



Household Food Security Study Before The Pandemi, During The Pandemi and When New Normal in Gorontalo District

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Abstract

The purpose of this study is to analyze factors affecting household food security before the pandemic, during the pandemic, and the new normal in Gorontalo District. The method applied in this study is a qualitative descriptive method while the methods used in data collection are interviews, observation, documentation, and questionnaires. The results of the study show that the factors that affect household food security include the number of family members (X1), pre-pandemic income (X2), pandemic income (X3), new normal income (X4), and expenditure (X5), with t-test analysis can be seen that the variable number of family members (X1), Income during the Pandemi (X3) and Income during the New Normal (X4) has no significant effect on household food security (Y), while the variables Pre-Pandemic Income (X2) and Expenditures (X5) has a significant effect on household food security (Y). It can be seen that farmers can still exist during a pandemic, it is not too influential because farmers are still carrying out their activities, they can still eat garden produce, and their catch.

Keywords: Food Security, Households, Pandemi

1. Introduction

The COVID-19 pandemic that has hit Indonesia since March has disrupted many sectors that support people's lives, including the agricultural sector. The agricultural sector is in the spotlight because it is closely related to national food security. Of course, during a difficult pandemic like now, food security is something that must be strived to avoid the food crisis that seems to be haunting Indonesia.

The government is always trying to improve food security, especially those originating from increased domestic production. These considerations are becoming increasingly important for Indonesia because the population is getting bigger with wide population distribution and geographical coverage. To meet the food needs of its population, Indonesia requires the availability of sufficient and dispersed food, which meets adequate consumption and sufficient national stock according to the operational requirements of wide and dispersed logistics. Indonesia must maintain its food security.

Food independence is the ability of the state and nation to produce a wide variety of food from within the country that can guarantee the fulfillment of sufficient food needs down to the individual level by utilizing the potential of natural, human, social, economic, and local wisdom resources in a dignified manner. Food Safety is the condition and effort required to prevent Food



from possible biological, chemical, and other contaminants that can disturb, harm, and endanger human health and does not conflict with religion, belief, and community culture so that it is safe for consumption.

Our food security cannot be separated from the nature of food commodity production itself which is seasonal and fluctuates because it is very easily influenced by climate/weather. The production behavior which is strongly influenced by the climate greatly affects national food availability. If production behavior that is vulnerable to climate change is not accompanied by a tough food policy, it will be very detrimental, both for producers and consumers, especially small-production scale producers and low-income consumers. Characteristics of food commodities that are easily damaged, limited production land for farmers; Inadequate agricultural supporting facilities and infrastructure and weak harvest and post-harvest handling prompted the Government to intervene by implementing food security policies.

Another problem that arises is the distribution. Most of the available food stocks in production areas must be distributed between regions/between islands. However, it is not uncommon for distribution facilities and infrastructure to be limited and sometimes more expensive than distribution from abroad (in the case of sending cattle from Nusa Tenggara to Jakarta which is more expensive than from Australia to Jakarta; or the cost of sending rice from Surabaya to Medan which is more expensive than shipping from Vietnam to Jakarta).

From the point of view of the trading system, it is common knowledge that the length of the supply chain results in quite large price differences at the producer and consumer level with the domination of the food trade in certain groups (monopolies, cartels, and oligopolies). Meanwhile, from the consumption side, food is the largest expenditure for households (above 50% of total expenditure). What is unfortunate is the phenomenon of staple food substitution from local food to imported food.

Considering the food problems mentioned above, the national food policy must be able to accommodate and balance the aspects of supply/production and demand. The management of these two aspects must be able to realize national food security that is resilient in facing all shocks. Management must be carried out optimally considering that the two aspects may not be in line or contradictory.

Even though according to data reported by the Central Bureau of Statistics of the Ministry of Agriculture, national food stocks are predicted to experience a surplus until June 2020, this does not mean that Indonesia is automatically free from the threat of a food crisis that could occur in the future. In addition, the COVID-19 pandemic, which is not certain when it will end, will have a very pronounced impact on agriculture.

During this pandemic, the government has implemented PSBB (Large-Scale Social Restrictions) policies in several areas, people have also been asked to reduce physical contact



and do work from home. This can affect the production, distribution, and consumption of food. The means for distributing food are limited resulting in a lack of food productivity. In addition, with the changing lifestyle of the people, automatically the demands of the people as food consumers also change. This can result in changes in the prices of food products. One clear example that can be seen is when most restaurants and cafes were closed, the demand for food decreased so that food that had already been produced in large quantities experienced a decrease in selling value.

Availability of food at the household level is a vital need to support the immune system during the Covid-19 pandemic. However, public spending on food consumption has actually decreased along with decreased income.

Gorontalo Regency is one of the Regencies in Gorontalo Province which has the largest population after Gorontalo City. The population of Gorontalo Regency according to statistical data for 2021 is 393,107 people with 19 sub-districts.

Based on the above background related to food security during the Covid-19 pandemic, the researchers are interested in conducting research entitled "Study of Household Food Security Before the Pandemic, During the Pandemic, and the New Normal in Gorontalo Regency".

