



## Household Food Responsibility During the Covid-19 Pandemic

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**Abstract:** *This study aims to examine the effect of access the food and the nutritional knowledge on food responsiveness with food quality as a mediator. Respondents in this study amounted to 135 respondent and were collected using simple random sampling technique. The data processing was carried out using SMART PLS 3.0. Based on the results of data processing, all hypotheses in the study are supported. This research provides theoretical and practical contributions which will also be discussed further in this paper.*

**Keywords:** *Food security, covid-19, access, income, food quality*

### INTRODUCTION

In early 2020, the world was shocked by the outbreak of a new pneumonia that started in Wuhan, Hubei Province which then spread rapidly to more than 190 countries and territories. This outbreak is named *coronavirus disease 2019 (COVID-19)* which is caused by *Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2)*. The spread of this disease has had broad social and economic impacts (Susilo et al., 2020). In addition, *the covid-19 virus* also has an impact on people's food security due to regulations to restrict community activities such as work, study, shopping, and others. As a result, community food security when the issue of limiting community activities becomes important.

The definition of food security varies widely, but generally refers to the definition of the World Bank (1986) and Maxwell and Frankenberger (1992), which is “*secure access at all times to sufficient food for a healthy life.*” (Suharyanto, 2011). Meanwhile, according to UU No. 18/2012 on Food, food security is a condition for the fulfillment of food for the state to individuals, which is reflected in the availability of sufficient food, both quantity and quality, safe, diverse, nutritious, equitable, and affordable and does not conflict. with the religion, belief and



culture of the community, to be able to live a healthy, active and productive life in a sustainable manner.

The determinant of food security is sufficient purchasing power or income to meet the cost of living. Raharja and Manurung (2008) stated that income is the total income in the form of money or non-money by a person or household during a certain period. However, another study put forward by Saliem et al. (2005) shows that there are facts which state that food security is not fulfilled at the household level not due to unavailability of food but rather due to aspects of distribution and purchasing power. Food distribution is part of the food security system which has an important function to support affordability to food, because it is a chain link between producers and food consumers, and between food production centers and consumer areas.

The condition of the COVID-19 pandemic has resulted in access to food being exacerbated by the worsening of the pandemic itself and the restrictions on population movement that follows. This is also in accordance with (Burgui-Burgui & Chuvieco, 2020), which states that an epidemic of a disease that occurs in the world will increase the number of people experiencing hunger and malnutrition. This condition is caused by inadequate nutritional quality, given the limited amount of food supply. In addition, during the Covid-19 period, households would respond differently. This response is very important and determines how a household meets its daily food needs. Based on these conditions, this study is intended to examine the effect of access to food and nutritional knowledge on public food responsiveness by using food quality as an intervention.

## **HYPOTHESIS**

### **1. Effect of Food Access on Food Response**

Access to food is related to the ability of the household to obtain enough food, a condition in which individuals cannot buy or obtain food is called a condition of purchasing power vulnerability, while the use of food is related to the use of food by households and the ability of individuals to absorb and metabolize nutrients. a condition in which the nutrition from the food is not fulfilled is a nutrient-prone condition (Fauzi et al., 2019).

#### **Hypothesis 1: Food Access affects Food Response**

### **2. Effect of Food Access on Food Quality**

The study of Saliem et al (2005) shows that problems in consumption include low access to food for the community. Guess it with a consumption problem, the magnitude of the number of poor and unemployment is causing the low access to food is one very complex solution requiring coordination and synergy among various parties, both governments, businesses and society at large. Based on these conditions, differences in food access will have an impact on differences in the quality of food received to meet the needs of the community.

#### **Hypothesis 2: Food Access affects Food Quality**

### **3. Effect of Nutritional Knowledge on Food Response**

Knowledge of nutrition someone will affect the nutritional quality in the food supply in the family (Nur Intania Sofianita<sup>1\*</sup>, Firlia Ayu Arini<sup>1</sup>, 2015). According to (Sartika, 2012), the



problem that often arises in providing food is low knowledge and one's attitude in designing food menus so that children don't feel bored. A person must have the skills to provide food, cook a variety of foods, and be able to collect a variety of breakfast menus from books, the internet and magazines, so that families, especially children who tend to choose food enthusiastically and want to consume food every day.

