
The Influence of Food Availability and Food Access on Food Security among Poor Households in Baturaja City

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ABSTRACT

Food is a fundamental human right guaranteed by the 1945 Constitution. Although South Sumatra is a major rice producer, Ogan Komering Ulu (OKU) Regency still faces nutritional and poverty challenges, with a Desirable Dietary Pattern (DDP) score of 88.4, which remains below the ideal national standard of 100. This study aims to analyze the influence of food availability and food access on the food security of poor households in OKU Regency. Using a quantitative survey method with 100 respondents, data were analyzed using multiple linear regression. The results indicate that both food availability and food access have a positive and significant influence on the food security of poor households, with food access providing a greater contribution.

Keywords: *Food Security, Food Availability, Food Access.*

INTRODUCTION

Food is the most essential basic human need, and its fulfillment is part of the human rights guaranteed in the 1945 Constitution of the Republic of Indonesia. The government holds a constitutional responsibility to realize food security, defined as a condition where food is fulfilled for the state down to the individual level, reflected in the availability of sufficient food in terms of quantity, quality, safety, diversity, nutritional value, equity, and affordability. However, despite the continuous growth of Indonesia's agricultural sector, achieving equitable food security at the household level,

particularly among poor communities, remains a crucial issue requiring serious attention.

South Sumatra Province is recognized as a national food granary, contributing significantly to national rice stocks. Nevertheless, macro-level success does not automatically guarantee food security at the micro or household level. In Ogan Komering Ulu (OKU) Regency, food security conditions still require improvement. Based on data from the Central Bureau of Statistics (BPS), the Desirable Dietary Pattern (DDP) score in OKU Regency in 2023 reached 88.4. While this shows an upward trend, it is still below the national ideal

target of 100. This score reflects that community food consumption is not yet fully diverse or nutritionally balanced, especially among households with economic constraints.

This indicates that the quality of food security in OKU Regency is considered suboptimal. Poverty and nutritional issues are complex problems. High percentages of underprivileged households and non-ideal DDP scores increase the likelihood of food insecurity, threatening household stability.

Number and Percentage of Poor Population in OKU Regency 2020-2024:



Figure 1: Number and Percentage of Poor Population in OKU Regency 2020-2024

MATERIALS AND METHODS

This study employs a quantitative approach with a survey method. It is explanatory in nature, aiming to explain the causal relationship or influence between independent variables—Food Availability (X1) and Food Access (X2)—and the dependent variable, Food Security of Poor Households (Y).

The research was conducted in Ogan Komering Ulu (OKU) Regency, South Sumatra Province. The location was selected purposively, considering the regional characteristics of diverse food access between urban and rural areas. Primary data collection was conducted in December 2025.

The population consists of all registered poor households in OKU Regency. The sample size was determined using the Slovin formula with a 10% precision level (α), resulting in 100 respondents. The sampling technique used was Simple Random Sampling to ensure every

Based on Figure 1, the poverty rate in OKU Regency fell by 1.01 digits in 2022, with the percentage of poor people at 11.61 percent compared to 12.26 percent in the previous year. Within the last year, the poverty rate decreased by 1.01 percent. The Head of BPS OKU, Mukti Riadi, explained that a reduction exceeding one digit is a remarkable achievement.

Food security rests on three interrelated pillars: availability, accessibility (access), and utilization. For poor households in OKU Regency, availability and access are the primary obstacles. Regarding availability, local production fluctuations and dependence on outside distributions often cause supply instability in local markets. Regarding access, poverty is the main determinant limiting purchasing power (economic access), alongside infrastructure constraints in remote areas that hinder physical access to quality food. The combination of limited availability and weak economic access forces poor households to adopt coping strategies by reducing both the quantity and quality of their food consumption.

population member had an equal chance of selection.

Data analysis was performed using SPSS version 21 through the following stages:

1. Data Quality Testing: Includes validity tests (Pearson Correlation) and reliability tests (Cronbach's Alpha)
2. Classical Assumption Testing: Includes normality, multicollinearity, and heteroscedasticity tests.
3. Multiple Linear Regression Analysis: To test partial and simultaneous influences via the equation::

$$Y = a + b_1X_1 + b_2X_2 + e$$
4. Hypothesis Testing: Using the t-test (partial), F-test (simultaneous), and Coefficient of Determination (R^2)

RESULTS AND DISCUSSION

The results of this analysis are expected to provide a clear picture of the factors influencing food security among poor households in Baturaja City, OKU Regency. The following are the results of the respondent data processing:

1. Data Quality Test

Data quality testing is the initial stage carried out in this study to ensure that the instruments used are capable of producing accurate and reliable data. The research instrument used was a questionnaire containing statements related to the variables of food availability, food access, and food security of poor households in OKU Regency in 2026. Data quality testing in this study was carried out through validity and reliability tests. The validity test aims to determine the extent to which each question item in the questionnaire is able to accurately measure the variables studied. An item

is declared valid if the correlation value (r count) is greater than r table or has a significance level less than $\alpha = 0.05$. Next, a reliability test is conducted to determine the level of consistency of the research instrument. An instrument is said to be reliable if it has a Cronbach Alpha value greater than 0.60, which indicates that all question items in that variable are able to provide consistent results. The following is the data quality test:

2. Validity Test

Based on the results of the validity test conducted on the 10 questions on the food availability variable, all items had calculated r values greater than the table r of 0.196. Therefore, all questions were declared valid and could be used as research instruments.