2. Research Method

The type of research used in this research is qualitative research. According to Mukhtar (2013) qualitative descriptive research method is a method used by researchers to find knowledge or theory of research at a certain time. The method applied in this research is a qualitative descriptive method. According to Sugiyono (2015) a qualitative approach is research that is based on the philosophy of postpositivism, used in natural object conditions, and the researcher is a key instrument, sampling data sources is carried out in a purposive sample, namely sampling by giving special characteristics that are suitable for the purpose study. The data collection technique is by triangulation and data analysis is inductive/qualitative and the results of qualitative research emphasize meaning rather than generalization.

Answer the research objectives, namely to analyze the factors that affected household food security before the pandemic, during the pandemic, and the new normal using multiple linear regression analysis. This analysis is used to determine the magnitude of the independent variable on the dependent variable, assuming the other variables are constant. Multiple linear regression analysis is the development of a simple linear regression analysis where there is more than one independent variable X . This analysis is used to look at some independent variables X_1, X_2, \dots, X_k to the dependent variable Y based on the value of the independent variables X_1, X_2, \dots, X_k . This research was conducted for identifying the factors that affected household food security before the pandemic, during the pandemic, and the new normal consists of 5 variables,



namely 4 variables X and 1 variable Y with information on Number of Family Members (X1), Income Before the Pandemic (X2), Income during the Pandemic (X3) Income during the New Normal (X4), and Expenditure (X5) for the Resistance Study Food (Y) in Gorontalo District. The equation resulting from the relationship between these variables is as follows:

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + \varepsilon$$

Information:

Y = Food Safety Study

x1 = Number of Family Members

x2 = Pre-Pandemic Income

x3 = Income During a Pandemic

x4 = Income at New Normal

x5 = Production

a = Regression Constant

b1, b2, b3, b4, b5 = Regression coefficients

ε = error

This study uses an analysis of two different test averages. Testing in this way uses the event study methodology. To test the hypothesis in this study using an analysis of two different test averages (t-test). Before testing the hypothesis, the normality of the data was first tested to know whether the sample used in this study was normally distributed or not.

Detecting the normality of the data can be done by testing the Kolmogorov-Smirnov test method. Data is normally distributed if the probability value is > 0.05 otherwise if the probability value is ≤ 0.05 then the data is not normally distributed.

Then after that testing will be carried out with the Different test. A different test is carried out to prove whether the pandemic has a significant influence on food security before and after the pandemic with the following analytical techniques:

- (1) One Sample t-Test. If the data is normally distributed, the test uses the One-Sample t Test
- (2) Wilcoxon Signed Ranks Test. If the data is not normally distributed, the test is carried out using a non-parametric test, namely the Wilcoxon signed ranks test.



3. Results and Discussions

This research was conducted in Gorontalo Regency, Gorontalo Province, the object of this research was people who worked as farmers, namely know the factors that affected household food security before the pandemic, during the pandemic and the new normal in Gorontalo Regency.

Characteristics of Respondents Age

The ages of the people in Gorontalo Regency who were the respondents in this study ranged from 23-90 years with a total of 100 respondents. Following the age grouping of the respondents can be seen in Table 1.

Table 1 Grouping of research respondents by age

No	Age	Respondent	Percentage
1	22-31	10	10%
2	32-40	23	23%
3	41-49	29	29%
4	50-58	17	17%
5	59-67	11	11%
6	68-76	7	7%
7	77-85	2	2%
8	86-94	1	1%
Amount		100	100%

Based on Table 1 above, it can be seen that the number of research respondents according to the age range of 22-31 years amounted to 10 people, 23 people aged 32-40 years, 29 people aged 41-49 years, 17 people aged 50-58 years, 59 years old -67 years totaling 11 people, aged 68-76 years totaling 7 people, aged 77-85 years totaling 2 people and 86-94 years old totaling 1 person.

Gender

Respondents for this research in Gorontalo Regency consisted of men and women with a total of 100 people. The grouping of respondents based on gender can be seen in Table 2.

Table 2. Grouping of research respondents by gender

No.	Age	Respondent	Percentage
1	Man	71	71%
2	Woman	29	29%
Amount		100	100%



Based on Table 2 above, it can be seen that the respondents in this study in Gorontalo Regency were dominated by male sex with 71 respondents while 29 female respondents.

Level Of Education

The education level of the people in the Gorontalo district who were the respondents in this study consisted of graduates from elementary, junior high, high school, and university. The following is the grouping of respondents based on their level of education, which can be seen in Table 3.

Table 3. Grouping of respondents according to education level

No	Level of education	Respondent	Percentage
1	Elementary School	36	36%
2	Junior High School	40	40%
3	Senior High School	16	16%
4	College	8	8%
Amount		100	100%

Based on Table 3 above, it can be seen that according to education, 36 respondents graduated from elementary school, 40 people who graduated from junior high school, 16 people who graduated from high school, and 8 people who graduated from higher education.