### **Hypothesis3: Nutritional Knowledge affects Food Response**

#### 4. Effect of Nutritional Knowledge on Food Quality

Nutritional knowledge is a person's understanding of nutrition, nutrition, and the interaction between nutrients and health. If someone's knowledge is lacking about nutrition, the food response that is taken to maintain the balance of the food consumed and what is needed will decrease and cause malnutrition or overnutrition problems. However, if someone has good knowledge of nutrition, the food response given to meet their nutritional needs will also be gorgeous (Maria Goreti Pantaleon, 2019).

### **Hypothesis4: Nutritional Knowledge has an effect on Food Quality**

#### 5. Effect of Food Quality on Food Response

The evaluation of food consumption patterns can be viewed from the aspect of food quality, in this case it can include physical aspects of food, chemical aspects, and microbiological aspects / aspects of food safety, aspects of organoleptics, and aspects of nutrition. Food from this point of view is more focused on the nutritional aspect which is based on food diversity, not only staple food, but also other foodstuffs. If the quality of the food is good with a variety of types, it will increase the food response of the community in consuming a food (Mulyo et al., 2015).

### **Hypothesis 5: Food Quality affects Food Response**

## **METHOD**

This research will be conducted using quantitative research methods. Quantitative research is research based on the philosophy of positivism, and is used to research on a particular population or sample (Neuman, 2016). The sampling technique was carried out randomly. Collecting data using a survey research instrument, in the form of a questionnaire. The data analysis is descriptive quantitative. This study uses a stratified sampling method.

The analytical method used in this research is the path analysis test. Path analysis is an extension of multiple linear regression, and which allows analysis of more complex models (Streiner, 2005). Retherford (1993) states that path analysis is a technique for analyzing the causal relationship that occurs in multiple regression if the independent variable affects the dependent variable not only directly but also indirectly. The testing process uses SmartPLS 3.0 software.

Multiple linear regression analysis is used to predict, predict or predict the relationship of one or more independent variables to the dependent variable. In this study, apart from the dependent and independent variables, there is one (1) intervening variable (mediation). The pattern of relationship between variables through the mediating variable can be seen in Figure 1.

To test, the analysis of the mediating variables was carried out using the causal *step* method developed by *Baron* and *Kenny* (1986) at (Pardo & Román, 2013). and the *Product of Coefficient* method developed by Sobel (Suliyanto, 2011). As for the steps in using the Causal *Step* Method :



- a. Creating a regression equation for the independent variable (  $X$  ) on the dependent variable (  $Y$  )
- b. Creating a regression equation for the independent variable (  $X$  ) on the mediating variable (  $M$  )
- c. Creating a regression equation for the independent variable (  $X$  ) on the dependent variable (  $Y$  ) by including the mediating variable (  $M$  )
- d. Draw conclusions whether the mediating variable mediates perfectly ( *perfect mediation* ) or mediates partially ( *partial mediation* )

The equation model used in this study consists of three equations , namely:

$$Y = a + bX_1 + cX_2$$

$$M = a + bX_1 + cX_2$$

$$Y = a + bX_1 + cX_2 + dM$$

Information

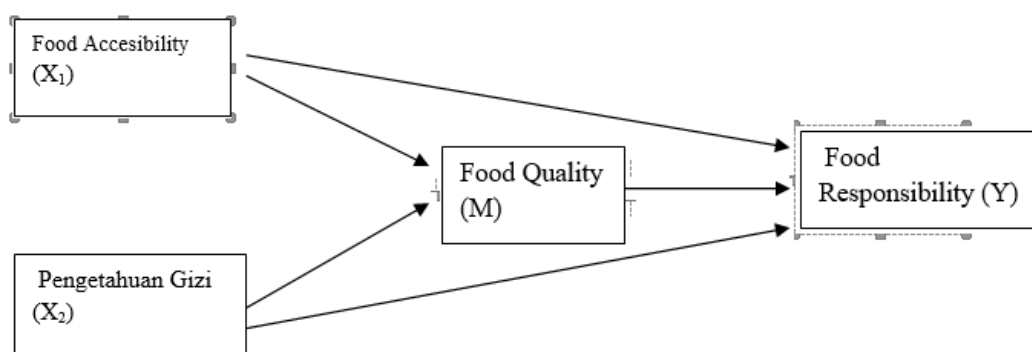
$Y$  = Food response

$M$  = Mediation variable (food quality)

$X_1$  = Access to food

$X_2$  = Nutritional Knowledge

a, b, c, d = coefficient



### 1. Respondent Demographics

The research data collection was carried out using a questionnaire. The demographics of respondents in this study are as follows:

**Table 1**  
**Respondent Characteristic**

Respondent Description	Frequency	Percentage(%)
<b>Type of Work</b>		
ASN	20	14.8 %
Non ASN	115	85.2 %
Total	135	100%
<b>Age Category</b>		
<25 years	29	21.5 %
26 -30tahun	17	12.6 %



31-35 years	11	8.1 %
36-40 years	15	11.1 %
> 41 years	63	46.7 %
Total	135	100%
<b>Marital status</b>		
Married	95	70.4 %
Single	36	26.7 %
Widow/widower	4	3%
Total	135	100%
<b>Level of education</b>		
SMA / SMK	28	20.7 %
Diploma	6	4.4 %
S-1	46	34.1 %
S-2	50	37 %
S-3	5	3.7 %
Total	135	100%

Source: Appendix 1

## 2. Household Income

Household income is obtained through work activities carried out by individuals in the household. Income is used to be able to meet basic needs and other needs in the household. The proportion of household income is as follows:

**Table 2. Household Income**

Description	Frequency	Percentage
<IDR 2,000,000	22	16.3%
IDR 2,000,000- IDR 3,000,000	29	21.5%
IDR 3,000,000-IDR 4,000,000	17	12.6%
IDR 4,000,000-IDR 5,000,000	15	11.1%
> IDR 5,000,000	52	38.5%

## 3. Household Expenses

Household expenses are expenditure items that are allocated to meet the needs of all individuals in the household. The proportion of household expenses is as follows:

### a. Food needs

Description	Frequency	Percentage
<Rp. 1,000,000	14	10.4%
IDR 1,000,000-IDR 2,000,000	54	40%
> IDR 2,000,000	67	49.6%

Expenditures for food needs are the largest expenditures made by the community. The largest amount of expenditure to meet food needs is above Rp. 2,000,000, while the second largest



amount of expenditure is Rp. 1,000,000-Rp. 2,000,000. Meanwhile, the smallest amount of expenditure for food needs is less than IDR 1,000,000.

b. **Utility Needs**

Description	Frequency	Percentage
<IDR 500,000	47	34.8%
<b>IDR 500,000-IDR 1,000,000</b>	54	41.5%
> IDR 1,000,000	32	23.7%

Expenditures for utilities are expenses for water, electricity, internet and telephone. The community apparently budgeted the largest utility costs between Rp. 500,000-Rp. 1,000,000 (41.5%). Meanwhile, the second largest total expenditure is under Rp. 500,000, and the smallest amount of utility expenditure is less than Rp. 1,000,000.

c. **Transportation needs**

Description	Frequency	Percentage
<IDR 500,000	47	34.8%
<b>IDR 500,000-IDR 1,000,000</b>	54	41.5%
> IDR 1,000,000	32	23.7%

Expenditures for transportation needs are expenses for buying fuel for cars / motorbikes. The community apparently budgeted the largest transportation costs between Rp. 500,000 - Rp. 1,000,000 (41.5%). Meanwhile, the second largest amount of expenditure is under Rp. 500,000, and the smallest amount of transportation expenditure is less than Rp. 1,000,000.

