The Influence of Grain Prices on Rice Farming Business Income in Ngrandulor Peterongan Village, Jombang

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ABSTRACT

This research aims to analyze the influence of grain prices on rice farming income in Ngrandulor Village, Peterongan, Jombang. The research method used was a survey with a sampling technique that suited the characteristics of the rice farmer population, with a sample size of 30 respondents. Data is collected through questionnaires and direct interviews, then analyzed using appropriate statistical methods, such as simple linear regression or multiple linear regression, depending on the variables analyzed. The research results show that the price of grain has a significant influence on rice farming income. Data analysis indicates that there is a positive and significant relationship between grain prices and rice farming income. In other words, the higher the price of grain, the higher the income of rice farming businesses. The conclusion of this research is that the price of grain is an important factor that can influence the income of rice farmers, so the stability of grain prices needs to be maintained to improve farmers' welfare.

Keywords: Grain prices; Farming income; Rice farmers; Price stability.

INTRODUCTION

The economic welfare of rice farmers in Ngrandulor Peterongan Jombang is greatly influenced by the price of grain. Grain prices affect the stability of farmers' income and livelihoods as a whole. This issue becomes even more important considering that rice farming is the main source of income for many households in the region. Although the government attempts to stabilize grain prices through various policies, farmers often face income instability due to market dynamics.

Previous studies, such as those conducted by Setyo (2017) and Fitroh (2019), have highlighted the main indicators that influence grain prices, including affordability, suitability of price to quality, and price competitiveness. These indicators are critical to understanding how price changes affect farm income, as measured by monthly income, employment, and expenses. These factors play an important role in determining the market price of grain and consequently the income earned by farmers.

This research aims to determine the effect of grain prices on rice farming income in Ngrandulor Peterongan Village, Jombang. By using descriptive analysis, normality test, simple linear regression, hypothesis testing, and coefficient of determination, this research seeks to provide a comprehensive understanding of the relationship between grain prices and farming income. It is hoped that the findings of this research can contribute to existing knowledge and provide insight for policy makers to design strategies that support the stability of farmers' income and improve farmers' economic welfare.

METHOD
Research design

This research uses a quantitative research approach. Quantitative research basically involves a deductive-inductive approach, starting from a theoretical framework based on expert opinions and researcher experience, which is then developed into a specific problem to obtain verification or rejection in the form of empirical field data. The research design used was a simple linear regression test using SPSS software to determine the effect of rice prices on farmer income in Ngrandulor Peterongan Jombang.

Variable

The variables in this research are:

a. Independent Variable (X): Rice Price, including aspects of price affordability, price-quality suitability, and price competitiveness.

b. Dependent Variable (Y): Agricultural Income, including monthly income, employment, and expenses.

Population and Sample

The population in this study were all lowland rice farmers in Ngrandulor Peterongan Jombang, totaling 230 farmers spread across 7 hamlets:

Table 1 Rice Farmers

No	Hamlet Name	Number of Farmers
1.	Ngumpak Kulon	37
2.	Kepuh Sari	18
3.	Macekan	25
4.	Balongganggang	40
5.	Ngrandon	30
6.	Gempoldampet	35
7.	Sucen	45
	Total	230

Data collection

Data collection was carried out using a structured questionnaire which was distributed to rice farmers in the research area. This questionnaire includes items that measure the variables of rice price and farming income.

Data analysis

Data analysis includes descriptive analysis, normality test, simple linear regression analysis, hypothesis testing, and coefficient of determination test. SPSS software was used to perform statistical analysis. This methodology section provides a clear, concise, and replicable description of the research design, variables, population, sample, data collection methods, and data analysis techniques used in this research.

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RESULT AND DISCUSSION

This research uses descriptive statistical analysis to summarize the data collected regarding grain prices and farming income in Ngrandulor Peterongan Jombang. The analysis includes calculating the mean and percentage of the variables studied. The results show that the average values of the variables provide a comprehensive picture of the data trends.