Table 1. Results of the Validity Test of Poor Household Respondents in Baturaja City, 2026

Item	R Count	R Table	Description
Food Security Variable (X1)			
X1.1	0,352	0,196	Valid
X1.2	0,421	0,196	Valid
X1.3	0,389	0,196	Valid
X1.4	0,275	0,196	Valid
X1.5	0,463	0,196	Valid
X1.6	0,318	0,196	Valid
X1.7	0,402	0,196	Valid
X1.8	0,356	0,196	Valid
X1.9	0,441	0,196	Valid
X1.10	0,298	0,196	Valid
Food Access Variable (X2)			
X2.1	0,321	0,196	Valid
X2.2	0,387	0,196	Valid
X2.3	0,295	0,196	Valid
X2.4	0,412	0,196	Valid
X2.5	0,356	0,196	Valid
X2.6	0,278	0,196	Valid
X2.7	0,433	0,196	Valid
X2.8	0,367	0,196	Valid
X2.9	0,401	0,196	Valid
X2.10	0,310	0,196	Valid
Poor households (consumption)	R Count	R Table	Description
Y1	0,412	0,196	Valid
Y2	0,458	0,196	Valid
Y3	0,367	0,196	Valid
Y4	0,521	0,196	Valid
Y5	0,389	0,196	Valid
Y6	0,476	0,196	Valid

Y7	0,338	0,196	Valid
Y8	0,445	0,196	Valid
Y9	0,402	0,196	Valid
Y10	0,356	0,196	Valid

Source: Primary Data (processed by SPSS 21), 2026

Based on the validity test results presented in the table above, it can be seen that all question items on the food security variable have a calculated r value greater than the r table of 0.196. Based on the validity test provisions, an item is said to be valid if the calculated r value is greater than the r table (calculated $r > r$ table) or the significance value is less than $\alpha = 0.05$. Thus, all question items are declared valid and can be used in this study. These results indicate that the instrument used has met the validity criteria and is able to measure the food security variable accurately, so it is suitable for use in further analysis.

3. Reliability testing

Reliability testing is used to determine the level of consistency of a research instrument in measuring the variables under study. An instrument is considered reliable if it produces consistent results when used under the same conditions. In this study, reliability testing was conducted using the Cronbach's Alpha method with the assistance of the IBM SPSS Statistics program. According to regulations, a variable is considered reliable if its Cronbach's Alpha value is greater than 0.60 ($\alpha > 0.60$). The following are the results of the reliability test:

Table 2. Results of the Reliability Test of Poor Household Respondents in Baturaja City, 2026

Variable	Cronbach Alpha	Description
Food Security Variable (X1)	0,732	Reliabel
Food Access Variable (X2)	0,701	Reliabel
Poor households (consumption) (Y)	0,768	Reliabel

Source: Primary Data (processed by SPSS 21), 2026

Based on the results of the reliability test, the Cronbach's Alpha value for the food availability variable was 0.732, the food access variable was 0.701, and the food security variable was 0.768. All of these values were greater than 0.60, thus, according to the reliability test requirements, the research instrument was declared reliable. This indicates that each question item in the questionnaire has a good level of consistency in measuring the variables studied. Therefore, the data generated from this instrument is reliable and suitable for use in further analysis.

4. Classical Assumption Test

The classical assumption test was conducted to ensure that the multiple linear regression model used in this study meets the basic assumptions, ensuring that the analysis results are reliable and unbiased. The classical assumption test in this study includes the normality test, multicollinearity test, and heteroscedasticity test, as follows: Uji Normalitas

The normality test aims to determine whether the data in the study is normally distributed. Normality testing is performed using the Kolmogorov-Smirnov test with the help of the IBM SPSS Statistics program.

