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The Effect Of Raw Material Availability And Market Demand On The Income Of Farmers Using Organic Fertilizer In Sokaan Village, Krejengan District, Probolinggo Regency

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Abstract

This study aims to analyze the influence of raw material availability and market demand on the income of farmers using organic fertilizer in Sokaan Village, Krejengan District, Probolinggo Regency. A quantitative approach utilizing a survey method was employed. Data were collected by distributing questionnaires to farmers who use organic fertilizer. Data analysis techniques included validity and reliability tests, classical assumption tests, multiple linear regression analysis, t-tests, F-tests, and the coefficient of determination. The results indicate that raw material availability has a positive and significant effect on the income of farmers using organic fertilizer. Market demand also has a positive and significant effect on farmers' income. Simultaneously, raw material availability and market demand positively and significantly influence the income of farmers using organic fertilizer. These findings suggest that greater assurance of raw material availability and increased market demand lead to greater opportunities for increasing farmers' income. This study is expected to serve as a reference for farmers and relevant stakeholders in enhancing productivity and income through the use of organic fertilizer.

Keywords: Raw Material Availability, Market Demand, Farmers' Income, Organic Fertilizer.

INTRODUCTION

Agriculture plays a strategic role in Indonesia's economy as a source of food, employment, and income, particularly for rural communities. The development of sustainable agriculture has encouraged some farmers to use organic fertilizers as an alternative to maintaining soil fertility and quality while reducing dependence on chemical fertilizers. The use of organic fertilizers also allows farmers to utilize various natural

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materials, such as agricultural waste, livestock manure, and plant residues available in the surrounding environment. When properly utilized, organic fertilizers can improve soil conditions and support the long-term sustainability of agricultural activities The success of farming does not depend solely on cultivation techniques but is also influenced by the availability of raw materials and market demand. Adequate and good quality raw materials can help farmers maintain smooth production processes and control production costs. Meanwhile, high market demand can expand opportunities for marketing agricultural products and increase the possibility of obtaining better selling prices. Therefore, raw material availability and market demand are important factors that need to be considered because both may be related to the level of income earned by farmers who use organic fertilizers (Hendriani, Hanum and Sari, 2019).

The availability of raw materials is an important factor that can support the success of farming activities, particularly for farmers who use organic fertilizers. Raw materials such as livestock manure, agricultural waste, leaves, plant residues, and other organic materials need to be available in sufficient quantities and good quality to ensure optimal utilization. A stable supply of raw materials allows farmers to obtain organic fertilizer more easily and helps maintain smooth production activities. Conversely, limited availability or increasing prices of required raw materials may raise production costs and ultimately reduce farmers' profits. Therefore, effective management and utilization of available raw materials can improve farming efficiency, reduce production costs, and provide farmers with greater opportunities to increase their income (Andriyani and Juliansyah, 2020).

In addition to raw material availability, market demand also influences farmers' income. High demand can increase sales opportunities and selling prices, while low demand may limit market absorption and reduce prices. In microeconomics, demand refers to the quantity of goods consumers are willing and able to purchase at a certain price within a specific period (Sukirno, 2016). Therefore, farmers' ability to adjust production to market needs is essential for increasing income, particularly in organic farming (Ester *et al.*, 2026).

Market conditions and structures are linked to the income levels of economic actors. Those with better access to market networks, capital, technology, and distribution channels tend to earn more stable incomes, whereas those with limited market access are more vulnerable to income instability (Junaedi *et al.*, 2026). Market conditions and structures are linked to the income levels of economic actors. Those with better access to market networks, capital, technology, and distribution channels tend to earn more stable incomes, whereas those with limited market access are more vulnerable to income instability (Sunaika and Fahrudin, 2024).

The application of green economy concepts in production activities is linked to both economic and environmental aspects within the community. Adopting production

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practices that prioritize environmental considerations not only fosters environmental sustainability but can also yield economic benefits through increased income and job creation. The use of organic fertilizer is an agricultural practice associated with efforts to implement more environmentally friendly production activities (Pradani *et al.*, 2023).

Sokaan Village, Krejengan District, Probolinggo Regency has agricultural potential that supports the livelihoods of many local residents. Organic fertilizer is increasingly used to maintain soil quality and reduce dependence on chemical fertilizers. However, farmers still face challenges related to limited raw materials and fluctuating market demand, which may affect their income. Therefore, this study examines the effects of raw material availability and market demand on the income of farmers using organic fertilizer. Unlike previous studies that mainly focus on productivity, production costs, and fertilizer use, this research emphasizes the relationship between raw material availability, market demand, and farmers' income.

