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# Determinants of Household Food Security in Eastern Indonesia 2016-2023

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***ABSTRACT***

*The purpose of this study is to determine the effect of education level, GRDP per capita, and the COVID-19 pandemic on household food security in Eastern Indonesia for the period 2016-2023, both partially and simultaneously. Food security is important because it not only concerns people's welfare but also influences a country's economy. The research method used in this study is a quantitative approach with the Ordinary Least Squares (OLS) method and annual time series data from 2016-2023. This study uses household food security as the dependent variable, education level and GRDP per capita as independent variables, and the COVID-19 pandemic as a dummy variable. The analytical technique used in this study is panel data regression analysis. The research findings illustrate that education level (X1) has a positive effect on household food security (Y). This means that the higher a person's education level, the higher their household food security will be. Vice versa. GRDP per capita (X2) has no effect on household food security (Y). This means that fluctuations in GRDP per capita in a region will not impact household food security (Y). The COVID-19 pandemic (X3) has a positive effect on household food security (Y). This means that if the COVID-19 pandemic occurs, household food security will increase. Vice versa. Education level, GRDP per capita, and the COVID-19 pandemic simultaneously influence household food security (Y).*

***Keywords:*** *Food Security; Covid-19 Pandemic; Per Capita GRDP; Education Level.*

**ABSTRAK**

Tujuan dari penelitian ini adalah untuk mengetahui pengaruh tingkat pendidikan, PDRB per kapita, dan pandemi COVID-19 terhadap ketahanan pangan rumah tangga di Indonesia Timur untuk periode 2016-2023, baik sebagian maupun serentak. Ketahanan pangan penting karena tidak hanya menyangkut kesejahteraan masyarakat tetapi juga mempengaruhi perekonomian suatu negara. Metode penelitian yang digunakan dalam penelitian ini adalah pendekatan kuantitatif dengan metode Ordinary Least Squares (OLS) dan data deret waktu tahunan dari tahun 2016-2023. Penelitian ini menggunakan ketahanan pangan rumah tangga sebagai variabel dependen, tingkat pendidikan dan PDRB per kapita sebagai variabel independen, dan pandemi COVID-19 sebagai variabel dummy. Teknik analisis yang digunakan dalam penelitian ini adalah analisis regresi data panel. Temuan penelitian menggambarkan bahwa tingkat pendidikan (X1) memiliki efek positif terhadap ketahanan pangan rumah tangga (Y). Ini berarti bahwa semakin tinggi tingkat pendidikan seseorang, semakin tinggi ketahanan pangan rumah tangga mereka. Sebaliknya. PDRB per kapita (X2) tidak berpengaruh pada ketahanan pangan rumah tangga (Y). Artinya, fluktuasi PDRB per kapita di suatu wilayah tidak akan berdampak pada ketahanan pangan rumah tangga (Y). Pandemi COVID-19 (X3) berpengaruh positif terhadap ketahanan pangan rumah tangga (Y). Artinya, jika pandemi COVID-19 terjadi, ketahanan pangan rumah tangga akan meningkat. Sebaliknya. Tingkat pendidikan, PDRB per kapita, dan pandemi COVID-19 secara bersamaan mempengaruhi ketahanan pangan rumah tangga (Y).

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**Kata kunci:** Ketahanan Pangan; Pandemi COVID-19; PDRB per kapita; Tingkat Pendidikan.

## INTRODUCTION

Food security is the condition of ensuring that everyone has sufficient food, both in quantity and quality, that is safe and nutritious, for a healthy, active, and productive life in a sustainable manner (Food and Agriculture Organization of the United Nations, 2003). The importance of food security extends beyond the well-being of the population to a country's economy. With food, people can live healthily and engage in daily activities. Given the importance of food security, every country prioritizes developing its food security as a foundation for the development of other sectors (Ministry of Agriculture, 2010).