Table 3. Normality Test of Poor Household Respondents in Baturaja City, 2026

Variabel	Asymp. Sig (2-tailed)	Description
Residual	0,200	Normal

Source: Primary Data (processed by SPSS 21), 2026

Based on the results of the normality test using the Kolmogorov-Smirnov method, the Asymp. Sig. value was obtained at 0.200. According to the provisions, data is said to be normally distributed if the significance value is greater than 0.05 ($\text{Sig} > 0.05$). Thus, it can be concluded that the data in this study is normally distributed and meets the assumptions of normality.

a. Multicollinearity Test

The multicollinearity test aims to determine whether there is a strong correlation between the independent variables in a regression model. A good regression model should not have multicollinearity. The following are the results of the multicollinearity test:

Table 4. Multicollinearity Test of Poor Household Respondents in Baturaja City, 2026

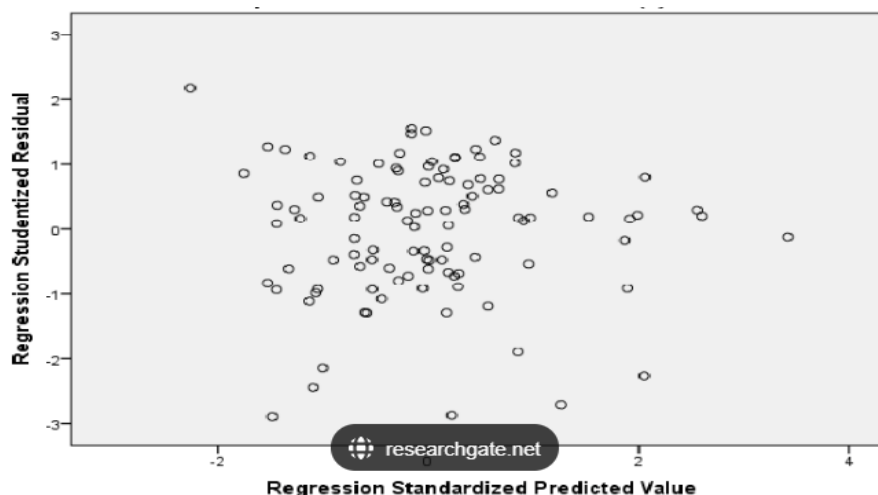
Variabel	Tolerance	VIF	Description
Food Security Variable (X1)	0,732	1,366	There is no multicollinearity
Food Access Variable (X2)	0,732	1,366	There is no multicollinearity

Source: Primary Data (processed by SPSS 21), 2026

Based on the results of the multicollinearity test, the tolerance value for each variable is greater than 0.10 and the Variance Inflation Factor (VIF) value is less than 10. In accordance with the provisions, the regression model is declared free from multicollinearity if the tolerance value is > 0.10 and $\text{VIF} < 10$. Thus, it can be concluded that there is no multicollinearity between the independent variables in this research model.

b. Heteroscedasticity Test

The heteroscedasticity test aims to determine whether there is unequal variance in the residuals in the regression model. A good regression model is one that does not experience heteroscedasticity. The test was conducted using the Glejser test with the help of IBM SPSS Statistics, with the following results:



Observing the scatterplot, the data points are scattered around the zero line, both above and below it, and are not concentrated on one side. This indicates that the residual variance is relatively constant across the range of independent variable values. Therefore, it can be concluded that there is no heteroscedasticity in the regression model used. This indicates that the regression model meets one of the classical assumptions, so the estimated regression coefficients can be considered valid and can be used for further analysis without requiring data correction or transformation.

4. Multiple Linear Regression Test

Multiple linear regression analysis was used to determine the effect of the independent variables, namely food availability (X1) and food access (X2), on the dependent variable, namely food security of poor households (Y) in OKU Regency in 2026. Data processing was performed using the IBM SPSS Statistics program as follows:

Table 5 Multiple Linear Regression Test of Poor Household Respondents in Baturaja City, 2026

Variabel	Koefisien Regresi	t count	Sig
Konstanta	5,214	-	-
Food Security Variable (X1)	0,312	3,215	0,002
Food Access Variable (X2)	0,428	4,102	0,000

Source: Primary Data (processed by SPSS 21), 2026

Based on the regression equation above, it can be explained as follows:

1. Constant (5.214)
Indicates that if the food availability (X1) and food access (X2) variables are zero, then the food security value of poor households is 5.214.
2. Coefficient X1 (0.312)
Indicates that every 1-unit increase in food availability will increase the food security of poor households by 0.312, assuming other variables remain constant.
3. Coefficient X2 (0.428)
Indicates that every 1-unit increase in food access will increase the food security of poor households by 0.428, assuming other variables remain constant.

Based on the results of the multiple linear regression analysis, it is known that the variables food availability and food access have a positive influence on the food security of poor households in OKU Regency in 2026. This is indicated by the positive regression coefficient values for each variable. The food access variable has a larger coefficient value than food availability, indicating that food access has a more dominant influence on the food security of poor households. This indicates that a household's ability to obtain food, both in terms of economics and ease of access, is more important than simply food availability.

Thus, improving the food security of poor households depends not only on food availability but is also significantly influenced by access to that food.