Test Analysis

Kolmogorov Smirnov test to detect data normality. Data is normally distributed if the probability value is > 0.05 otherwise if the probability value is ≤ 0.05 then the data is not normally distributed. The following are the calculation results of the Kolmogorov Smirnov test with the SPSS 20 tool, which can be seen in Table 4.

Table 4. Results of the one-sample kolmogorov smirnov test

		Unstandardized Residual
N		100
Normal Parameters ^{a,b}	Mean	OE-7
	Std. Deviation	1.54174983
Most Extreme Differences	Absolute	.110
	Psotive	.072
	Negative	-.110
Kolmogorov-Smirnov Z		1.101
Asymp. Sig. (2-tailed)		.177
a. Test distribution is Normal		
b. Calculated form data		



Based on Table 4 above, the results of the Kolmogorov Smirnov test produced a probability value of 0.177. The probability value indicates that the data is normally distributed, according to the testing criteria, if the probability value is > 0.05 , the data is normally distributed and vice versa, < 0.05 the data is not normally distributed, the probability value is $0.177 > 0.05$, so it can be concluded that the test data is normally distributed.

Multiple linear regression analysis to determine the effect of the variables number of family members (X1), income before the pandemic (X2), income during the pandemic (X3), income during the new normal (X4) and expenditure (X5) on food security (Y) in the district Gorontalo with the SPSS 20 tool, the results of data analysis can be seen in Table 5 below.

Table 5. Multiple regression analysis test results

Model	Unstandardized	Standardized	Standardized	T	Sig.
	Coefficients	Coefficients	Coefficients		
	B	Std. Error	Beta		
(Constant)	7.013	.509		13.765	.000
A. family (X1)	.165	.142	.117	1.161	.249
P.before.pandemic (X2)	-.449	.160	-.332	-2.816	.006
P. pandemic (X3)	.731	.432	.822	1.693	.094
P. normal (X4)	-.699	.426	-.789	-1.640	.104
Spending (X5)	-.485	.186	-.315	-2.603	.011

a. Dependent Variable: Food (Y)

Based on the data above, it can be seen that the equation of the multiple linear regression model is as follows:

$$Y = 7,013 + 0,165(X1) - 0,449(X2) + 0,731(X3) - 0,699(X4) - 0,485(X5)$$

a = Constant of 7.013 states that if the value of the independent variable consisting of the number of family members (X1), income during the pandemic (X3), income during the new normal (X4) and expenditure (X5) has the same value as zero, then the income of the farmer's family of 7.013.

b1 = Coefficient of number of family members (X1) of 0.165 states if the variable changes or increases by 1 unit then food security will increase by 0.165

b2 = The Coefficient of Income before the X2 pandemic was -0.449 stating that if the variable changes or increases by 1 unit, food security will fluctuate by 0.499.

b3 = Income Coefficient during the X3 pandemic of 0.731 states that if the variable changes or increases by 1 unit, food security will increase by 0.731.

b4 = The Income Coefficient when the new normal X4 is -0.699 states that if the variable changes or increases by 1 unit, food security will decrease by 0.699.

b5 = X5 Expenditure Coefficient of -0.485 states if the variable changes or increases by 1 unit, food security will decrease by 0.485.



Knowing how far the influence of one variable with explanatory (*independent*) individually in explaining the variation of the independent variable (*dependent*). The t table value is obtained by the formula $df = n - k$, namely $df = 100 - 2 = 98$, from the df value it can be seen that the t table value is 1.661. According to Suliyanto (2011), does this variable have a significant influence on the dependent variable or not, the t count > t table and sig < 0.05 means that there is an influence between the independent variables and the dependent variables.

1. The number of family members (X1) with a t table value of 1.161 > 1.661 with sig 0.245 > 0.05, it can be concluded that variable X1 has no significant effect on food security (Y).
2. Income before the pandemic (X2) with a t-table value of -2.816 < 1.661 with sig 0.006 < 0.05, it can be concluded that variable X2 has a significant negative effect on food security (Y).
3. Income during a pandemic (X3) with a t-table value of 1.693 > 1.661 with sig 0.094 > 0.05, it can be concluded that variable X3 has no significant effect on food security (Y).
4. Income at new normal (X4) with a t table value of 1.640 > 1.661 with sig 0.101 > 0.05, it can be concluded that variable X4 has no significant effect on food security (Y).
5. Expenditure (X5) with the results of the t table value -2.603 > 1.661 with sig 0.01 < 0.05, it can be concluded that variable X5 has a negative and significant effect on food security (Y).

4. Conclusions

Based on the results of research entitled Study of Household Food Security Before the Pandemic, During the Pandemic and During the New Normal in Gorontalo Regency, it can be concluded that the factors that affect household food security with variables include, Number of family members (X1), Income before the pandemic (X2), Income during a pandemic (X3), income during the new normal (X4) and expenditure (X5), with the t-test analysis it can be seen that the variables X1, X3 and X4 have no significant effect on household food security (Y), while the variables X2 and X5 significant effect on household food security (Y).

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