In Indonesia, food needs are synonymous with meeting the needs of rice, the staple food. Rice is a widely cultivated agricultural commodity, and its availability significantly impacts food security. Meeting food consumption, especially rice, as a staple food and a vital source of nutrition in the food structure, through the provision aspect is crucial, given the increasing population each year. Rice is cultivated in almost all provinces in Indonesia year-round, regardless of the season, particularly in rice fields with good irrigation. This is demonstrated by the monthly rice harvest pattern in Indonesia, which occurs throughout the year.

Data on rice paddy area in Indonesia from 2018 to 2023 shows a significant downward trend. In 2018, the recorded rice paddy area was 11,377,934.44 hectares. However, in 2019, the area decreased to 10,677,887.15 hectares, and this decline continued in 2020, with the area reaching 10,657,274.96 hectares. In 2021, the rice paddy area decreased again to 10,411,801.22 hectares, and despite a slight increase in 2022 to 10,452,672 hectares, in 2023 the rice paddy area fell again to 10,213,705.17 hectares. Overall, this data reflects a sustained decline in rice paddy area over the period, which may be influenced by various factors such as land conversion for non-agricultural purposes, climate change, and economic and social factors affecting the agricultural sector. This decline has the potential to impact food security, particularly in maintaining the availability of rice, Indonesia's primary food commodity.

Data on Indonesia's rice production centers from 2018 to 2023 shows that three provinces on the island of Java dominate national rice production. East Java is the province with the largest contribution, at 17.8%, followed by Central Java with 17.5%, and West Java with 16.8%. These three provinces together account for more than half of Indonesia's total rice production, reflecting Java's crucial role in meeting national food needs, particularly for rice. This regional dominance is due to its favorable geographic conditions and more developed agricultural infrastructure compared to other regions.

In general, western Indonesia has a better food security index (IKP) score than eastern Indonesia. The ten provinces with the best scores in 2022 were Bali (85.19), Central Java (82.95), South Sulawesi (81.38), South Kalimantan (81.05), DI Yogyakarta (80.88), Gorontalo (80.35), East Java (79.85), West Sumatra (79.45), Lampung (78.61), and DKI Jakarta (78.25). Of these 10 provinces, Lampung's IKP showed an

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increase over the past three years. In 2020 and 2021, Lampung was not among the 10 provinces with the highest IKP scores. However, in 2022, it ranked 9th. Meanwhile, the two provinces with the lowest scores were West Papua (45.92) and Papua (37.80). The complete scores and rankings and provincial IKP are shown in Table 1:

**Table 1. Provincial Food Security Index Rankings and Scores 2020-2022**

| Peringkat | 2020 | | 2021 | | 2022 | |
|---|---|---|---|---|---|---|
| | Provinsi | Skor | Provinsi | Skor | Provinsi | Skor |
| 1 | Bali | 84.54 | Bali | 83.82 | Bali | 85.19 |
| 2 | Jawa Tengah | 82.31 | Jawa Tengah | 82.73 | Jawa Tengah | 82.95 |
| 3 | Sulawesi Selatan | 81.81 | DI Yogyakarta | 81.43 | Sulawesi Selatan | 81.38 |
| 4 | DI Yogyakarta | 80.67 | Sulawesi Selatan | 80.82 | Kalimantan Selatan | 81.05 |
| 5 | Gorontalo | 80.40 | Gorontalo | 80.52 | DI Yogyakarta | 80.88 |
| 6 | Kalimantan Selatan | 80.04 | Kalimantan Selatan | 80.29 | Gorontalo | 80.35 |
| 7 | Jawa Timur | 79.90 | Jawa Timur | 79.70 | Jawa Timur | 79.85 |
| 8 | Sumatera Barat | 78.64 | Sumatera Barat | 79.55 | Sumatera Barat | 79.45 |
| 9 | Kalimantan Timur | 78.24 | Sulawesi Utara | 78.30 | Lampung | 78.61 |
| 10 | DKI Jakarta | 77.97 | DKI Jakarta | 78.01 | DKI Jakarta | 78.25 |
| ⋮ | | | | | | |
| 33 | Papua Barat | 49.40 | Papua Barat | 46.05 | Papua Barat | 45.92 |
| 34 | Papua | 34.79 | Papua | 35.48 | Papua | 37.80 |

Sources: Bapanas (2022).