Based on the discussion, the income of farmers using organic fertilizer is influenced by raw material availability and market demand. Adequate raw materials support smooth production, while strong market demand provides opportunities to increase sales and agricultural product prices. Therefore, this study entitled "The Influence of Raw Material Availability and Market Demand on the Income of Farmers Using Organic Fertilizer in Sokaan Village, Krejengan District, Probolinggo Regency" is important to conduct. The findings are expected to support farmers, local governments, and relevant stakeholders in improving farmers' income through stronger raw material supply and wider market access.

METHOD

This study employs a quantitative research method with an associative approach. This approach is used to analyze the relationships among the research variables and determine the influence of one variable on another. According to Sugiyono, associative research aims to identify the relationship or influence between two or more variables. Through this approach, the study examines the effects of raw material availability and market demand on the income of farmers who use organic fertilizers (Sugiyono, 2023).

The population of this study consists of all farmers who use organic fertilizers in Sokaan Village, Krejengan District, Probolinggo Regency. This population serves as the basis for determining the research sample with characteristics relevant to the study objectives, particularly farmers whose farming activities are related to raw material availability, market demand, and farming income. According to Amin et al., a population comprises the entire set of research elements possessing specific traits and characteristics that serve as the focus of the study. Consequently, organic fertilizer-using farmers in Sokaan Village were designated as the population, as they exhibit

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characteristics relevant to the research variables: raw material availability, market demand, and farm income. This population subsequently served as the basis for selecting the research sample, which was expected to yield information aligned with the study's objectives (Amin, Garancang and Abunawas, 2023).

A sample is a portion of the population selected based on specific characteristics and considered representative of the overall research population (Parengkuan, Tumbel and Wenas, 2014). This study uses Probability Sampling, a sampling method that provides every member of the population with an equal opportunity to be selected as a sample. The sampling technique applied is Simple Random Sampling, in which sample members are selected randomly without considering the strata within the population. This technique is used to select farmers who use organic fertilizers in Sokaan Village, Krejengan District, Probolinggo Regency, objectively while providing each population member with an equal opportunity to become a respondent (Sugiyono, 2023).

The data sources used in this study consist of primary and secondary data. Both types of data are used to obtain relevant information regarding raw material availability, market demand, and the income of farmers who use organic fertilizers in Sokaan Village, Krejengan District, Probolinggo Regency.

RESULTS AND DISCUSSION

Normality Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		96
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	4.02788698
Most Extreme Differences	Absolute	.059
	Positive	.043
	Negative	-.059
Test Statistic		.059
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Figure : normality test results

Based on the normality test using the One-Sample Kolmogorov-Smirnov Test on 96 respondents, an Asymp. Sig. (2-tailed) value of 0.200 was obtained. Since this value

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exceeds 0.05, the residual data are considered normally distributed. This indicates that the regression model in this study satisfies the normality assumption, making the data suitable for the subsequent stage of analysis.

Multicollinearity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.610	3.134		1.790	.077		
	X1	.500	.089	.476	5.599	.000	.845	1.183
	X2	.319	.089	.305	3.587	.001	.845	1.183

a. Dependent Variable: Y

Figure : Multicollinearity test results

Based on the multicollinearity test in the Coefficients table, the variables Raw Material Availability (X1) and Market Demand (X2) have Tolerance values of 0.845 and VIF values of 1.183. Tolerance values greater than 0.10 and VIF values less than 10 indicate that neither independent variable exhibits multicollinearity. Thus, the regression model satisfies the multicollinearity assumption and is suitable for further analysis.

Heteroskedasticity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.171	1.730		1.832	.070		
	X1	.016	.049	.037	.327	.744	.845	1.183
	X2	-.011	.049	-.025	-.220	.827	.845	1.183

a. Dependent Variable: ABS_RES

Figure : Heteroskedasticity Test Results

The Glejser test results indicate that the Raw Material Availability variable (X1) has a significance value of 0.744, while Market Demand (X2) has a significance value of 0.827. Since both values exceed the 0.05 significance level, there is no indication of heteroscedasticity in the independent variables. Therefore, the regression model satisfies the homoscedasticity assumption and is suitable for further analysis.