d. **Entertainment**

Description	Frequency	Percentage
<IDR 500,000	96	71.1%
<b>IDR 500,000-IDR 1,000,000</b>	27	20%
> IDR 1,000,000	12	8.9%

Spending needs of entertainment is spending most small were made public. The amount of expenditure to meet the greatest entertainment needs is less than IDR 500,000. This is based on the conditions of the Covid-19 pandemic so that people make savings due to bad economic conditions. Meanwhile, the second largest amount of entertainment expenditure is IDR 500,000-IDR 1,000,000, while the third largest total expenditure is over IDR 1,000,000.

e. **Savings and investment**

Description	Frequency	Percentage
<IDR 500,000	69	51.1%
<b>IDR 500,000-IDR 1,000,000</b>	36	26.7%
> IDR 1,000,000	30	22.2%



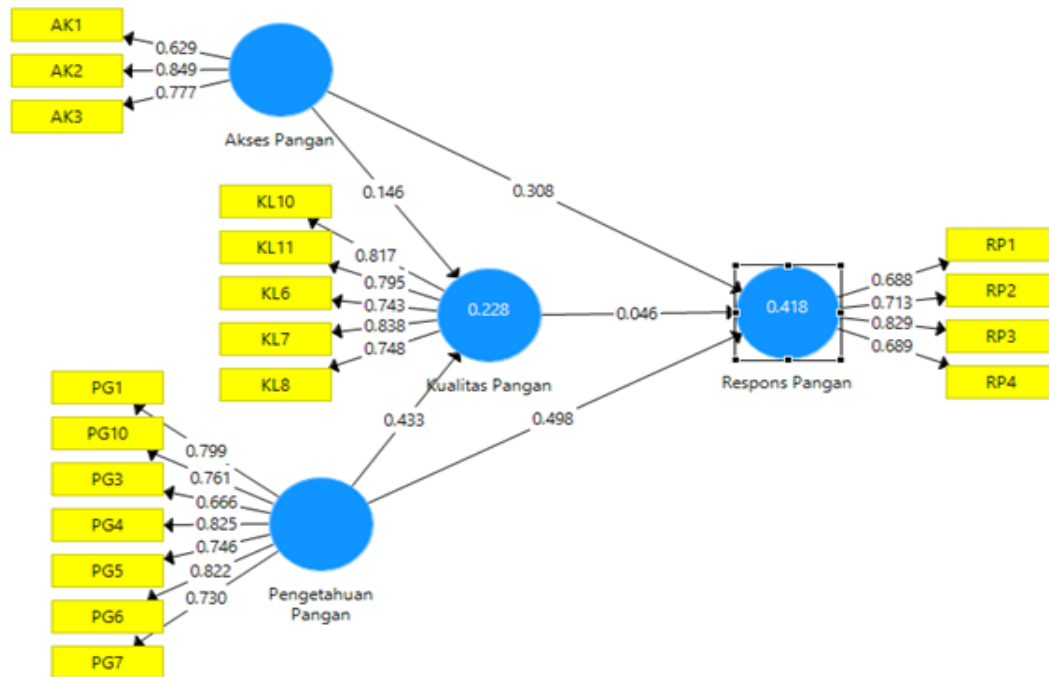
Savings and investments are important to anticipate unexpected needs. Based on public expenditure for saving and investing, it can be seen that in a pandemic, the amount of savings and investment that people can set aside is less than IDR 500,000. Meanwhile, the amount of savings and investment expenditures for the second is between Rp. 500,000 - Rp. 1,000,000, while the amount for the third savings and investment expenditure is more than Rp. 1,000,000.