A closer look at the provincial IKP scores from 2020 to 2022 shows that West Papua and Papua have consistently been considered outliers due to their relatively low IKP scores compared to other provinces. Despite being an outlier, Papua's IKP score has shown progress, marked by an increase over the past three years. However, West Papua actually experienced a decline from 2020 to 2022. This narrows the gap between the two provinces. Eastern Indonesia generally has a lower IKP score than western Indonesia, necessitating a comprehensive food vulnerability management priority.

The purpose of this study was to determine the simultaneous influence of education level, per capita GRDP, and the COVID-19 pandemic on household food security in Eastern Indonesia from 2016 to 2023, both partially and simultaneously.

## LITERATURE REVIEW

### Human Capital Theory

Human capital theory is a theory that considers humans as a form of capital or capital goods, like other capital goods. According to Todaro (2015), the concept of human capital can be seen through someone making investments with the aim of achieving a higher level of consumption in the future. Investments in human capital take the form of investments in education and health. This can be explained by the fact that the higher a person's education or the more training they receive, the greater their abilities and skills. Meanwhile, health is a field that is interrelated with education. Higher education without a healthy body will not increase productivity. Meanwhile, higher education can also influence a person's level of health awareness (Bado et al., 2017).

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**Economic Growth Theory**

Economic growth is the process of increasing a country's production capacity over time, as evidenced by an increase in Gross Domestic Product (GDP). One of the main theories explaining economic growth is the Solow Growth Theory (1956), which states that long-term economic growth is influenced by three main factors: capital accumulation, labor, and technological progress. In this theory, capital includes investments in facilities, infrastructure, and technology that increase productivity. Technological progress is considered a key driver of increased production efficiency, ultimately driving overall economic growth. Solow also emphasized the importance of balanced population growth, as excessively rapid population growth can reduce per capita income and slow economic growth (Todaro, 2015).

Economic growth theory, particularly the Solow growth theory, explains that a country's economic growth is influenced by the accumulation of capital, labor, and technological progress, which ultimately impacts Gross Domestic Product (GRDP). Higher GRDP per capita reflects better economic well-being, which can increase people's purchasing power. In the context of household food security, a high GRDP allows households easier access to quality food and meets their nutritional needs. Increased income through economic growth can provide households with the financial capacity to purchase healthy and nutritious food and meet long-term food needs.

**Economic Resilience Theory**

Resilience is a concept that aims to capture the unequal ability to respond to and overcome uncertain and rapid changes (Hasoloan, 2016). The concept of economic resilience is a process by which a region can survive or even successfully face ongoing shocks. A region's economy can be said to be resilient if the region can absorb or even minimize the shocks it faces. If a region can mitigate the shocks that occur, the next stage is the recovery stage, namely how government policies play a crucial role in the process of recovering a region from shocks. An economy that successfully recovers from a shock will automatically give birth to a new economic structure (Hasoloan, 2016).

**Household Food Security**

Food security is a condition that indicates the importance of food for households, characterized by sufficient food availability, both in quantity and quality, safety, equitable distribution, and affordable prices. Food security is a crucial and strategic aspect, as experience in various countries shows that sustainable development cannot be effectively achieved without first meeting the need for food security (Aisyah, 2020).

**Hypothesis Development**

**The Relationship between Education Level and Household Food Security**

Individuals and households with a strong education will be able to provide good food consumption for their households and ensure household food security. Higher education, in this regard, is necessary to improve access to information and

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understanding of food security. Higher education broadens and deepens individual knowledge of food, nutrition, agriculture, and sustainability. This information enables people to make better food decisions and improve household resilience (Syaman & Priyatno, 2023).

This is supported by research conducted by Afifah & Prasetyaningtyas (2024), which shows that education has a positive influence on household food security. This is further reinforced by research conducted by Nooyo et al. (2023), which shows that education has the greatest influence on food security. This contrasts with research conducted by Wardani & Yuliawati (2023) and Nooyo et al. (2023), which showed that education level had no effect on food security.

$H1$ = There is a significant influence between the Education Level variable on Household Food Security in Eastern Indonesia 2016-2023.