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Multiple Linear Regression Analysis Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.610	3.134		1.790	.077		
	X1	.500	.089	.476	5.599	.000	.845	1.183
	X2	.319	.089	.305	3.587	.001	.845	1.183

a. Dependent Variable: Y

Figure : Multiple Linear Regression Analysis Results

Multiple linear regression produced the equation Y = 5.610 + 0.500X1 + 0.319X2. The constant of 5.610 represents farmers' income when X1 and X2 remain constant. The coefficients of X1 (0.500) and X2 (0.319) indicate that increases in raw material availability and market demand raise farmers' income by 0.500 and 0.319 units, respectively. The significance values of X1 (0.000) and X2 (0.001) are below 0.05, indicating that both variables have a positive and significant effect on farmers' income.

Partial Test (T-Test)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.610	3.134		1.790	.077
	X1	.500	.089	.476	5.599	.000
	X2	.319	.089	.305	3.587	.001

a. Dependent Variable: Y

Figure : Partial Test Results (T-Test)

The t-test results show that Raw Material Availability (X1) has a t-value of 5.599 > 1.986 with a significance level of 0.000 < 0.05, indicating that H_0 is rejected and Ha is accepted. Thus, X1 has a positive and significant effect on farmers' income. Market Demand (X2) also has a significant effect, with a t-value of 3.587 > 1.986 and a significance level of 0.001 < 0.05. Therefore, X2 has a positive and significant effect on the income of organic fertilizer-using farmers in Sokaan Village.

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Simultaneous Test (F-test)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1176.690	2	588.345	35.501	.000[b]
	Residual	1541.268	93	16.573		
	Total	2717.958	95			

a. Dependent Variable: Y

b. Predictors: (Constant), X2, X1

Figure : Simultaneous Test Results (F-test)

The F-test results show an F-value of 35.501 > F-table value of 3.09, with a significance level of 0.000 < 0.05. Therefore, H_0 is rejected and Ha is accepted. This indicates that raw material availability (X1) and market demand (X2) jointly have a positive and significant effect on the income of organic fertilizer-using farmers (Y) in Sokaan Village, Krejengan District, Probolinggo Regency.

Coefficient of Determination Test (R^2 test)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.658[a]	.433	.421	4.071

a. Predictors: (Constant), X2, X1

b. Dependent Variable: Y

Figure : Coefficient of Determination Test Result (R^2 test)

The coefficient of determination test produced an R Square value of 0.433, indicating that raw material availability (X1) and market demand (X2) jointly explain 43.3% of the variation in farmers' income. The remaining 56.7% is influenced by other factors outside the research model. Meanwhile, the Adjusted R Square of 0.421 indicates that, after adjustment, the two independent variables explain 42.1% of the variation in farmers' income

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DISCUSSION

Based on the analysis results, raw material availability and market demand were found to influence the income of farmers using organic fertilizers in Sokaan Village, Krejengan District, Probolinggo Regency. The research findings are described as follows.

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1. **The Effect of Raw Material Availability on the Income of Farmers Using Organic Fertilizers**

The t-test results show that raw material availability (X1) has a calculated t-value of 5.599 > 1.986, with a significance level of 0.000 < 0.05. Therefore, H_0 is rejected and Ha is accepted, indicating that raw material availability has a positive and significant effect on farmers' income. This means that better availability of raw materials supporting the use of organic fertilizers provides greater opportunities for farmers to increase their income. Adequate raw materials can help maintain smooth agricultural activities, meet fertilizer needs, and support farming productivity.

2. **The Effect of Market Demand on the Income of Farmers Using Organic Fertilizers**

The t-test results for market demand (X2) show a calculated t-value of 3.587 > 1.986, with a significance level of 0.001 < 0.05. These results indicate that H_0 is rejected and Ha is accepted, meaning that market demand has a positive and significant effect on farmers' income. Higher demand for agricultural products provides greater opportunities for farmers to increase sales and obtain higher income. This condition may also encourage farmers to increase production to meet market needs.

3. **The Effect of Raw Material Availability and Market Demand on the Income of Farmers Using Organic Fertilizers**

The F-test results show an F-value of 35.501 > 3.09, with a significance level of 0.000 < 0.05. Therefore, H_0 is rejected and Ha is accepted, indicating that raw material availability (X1) and market demand (X2) simultaneously have a positive and significant effect on farmers' income. Adequate raw materials support smooth production, while strong market demand increases opportunities to market agricultural products. When both factors are adequately fulfilled, production and marketing activities can operate more effectively, thereby providing greater opportunities to increase the income of farmers using organic fertilizers in Sokaan Village.

