IDR 1.00/ounce, it will lower the price of brown sugar in rural communities by -0.0000475 ounces. It is assumed that other variables in the model are fixed.

The z-test value shows a z-statistic value of 2.573. The results of the Tobit regression analysis show a probability of 0.0101, meaning that the price of instant coffee has an influence on ground coffee consumption with a 95% confidence level. The regression coefficient value for the instant coffee price variable is 0.0000298, which means an increase in the price of instant coffee by IDR 1.00 per sachet will increase the consumption of ground coffee in rural communities by 0.000298 ounces. It is assumed that other variables in the model are fixed.

The z-test value shows a z-statistic value of 9.2515. The results of the Tobit regression analysis show a probability of 0.0000, meaning that the beverage variable has a significant effect on ground coffee consumption with a 99% confidence level. The regression coefficient value for the finished beverage variable is 0.0000244, so every increase in the price of a finished drink by IDR 1.00 per glass will increase the consumption of ground coffee in rural communities by 0.0000244 ounces. It is assumed that other variables in the model are fixed.

The z-test value shows a z-statistic value of -3.846. The results of the Tobit regression analysis show a probability of 0.0001, meaning that the liquid milk price variable has an influence on ground coffee consumption with a 90% confidence level. The regression coefficient value for the liquid milk price variable is -0.000036, so every time the price of liquid milk increases by IDR 1.00/ounce, it will reduce the price of sugar in rural communities by 0.000036 ounces.

The z-test value shows a z-statistic value of 2.9829. The results of the Tobit regression analysis show a probability of 0.0029, meaning that the teabag price variable has a significant effect on ground coffee consumption at the 99% level of confidence. The regression coefficient value for the tea price variable is 0.00007, so every time the price of the dye increases by IDR 1.00 per sachet, it will increase the consumption of ground coffee in rural communities by 0.00007 ounces. It is assumed that other variables in the model are fixed.

The z-test value shows a z-statistic value of 25.5213. The calculation results show that the probability of error is 0.0000, so the effect of household income is significant if the 99% confidence level is used. The regression coefficient value for the income variable for the head of the household is 0.0000025. This means that for each additional income of Rp. 1.00 in rural communities, this increases the consumption of ground coffee in rural communities in South Kalimantan Province by 0.0000025 ounces. It is assumed that other variables in the model are considered fixed.

The z-test value shows a z-statistic value of 3.452. The calculation results show that the probability of error is 0.0006, so the effect of household income is significant if the 99% confidence level is used. The regression coefficient value for the gender variable of the head of household is 1.755, which means that in rural communities, men consume the most coffee compared to women. If there is an additional male family member, it will increase the consumption of ground coffee in rural communities in South Kalimantan Province by 1.755 ounces. It is assumed that other variables in the model are considered fixed.

The z-test value shows a z-statistical value of 1.977. The calculation results show that the probability of error is 0.0000, which means that the effect of the number of family members is significant if the 99% confidence level is used. The regression coefficient value of the variable number of working hours is 0.016, so for every additional working hour for the head of household in rural communities by 1 hour, it will increase the consumption of ground



coffee in rural communities in South Kalimantan Province by 0.016 ounces. It is assumed that other variables in the model are considered fixed.

The z-test value shows a z-statistic value of 7.0467. The calculation results show that the probability of error is 0.0000, which means that the effect of the number of family members is significant if the 99% confidence level is used. The regression coefficient value of the variable number of family members is 0.894, so for each additional family member in a rural community, it is 1 person, thus increasing the consumption of ground coffee in rural communities in South Kalimantan Province by 0.894 ounces. It is assumed that other variables in the model are considered fixed.

The results of research on the price elasticity of ground coffee in urban and rural communities in South Kalimantan Province are presented in Table 10.

Table 10 – The result of the calculation of the price elasticity of coffee

No.	Area	Price Elasticity
1	Urban	-0,00004
2	Rural	-0,000163

Source: Processed Data (2023).

Table 10 shows the coefficient value of the price elasticity of ground coffee in both rural and urban communities, which is all negative. This shows the fulfillment of the law of demand, where if there is an increase in the price of ground coffee, ceteris paribus will be followed by a decrease in the demand (consumption) of ground coffee. The price elasticity of ground coffee in urban areas is negative, which means that ground coffee is an inelastic product (not responsive to price changes).

The results of research on the cross-elasticity value of ground coffee in urban and rural communities in South Kalimantan Province are presented in Table 11.

Table 11 – Cross Elasticity

Variable	Cross Elasticity	
	Urban	Rural
Tea	0,0000507	0,0000784
Sugar	-0,0084979	-0,0032303
Cigarette	-0,0000008	-0,000001
Instant drink	0,0000004	0,0000072
Instant coffee	0,0000111	0,0002615
Factory liquid milk	-0,000001	-0,0000269

Source: Processed Data (2023).

This means that in urban and rural communities, sugar is complemented by ground coffee. The cross-elasticity of cigarettes to coffee for urban and rural communities in Table 11 shows a negative elasticity value. This means that in urban and rural communities, cigarettes are complementary to ground coffee. The cross-elasticity of finished drinks to ground coffee in urban and rural communities in Table 11 above shows a positive elasticity value. This means that in urban and rural communities, the drink is substituted with ground coffee. The cross-elasticity of instant coffee to ground coffee in urban and rural communities in Table 11 shows a positive elasticity value. This means that in urban and rural communities, instant coffee is substituted for ground coffee.

The results of calculating income elasticity can be seen in Table 12.

Table 12 – Results of income elasticity calculations

No.	Area	Income Elasticity
1	Urban	0,00000003862
2	Rural	0,00000107581

Source: Processed Data (2023).



In Table 12 it can be observed that the income elasticity for urban neighborhoods displays a positive sign which suggests that if there is an increase in income (ceteris paribus) it will be followed by an increase in consumption of ground coffee. In this scenario ground coffee is a typical item.

Table 12 illustrates the value of income elasticity in rural communities exhibiting a positive sign, implying that ground coffee in rural communities is included in the usual items or fundamental necessities of rural communities. This gives the concept that the more.

### CONCLUSION

The pattern of ground coffee consumption in rural and urban communities is different. Based on the analysis of the Tobit regression test, there are 14 variables that affect the consumption of ground coffee in rural communities and 8 variables that affect the consumption of ground coffee in urban communities. Ground coffee is included in inelastic goods. The results of cross-elasticity analysis in urban and rural communities show that tea and beverages are substitutes for ground coffee. While sugar, liquid milk, and cigarettes are complementary to ground coffee, drinks are complementary to ground coffee. The results of income elasticity in rural communities and urban communities in South Kalimantan Province show that ground coffee is a normal item (basic needs).

The government and stakeholders should be able to provide understanding and understanding regarding the quality of ground coffee. Ground coffee entrepreneurs in South Kalimantan Province are improving the quality and quantity of the ground coffee they produce and segmenting prices based on the quality of the ground coffee in order to increase market share for the products they produce.

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