**The Relationship between Per Capita GRDP and Household Food Security**

Income influences household consumption; higher incomes increase consumption. Increased income provides greater access to food security. Increasing household income facilitates access to food, which can lead to household food security. Higher incomes can improve the quality of food consumption. Individuals and households with higher incomes have more financial resources to spend on higher-quality food. Income has a positive impact on spending levels. As income increases, people's ability to purchase consumer goods increases, and so does the need for higher quality (Syaman & Priyatno, 2023).

This is supported by research by Nugraheni & Reina (2022), which shows that GRDP has a positive effect on food security. This is further supported by research by Nanda et al. (2019), which shows a positive relationship between income and food security. Meanwhile, research by Zebua et al. (2019) showed that income negatively impacts household food consumption patterns.

$H2$ = There is a significant influence between the GRDP per capita variable and household food security in Eastern Indonesia from 2016 to 2023.

**The Relationship between the Covid-19 Pandemic and Household Food Security**

The COVID-19 pandemic has negatively impacted household resilience. It will cause food prices to rise and incomes to decline. The reason for this price increase, in this case, is the economic instability that occurred during the COVID-19 pandemic, which led to increases in some food prices in the market (Firdaus, 2021). However, incomes have also decreased due to the government's implementation of Large-Scale Social Restrictions (PSBB) during the COVID-19 pandemic, and even the layoffs of some workers. This has also reduced purchasing power (Fitri & Bundo, 2021).

This aligns with research conducted by Hasanah et al. (2021), which shows that food insecurity for poor families occurs due to the impact of the pandemic, which has limited access to food for them, as indicated by decreased food consumption in terms of quantity and quality. Furthermore, research by Sadiyah (2021) also shows that the COVID-19 pandemic has negatively impacted economic growth and agricultural commodity trade in Indonesia.

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*H*3 = There is a significant influence between the Covid-19 Pandemic variable on Household Food Security in Eastern Indonesia 2016-2023

## METHOD

This study employs a quantitative approach with a causal explanatory research design. The population in this study is 13 provinces in Eastern Indonesia, consisting of South Sulawesi, Bali, North Sulawesi, Gorontalo, East Nusa Tenggara, West Nusa Tenggara, Papua, Central Sulawesi, West Sulawesi, Maluku, North Maluku, Southeast Sulawesi, and West Papua. The sample of this study is all households in Eastern Indonesia. The secondary data used is panel data, namely a combination of cross-sectional data and time series data. Data collection techniques used are literature studies and internet research. Tests that will be used include classical assumption tests, panel data regression analysis, and hypotheses. The operational definitions used in this study variables are as follows:

1. Food security (Y) - food security data in Eastern Indonesia (%) from the National Food Agency
2. Education level (X1) - Average years of schooling (%) from BPS
3. GRDP per capita (X2) - GRDP per capita is obtained by dividing a region's GRDP by its population (millions of rupiah) from BPS
4. COVID-19 pandemic - dummy variable (0: not a COVID-19 pandemic, 1: COVID-19 pandemic) from the Coordinating Ministry for Maritime Affairs and Investment.

## RESULT AND DISCUSSION

### Descriptive Analysis

**Table 2. Descriptive Analysis Results**

| | Y | X1 | X2 | X3 |
|---|---|---|---|---|
| Mean | 65.23327 | 8.570577 | 466.8114 | 0.375000 |
| Median | 68.39500 | 8.520000 | 44.61800 | 0.000000 |
| Maximum | 87.65000 | 10.38000 | 43817.00 | 1.000000 |
| Minimum | 21.32000 | 6.150000 | 16.09400 | 0.000000 |
| Std. Dev. | 16.28455 | 1.042006 | 4292.156 | 0.486467 |
| Skewness | -1.122309 | -0.272728 | 10.05000 | 0.516398 |
| Kurtosis | 3.577119 | 2.194900 | 102.0049 | 1.266667 |
| Jarque-Bera | 23.27598 | 4.098065 | 44225.96 | 17.64148 |
| Probability | 0.000009 | 0.128859 | 0.000000 | 0.000148 |
| Sum | 6784.260 | 891.3400 | 48548.38 | 39.00000 |
| Sum Sq. Dev. | 27314.21 | 111.8350 | 1.90E+09 | 24.37500 |
| Observations | 104 | 104 | 104 | 104 |