CONCLUSION

Based on the results of the analysis and discussion, it can be concluded that raw material availability and market demand have a positive and significant effect on the income of farmers using organic fertilizers in Sokaan Village, Krejengan District, Probolinggo Regency. Raw material availability has a positive and significant effect on farmers' income, as shown by a t-value of 5.599 with a significance level of 0.000. Market demand also has a positive and significant effect on farmers' income, with a t-value of 3.587 and a significance level of 0.001. Furthermore, raw material availability and market demand simultaneously have a positive and significant effect on farmers' income, as indicated by an F-value of 35.501 with a significance level of 0.000. These findings

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indicate that adequate raw material availability and increasing market demand can support farming activities, improve the marketing of agricultural products, and ultimately contribute to increasing the income of farmers using organic fertilizers in Sokaan Village.

REFERENCES

Amin, N.F., Garancang, S. and Abunawas, K. (2023) 'Konsep Umum Populasi dan Sampel dalam Penelitian. JURNAL PILAR: Jurnal Kajian Islam Kontemporer', *JURNAL PILAR: Jurnal Kajian Islam Kontemporer*, 14(1), pp. 15–31. Available at: https://doi.org/10.26618/WHW41W62.

Andriyani, D. and Juliansyah, H. (2020) 'Peningkatan Produktivitas Lahan dan Pendapatan Petani Melalui Penggunaan Pupuk Organik Di Desa Blang Gurah Kecamatan Kuta Makmur Kabupaten Aceh Utara', *Jurnal Ekonomi Pertanian Unimal*, 3(1). Available at: https://doi.org/https://doi.org/10.29103/jepu/v3i2.3256.

Ester, Y. *et al.* (2026) 'Peran Strategis Akses Pasar dalam Memediasi Pengaruh Kebijakan Pemerintah dan Luas Lahan terhadap Pendapatan Petani Kelapa Sawit Swadaya di Kecamatan Sekernan Kabupaten Muaro Jambi', 10(1), pp. 105–119.

Hendriani, R., Hanum, L. and Sari, R.I.K. (2019) 'Analisis Faktor yang Mempengaruhi Pendapatan Petani Padi Pengguna Pupuk Organik dan Anorganik di Kecamatan Harau', *Journal Agribusiness and Community Empowerment*, 2(1). Available at: https://doi.org/https://doi.org/10.32530/jace.v2i1.58.

Junaedi, D. *et al.* (2026) 'Dualisme Pasar dan Ketimpangan Distribusi Pendapatan dalam Pembangunan Ekonomi Lokal di Kecamatan Kraksaan', *Journal of Artificial Intelligence and Digital Business*, 4(4), pp. 14574–14582. Available at: https://doi.org/10.31004/riggs.v4i4.5820.

Parengkuan, V., Tumbel, A. and Wenas, R.S. (2014) 'Analisis Pengaruh Brand Image dan Celebrity Endorsment Terhadap Keputusan Pembelian Produk Shampo Head and Shoulders di 24 Mart Manado', *Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis dan Akuntansi*, 2(3), pp. 1792–1802. Available at: https://doi.org/10.35794/emba.2.3.2014.5972.

Pradani, R.F.E. *et al.* (2023) 'Penerapan Konsep Green Economy Dalam Meningkatkan Pendapatan UMKM Tahu di Dusun Tahu Kabupaten Situbondo', *Jurnal Pendidikan Ekonomi*, 11(1), pp. 19–25. Available at: https://doi.org/10.26740/jupe.v11n1.p19-25.

Sugiyono (2023) *Metode Penelitian Kuantitatif & Kualitatif Dan R&D*. Bandung: alfabeta.

Sukirno, S. (2016) *Mikroekonomi: Teori Pengantar (Edisi 3)*. Edisi Keti. Jakarta: PT RajaGrafindo Persada.

Sunaika and Fahrudin (2024) 'Analisis Pendapatan Petani Tambak Udang Vaname di Desa Randutatah Kecamatan Paiton Kabupaten Probolinggo', *Jaksya: Jurnal*

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Akuntansi Syariah, 2(1), pp. 1–11. Available at: https://doi.org/10.24952/jaksya.v2i1.10076.

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