Result

Based on the descriptive statistical analysis presented, the mean value of the grain price variable (X) was 31.866 with a standard deviation of 3.748. The minimum value is 23 and the maximum value is 37, indicating the variability in grain prices observed in the study area. For the farming income variable (Y), the mean value is 32.066 with a standard deviation of 3.647 and the observation value ranges from a minimum of 24 to a maximum of 38.

Data normality was tested using the Kolmogorov-Smirnov test. According to Sugiyono (2017), the Kolmogorov-Smirnov test checks whether the remaining data follows a normal distribution. The results of the Kolmogorov-Smirnov test show a significance value of 0.200 which is greater than the threshold of 0.05, which indicates that the residuals are normally distributed.

This research uses simple linear regression analysis to test the effect of grain prices on farming income. Regression analysis measures the relationship between the independent variable (grain price) and the dependent variable (farming income).

a. Regression Equation: The simple linear regression equation is given by:

$Y = \alpha + bX$

Where Y is the predicted value of the dependent variable (farming income), α is a constant, b is the regression coefficient, and X is the independent variable (grain price).

b. Regression Results: Regression analysis gives the following results:

$Y = 13.354 + 0.587X$

The constant (α) is 13.354, which means that if the price of grain (X) is kept constant, then farming income (Y) is 13.354. The regression coefficient (b) of 0.587 indicates that for every one unit increase in the price of grain, farming income increases by 0.587 units.

The T was carried out to determine the significance of the relationship between grain prices and farming income. The T test results are as follows: The significance value of the independent variable (rice price) is 0.000, less than the threshold of 0.05. This shows that there is a significant influence of rice prices on farmer income.

Discussion

The findings of this research highlight the significant influence of grain prices on farming income in Ngrandulor Peterongan Village, Jombang. Regression analysis shows a positive relationship, indicating that higher grain prices lead to increased farmer income. These results are in accordance with previous research theories and references, such as:

a. The Influence of Rice Production Levels and Grain Prices on the Welfare of Rice Farmers by Nawangsasih which highlights the positive impact of rice prices on the welfare of farmers.
b. Analysis of the Impact of Price Fluctuations on the Income of Shallot and Rice Farmers by Mojorejo which discusses the effect of price fluctuations on farmers' income.
c. The Influence of Grain Stock at the Farmer Level on Rice Farming Income by Sumber Harta, which explores the relationship between rice stock levels and farming income.

The findings of this research reinforce the importance of stable and profitable grain prices to improve farmers' economic welfare. Policy implications include the need for government intervention to stabilize grain prices and support farmers through subsidies and price controls. Additionally, further research could explore other factors that influence farm income, such as production costs, access to markets, and farming practices.

Overall, this study provides valuable insight into the dynamics between grain prices and farm income, and provides a basis for policies aimed at improving the livelihoods of rice farmers in rural areas.

CONCLUSIONS

This research aims to analyze the influence of grain prices on farming income in Ngrandulor Peterongan Village, Jombang. Based on the results of descriptive analysis, normality test, simple linear regression analysis, and hypothesis testing, the following conclusions were obtained:

a. Influence of Grain Prices on Farming Business Income:
   The results of simple linear regression analysis show that grain prices have a significant influence on farming income. The regression equation obtained is $Y = 13.354 + 0.587X$, where every one unit increase in the price of grain will increase farming income by 0.587 units.
b. Statistical Significance:
   The T test shows that the grain price variable has a significance value of 0.000, which is smaller than the critical limit of 0.05. This indicates that there is a significant influence between grain prices and farming income.
c. Residual Normal Distribution:
   The normality test using Kolmogorov-Smirnov shows that the residual data is normally distributed with a significance value of 0.200, which is greater than 0.05. This shows that the data used in this study meets the assumptions of normality.
d. Policy Implications:
   The results of this research indicate the importance of grain price stability to improve farmer welfare. Therefore, government intervention is needed to maintain grain price stability through supportive policies, such as price subsidies and market price controls.
e. Recommendations for Further Research:
   Further research could explore other factors that influence farm income, such as production costs, access to markets, and farming practices. This research can also be expanded with a larger sample and wider geographic variation to obtain more comprehensive results.

Overall, this research provides valuable insight into the dynamics between grain prices and farming income, and offers a basis for policies that can improve the welfare of farmers in rural areas.

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