Based on the data analysis, the household food security variable (Y) had an average value of 65.23. The minimum recorded value was 21.32, while the maximum value reached 87.65. This indicates that the level of household food security in Eastern Indonesia varies considerably, with some households experiencing low levels of food security and others experiencing higher levels. For the education level

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variable (X1), the average length of schooling was 8.57 years. The lowest recorded value was 6.15 years, while the highest was 10.38 years. This data illustrates that the population has generally completed education up to junior high school, although there are still differences between regions.

Furthermore, for the GRDP per capita variable (X2), the average value was 466.81. However, the very different minimum and maximum values, at 16.09 and 43,817, respectively, indicate significant economic disparities between regions within the region. Finally, for the Covid-19 pandemic variable (X3), expressed as a dummy variable, the average value was 0.375. The minimum value is 0 and the maximum is 1.

**Classical Assumption Test**

The following are the results of the classical assumption test used in the research model:

**Table 3. Results of the Classical Assumption Test**

| Test Type | Result | Conclusion |
|---|---|---|
| Normality Test | 0.001794 < 0,05 | Abnormal data |
| Multicollinearity Test | Coefficient value < 0.8 | There are no symptoms of multicollinearity |
| Heteroscedasticity Test | Probability value > 0.05 | There are no symptoms of heteroscedasticity |
| Autocorrelation Test | 1,615 < 1,650202 < 1,720 | There is no positive correlation |

Based on the results of the classical assumption tests, it can be concluded that the model in this study meets the classical assumptions, namely multicollinearity, heteroscedasticity, and autocorrelation tests. Meanwhile, the normality test for the model indicates that the data is not normally distributed.

**Panel Data Regression**

Based on the panel data regression model estimation results using Eviews, the most appropriate model for use in this study is the Random Effects Model. The panel regression estimation results and t-test are shown in the following table:

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**Table 4. Panel Data Regression Results**

Dependent Variable: Y
Method: Panel EGLS (Cross-section random effects)
Date: 05/17/25 Time: 11:10
Sample: 2016 2023
Periods included: 8
Cross-sections included: 13
Total panel (unbalanced) observations: 103
Swamy and Arora estimator of component variances

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 21.75784 | 8.137139 | 2.673894 | 0.0088 |
| X1 | 4.959109 | 0.858989 | 5.773193 | 0.0000 |
| X2 | 2.90E-05 | 0.000105 | 0.276061 | 0.7831 |
| X3 | 2.568122 | 1.029719 | 2.494003 | 0.0143 |

| Effects Specification | S.D. | Rho |
|---|---|---|
| Cross-section random | 13.70074 | 0.9119 |
| Idiosyncratic random | 4.259719 | 0.0881 |

Weighted Statistics

| | | | |
|---|---|---|---|
| R-squared | 0.434958 | Mean dependent var | 7.187038 |
| Adjusted R-squared | 0.417835 | S.D. dependent var | 5.641049 |
| S.E. of regression | 4.316708 | Sum squared resid | 1844.762 |
| F-statistic | 25.40272 | Durbin-Watson stat | 1.639552 |
| Prob(F-statistic) | 0.000000 | | |

Unweighted Statistics

| | | | |
|---|---|---|---|
| R-squared | 0.111667 | Mean dependent var | 65.59243 |
| Sum squared resid | 23036.63 | Durbin-Watson stat | 0.131295 |