5. Hypothesis testing

Hypothesis testing was conducted to determine whether the independent variables, namely food availability and food access, had an effect on the dependent variable, namely food security of poor households in OKU Regency in 2026. Hypothesis testing in this study was conducted using multiple linear regression analysis which included the t-test (partial), F-test (simultaneous), and coefficient of determination (R^2).

a. T-test (Parsial)

The t-test is used to determine the influence of each independent variable, namely food availability (X1) and food access (X2) partially on the dependent variable, namely food security of poor households (Y), which can be seen in Table 4.9 below:

Table 6. Results of the t-Test (Partial)

Variabel	t count	t table	Sig	Description
Food Security Variable (X1)	3,215	1,984	0,002	Significant impact
Food Access Variable (X2)	4,102	1,984	0,000	Significant impact

Source: Primary Data (processed by SPSS 21), 2026

Based on the results of the t-test, it is known that the food availability variable has a calculated t-value of 3.215 which is greater than the t-table of 1.984 with a significance value of 0.002 less than 0.05. This shows that food availability has a significant effect on the food security of poor households in OKU Regency in 2026. Furthermore, the food access variable has a calculated t-value of 4.102 which is greater than the t-table of 1.984 with a significance value of 0.000 less than 0.05. This shows that food access also has a significant effect on the food security of poor households. The following is the discussion:

1. The Influence of Food Availability (X1) on Food Security of Poor Households in Baturaja City, OKU Regency

Based on the t-test results, the food availability variable has a calculated t-value greater than the t-table value and a significance value less than 0.05. This indicates that food availability significantly influences the food security of poor households in Baturaja City, OKU Regency, in 2026. Therefore, the hypothesis that food availability influences the food security of poor households is accepted.

Food availability is a key factor in determining household food security. Households with sufficient food availability, both in the form of food stocks and easy access to food, tend to have better food security. Conversely, limited food availability will make it difficult for households to meet their daily consumption needs.

The results of this study align with research conducted by Sari et al. (2023), which states that food availability significantly influences household food security, where better food availability leads to higher levels of food security. Furthermore, research by Rahman et al. (2022) also shows that food availability plays a crucial role in

maintaining household consumption stability, particularly among low-income groups..

2. The Influence of Food Access (X2) on Food Security of Poor Households in Baturaja City, OKU Regency

Based on the t-test results, the food access variable has a calculated t-value greater than the table t-value and a significance value less than 0.05. This indicates that food access significantly influences the food security of poor households in Baturaja City, OKU Regency, in 2026. Therefore, the hypothesis that food access influences the food security of poor households is accepted.

Food access reflects a household's ability to obtain food, both economically and physically. Households with good food access, such as those with sufficient income and affordable food prices, will more easily meet their food needs optimally. Conversely, limited food access will make it difficult for households to obtain food, even if food availability is sufficient in the area.

The results of this study align with research conducted by Wulandari et al. (2024), which states that food access has a significant influence on household food security, especially among the poor. Furthermore, research by Putra and Lestari (2023) also shows that economic access is a key determinant in improving household food security, compared to other factors.

Thus, it can be concluded that partially the two independent variables, namely food availability and food access, have a significant influence on the food security of poor households.

a. F-Test (Simultaneous)

The F-test is used to determine the simultaneous effect of independent variables on the dependent variable, as shown in Table 4.10 below:

Table 7. F-Test Results (Simultaneous)

Model	F count	F table	Sig	Description
Regresi	28,456	3,09	0,000	Significant impact

Source: Primary Data (processed by SPSS 21), 2026

Based on the results of the F test, the calculated F value was 28.456 which was greater than the F table of 3.09 with a significance value of 0.000 which was less than 0.05. In accordance with the provisions, if the calculated $F > F$ table and the significance value < 0.05 , then the independent variables simultaneously have a significant effect on the dependent variable. Thus, it can be concluded that food availability and food access

together have a significant effect on the food security of poor households in Baturaja City, OKU Regency in 2026.

6. Coefficient of Determination (R^2)

The coefficient of determination is used to determine the extent to which the independent variable explains the dependent variable, as shown in Table 4.11 below:

Table 8. Results of the Coefficient of Determination (R^2)

Model	R Square (R^2)	Description
Regresi	0,612	61,3%

Source: Primary Data (processed by SPSS 21), 2026

Based on the analysis results, the coefficient of determination (R^2) was 0.613, or 61.3%. This indicates that the variables of food availability and food access can explain 61.2% of

the variation in food security in poor households, while the remaining 38.7% is influenced by other variables not examined in this study

CONCLUSION

Food availability and food access have a significant influence, both partially and simultaneously, on the food security of poor households in OKU Regency in 2026. Food access is the more dominant factor;

therefore, improving access to food is vital for enhancing the food security of poor households.

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