**Data Analysis**

The process of testing the hypothesis is carried out after going through the instrument testing stage. Instrument testing is intended to ensure that the data used is valid and reliable data so that hypothesis testing can be carried out with precision. Meanwhile, from 135 respondents' data, the total number that can be processed is 100 data. The instrument testing used is the construct validity test by reviewing the AVE value and outer loading, while the reliability testing looks at the Cronbach alpha value and composite reliability. Based on the results of testing the following instruments are the results of data processing:

Based on the table above, it can be concluded that the validity test is acceptable. This is because according to Hair et al (2011) the value of outer loading is > 0.6 so that the indicators in the study are valid. Meanwhile, if outer loading < 0.6, the indicator must be dropped. Meanwhile, when viewed from the magnitude of the AVE value, it can be explained that all AVE values in the variable are > 0.5 so that they meet the requirements of the validity test. After the validity test is carried out, the next step is testing the reliability of the data. The reliability test uses the Cronbach Alpha (CA) parameter and composite reliability (CR). Based on Ghozali (2015) the value of composite reliability must be > 0.7, when viewed based on data above the CR value in the research variable is above 0.7, while the Cronbach alpha (CA) value according to Nunnally (1994) is the value of CA > 0.6, when viewed in this study, all CA values above 0.6. So based on the CA and CR values it is stated that all variables are reliable .

Variable	Indicator	Outer Loading	AVE Value	Conclusion	CR	CA	Conclusion
<b>Nutritional Knowledge</b>	PG1	.799	.587	Valid	.908	.882	Reliable
	PG3	.666					
	PG4	.825					
	PG5	.746					
	PG6	.822					
	PG7	.730					
	PG10	.761					
<b>Access to Food</b>	AK 1	.629	.573	Valid	.799	.665	Reliable
	AK2	.849					
	AK3	.777					
<b>Food Quality</b>	KL6	.743	.623	Valid	.892	.849	Reliable
	KL7	.838					
	KL8	.748					
	KL10	.817					
	KL11	.795					
<b>Food Responsibility</b>	RP 1	.688	.535	Valid	.821	.714	Reliable
	RP2	.713					
	RP3	.829					
	RP4	.689					



Based on the results of hypothesis testing, it can be seen that hypothesis 1, namely access to food, has a positive and significant effect on food responsiveness with a path coefficient value of 0.308 with a t value of  $2.730 > 1.96$ . This means that with easy access to food it shows that the government's responsibility in providing food to the community during the pandemic has been good even though the government has implemented a lockdown system. Hypothesis 2, namely nutritional knowledge on food responsibility is positive and significant with a path coefficient value of 0.498 with a t value of  $2.746 > 1.96$ . This hypothesis shows that nutritional knowledge of nutrition which is important for the community to survive a pandemic results in good responsibility to maintain the fulfillment of people's food needs. Hypothesis 3 states that access to food has a positive and significant effect on food quality with a path coefficient value of 0.146 with a t value of  $1.984 > 1.96$ . This explains that the ease with which people can access food means that it makes it easier for people to get good quality food that is suitable to meet the nutritional needs of the community during a pandemic. Hypothesis 4 states that nutritional knowledge has a positive and significant effect on food quality with a path coefficient value of





0.433 with a t value of  $3.271 > 1.96$ . Based on the results of these tests, a good knowledge of the nutritional needs of individuals in society is very important to be able to influence the selection of quality food. The higher the knowledge on the importance of nutrition and good food, the more likely it will affect a person's ability to choose quality food. Hypothesis 5 states that food quality has a positive and significant effect on food responsibility with a path coefficient value of 0.046 with t value  $1.968 > 1.96$ . This means that good food quality that is needed by the community will further increase the responsibility for providing good food.

## CONCLUSION

This study examines the effect of food access and nutritional knowledge on public food responsiveness by using food quality as an intervening. Based on the test results, it is known that all hypotheses are accepted. Based on this research, food responsibility is very important to be able to increase community food security. What the government needs to do is provide easy access to food even though during the Covid-19 pandemic the government imposed restrictions on community activities. In addition, the government also needs to understand that now the community has understood the importance of nutritional knowledge to maintain health during a pandemic, so it is necessary to pay attention to food quality. The suggestion for future research is that research should also review from the government's point of view in an effort to increase the responsiveness of food to society so that it will be able to explain the process of food security from both types of viewpoints.

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