Based on the results of the regression that has been carried out, the following regression model was obtained:

$$Y = 21.75784 + 4.959109X1 + 0.000002X2 + 2.568122X3$$

1. The constant of 21.75784 indicates that if all independent variables (education level, GRDP per capita, and the COVID-19 pandemic) have no effect or are zero, then the household food security level is estimated at 21.75784. This value reflects the basic level of household food security without the influence of these three variables.
2. The coefficient of education level (X1) of 4.959109 indicates that every one-level increase in education will increase household food security by 4.959109 units, assuming other variables remain constant. This means that the higher the education level of the head of the household or family members, the greater the household food security tends to be. Vice versa.
3. The coefficient of GRDP per capita (X2) of 0.000002 indicates that every one-unit increase in GRDP per capita will increase household food security by 0.000002 units, assuming other variables remain constant. However, the fluctuations in GRDP per capita in this study did not significantly impact household food security.
4. The COVID-19 pandemic coefficient (X3) of 2.568122 indicates that the COVID-19 pandemic could increase household food security by 2.568122, assuming other variables remain constant. This may be due to various government assistance programs provided during the pandemic, such as social assistance or food programs that help households maintain their food security amidst the economic hardship caused by the pandemic.

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**Hypothesis Test Results**

The following are the results of the t-hypothesis test conducted in this study:

1. Education level (X1) obtained a significance value of 0.0000. This value is smaller than the significance value used, which is 5% or 0.05. Therefore, it can be concluded that education level influences household food security (Y). Therefore, H1 is accepted and H0 is rejected.
2. GRDP per capita obtained a significance value of 0.7831. This value is greater than the significance value used, which is 5% or 0.05. Therefore, it can be concluded that GRDP per capita does not influence household food security (Y). Therefore, H0 is accepted and H2 is rejected.
3. The COVID-19 pandemic (X3) obtained a significance value of 0.0143. This value is smaller than the significance value used, which is 5% or 0.05. Therefore, it can be concluded that the COVID-19 pandemic influences household food security (Y). Therefore, H3 is accepted and H0 is rejected.

**F Hypothesis Test Results**

Based on the results of the F-test, the F-statistic probability value was 0.000. This value is smaller than the significance level used, which is 5% (0.05). This indicates that education level, GRDP per capita, and the COVID-19 pandemic simultaneously influence household food security. Therefore, H4 is accepted and H0 is rejected

**Results of the Determination Coefficient Test**

Based on the results of the coefficient of determination test, the R-Square value obtained was 0.434958, thus concluding that the ability of education level (X1), GRDP per capita (X2), and the COVID-19 pandemic (X3) in explaining the household food security variable (Y) was 0.434958 or 43.4958%. While the remaining 56.5042% was explained by variables other than those used in this study.

**The Influence of Education Level on Household Food Security**

The results of this study indicate that education level influences household food security. This is indicated by a significance value less than 0.05. The coefficient obtained is positive, indicating a positive effect of education level on household food security. This means that the higher a person's education level, the higher their household's food security. Conversely, if a person's education level is low, their household's food security will also be low.

This finding aligns with the human capital theory proposed by Gary Becker, which states that education is a form of investment in an individual to increase their capabilities and productivity. Individuals with higher levels of education tend to have better knowledge and understanding of healthy food consumption patterns, household financial management, and the importance of balanced nutrition. This makes them more capable of managing resources effectively to maintain family food security. Thus, education plays a role in shaping household behaviors that support food security.

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Furthermore, education also provides broader access to economic opportunities. Individuals with higher levels of education generally have better job opportunities and a more stable income. A more stable economic situation allows households to meet their food needs sufficiently, both in terms of quantity and quality. This reinforces the view that education not only increases knowledge but also opens access to economic resources that support food security. Conversely, low levels of education can hinder earning an adequate income, ultimately impacting household food security.

Education also influences individuals' ability to make decisions related to food consumption and management. Educated households tend to be better able to budget, plan expenses, and adapt to uncertain conditions, such as rising staple food prices or food supply disruptions. Human capital theory explains that education equips individuals with critical thinking and managerial skills useful in everyday life. Therefore, the results of this study reinforce the view that improving access to and the quality of education is a crucial strategy in supporting sustainable household food security.

These findings align with research conducted by Afifah & Prasetyaningtyas (2024) and Nooyo et al. (2023), which showed that education has a positive impact on household food security. However, the findings of this study differ from those of Wardani & Yuliawati (2023) and Nooyo et al. (2023), which showed that education level had no effect on food security.

**The Influence of Per Capita GRDP on Household Food Security**

The results of this study indicate that GRDP per capita has no effect on household food security. This is indicated by a significance value greater than 0.05. Therefore, even if GRDP per capita increases or decreases, it will not impact household food security.

Although theoretically, an increase in gross domestic product per capita reflects a region's economic growth, this finding indicates that such growth is not sufficient to guarantee food security at the household level. In classical economic growth theory, as proposed by Adam Smith, increases in national production and income should impact the welfare of society as a whole. However, if economic growth is not accompanied by equitable income distribution, its impact on low-income households will be very limited. Therefore, an increase in GRDP per capita does not necessarily reflect an improvement in the food conditions of the community as a whole.

Furthermore, modern economic growth theory, as explained by Robert Solow, emphasizes the importance of capital accumulation and technological progress as drivers of long-term growth. However, if the benefits of this growth are concentrated in certain sectors or certain groups of people, economic inequality will remain high. In this case, households with limited access to economic resources do not necessarily benefit from increased per capita GRDP.

On the other hand, food security is determined not only by aggregate income levels but also by factors such as food distribution, access, and stability. In a more inclusive development theory, economic growth must be accompanied by

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redistribution and social protection policies to ensure widespread benefits. Without interventions targeting poor or vulnerable households, per capita GRDP growth will not be sufficient to improve food security in the community.

The results of this study align with those of Zebua et al. (2019), which found that income negatively impacts household food consumption patterns. However, this study disagrees with those of Nugraheni & Reina (2022) and Nanda et al. (2019), which found that GRDP positively impacts food security.

**The Impact of the Covid-19 Pandemic on Household Food Security**

The results of this study indicate that the COVID-19 pandemic has impacted household food security. This is indicated by a significance value less than 0.05. The coefficient value is positive, indicating that the COVID-19 pandemic has a positive effect on household food security. This means that if a COVID-19 pandemic occurs in a region, household food security will increase. Conversely, if a COVID-19 pandemic does not occur in a region, household resilience will also decrease.

These findings indicate that even in the midst of a crisis, households are able to adapt and maintain access to food. This can be explained through the theory of economic resilience, which states that a resilient economic system is able to withstand, absorb, and recover from external disruptions such as disasters or crises. In this case, the pandemic has triggered various adaptive responses from both households and the government through social assistance and food protection policies. Therefore, increased food security during the pandemic may reflect the resilience of a community's social and economic systems.

Economic resilience not only reflects the ability to survive a crisis but also reflects the speed and effectiveness of adaptation to change. During the pandemic, many households adjusted their consumption behavior, strengthened social solidarity, or accessed various government assistance programs. These measures represent a form of resilience that enables households to maintain their food security despite economic pressures. This theory emphasizes that successfully maintaining food security depends not solely on normal conditions but also on adaptive capacity in the face of uncertainty. Thus, households that are resilient to the impacts of the pandemic demonstrate characteristics of a resilient and adaptive economy.

Furthermore, these findings also indicate that the pandemic has triggered various policies and interventions that have actually strengthened food security. Social assistance programs, distribution of staple foods, and logistical support are part of mitigation strategies that strengthen household resilience. Improved food security during the pandemic is not the result of household strength alone, but also the synergy between internal capacity and external support.

These research findings are inconsistent with research conducted by Hasanah et al. (2021) and Sadiyah (2021), which showed that food insecurity for poor families occurs due to the impact of the pandemic, which has limited access to food for poor families, as indicated by a decrease in food consumption in terms of quantity and quality.

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## CONCLUSION

Some conclusions obtained from this research are as follows:

1. Education level (X1) has a positive effect on household food security (Y). This means that the higher a person's education level, the higher their household's food security. Vice versa.
2. GDP per capita (X2) has no effect on household food security (Y). This means that fluctuations in GDP per capita in a region will not impact household food security (Y).
3. The COVID-19 pandemic (X3) has a positive effect on household food security (Y). This means that if the COVID-19 pandemic occurs, household food security will increase. Vice versa.
4. Education level, GDP per capita, and the COVID-19 pandemic simultaneously influence household food security (Y).

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