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Islamic Economic Perspective on Factors Influencing Cassava Farmers' Income in Gunung Sugih, Central Lampung

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ABSTRACT

This study analyzes how land area, production costs, and production output affect cassava farmers' income in Gunung Sugih, Central Lampung, through a quantitative associative design. Data were collected using closed-ended Likert questionnaires, interviews, and observations from cassava farmers (final sample size: [N=165], determined via Cochran's formula with a 10% margin of error). Instrument validity and reliability were confirmed; Cronbach's Alpha was 0.651 (land area), 0.700 (production costs), 0.779 (production output), and 0.813 (income). Multiple linear regression shows that all three variables have positive and significant effects on income ($p < 0.05$), with production output being the most influential factor. The model explains 72.6% of income variation ($R^2 = 0.726$). From an Islamic economic perspective, halal financing, honest transactions, efficient cost management, and commitment to communal welfare strengthen the effectiveness of these technical factors and contribute to blessed income. Policy implications include support for sharia-compliant financing, input access, and farmer training focused on productivity and efficiency.

Keywords: Land Area, Production Costs, Production Output, Income, Islamic Economics.

I. Introduction

In economics, income is defined as the results in the form of money or other material goods obtained from the use of wealth or services of free human beings. Income is a person's net receipts, whether in cash or in kind. In the household context, income encompasses all receipts received by workers, laborers, or households, both physical and non-physical, while performing work at a company. (Juanda, 2018). In the agricultural sector, income plays a crucial role for farmers. A farmer's income level serves as the primary capital for running a farm and reflects their ability to manage their farm. Although agriculture has great potential, especially in Indonesia, the level of farmer welfare remains unsatisfactory. (Soekarwati, 2002). From an Islamic perspective, income also holds a significant position because it is related to the principle of economic justice. Islam is only a manager (Khalifah) responsible for managing it in a good and fair manner. The Quran, in Surah Al-Baqarah, verse 267, states:



يَا أَيُّهَا الَّذِينَ آمَنُوا أَنْفِقُوا مِنْ طَيِّبَاتِ مَا كَسَبْتُمْ وَمِمَّا أَخْرَجْنَا لَكُمْ مِنَ الْأَرْضِ ۖ وَلَا تَيَمَّمُوا الْخَبِيثَ مِنْهُ تُنْفِقُونَ وَلَسْتُمْ بِآخِذِيهِ إِلَّا أَنْ تُغْمِضُوا فِيهِ ۗ وَاعْلَمُوا أَنَّ اللَّهَ غَنِيٌّ حَمِيدٌ

Meaning: "*O you who believe! Spend (in the way of Allah) as much as you have earned from the good things you have earned and as from what you have brought forth from the earth for you. And do not choose the evil and be stubborn in spending from it, while you yourself would not take it except with a slanted eye towards it. And know that Allah is Rich, Praiseworthy.*"

This verse emphasizes that a Muslim is obligated to seek lawful income and avoid dishonest or unjust means. According to Ibn Kathir's interpretation, this verse encourages Muslims to give alms and use the results of good and lawful efforts in their daily lives. Therefore, farmers, as part of the economic community, must ensure that their income comes from lawful sources and is managed responsibly. This principle encourages farmers to manage land efficiently, avoid usury practices, and work hard to obtain blessed sustenance. (Ibn Kathir, 2002) Central Lampung Regency is a region with high agricultural potential, particularly for cassava. However, it still faces the problem of low farmer income. Based on this phenomenon, this study focuses on analyzing the factors influencing cassava farmers' income, specifically land area, production costs, and yields. Using an Islamic economic perspective as the analytical framework, this research is expected to contribute both theoretically to the development of Islamic economics and practically to efforts to improve the welfare of cassava farmers in Central Lampung. (Veronica & Fasa, 2022).

Some of the problems faced by cassava farmers in Gunung Sugih include dependence on middlemen, low selling prices, factory discounts, and ineffective fertilizer use. These problems are interrelated and impact low farmer income. Therefore, an in-depth analysis of the factors influencing cassava farmers' income is necessary, particularly from an Islamic perspective that emphasizes the principles of justice, halalness, and blessings in every economic activity. Several previous studies have examined the factors influencing farmer income. Research by (M. Sari, 2019) showed that land area, labor, and output prices significantly influence cassava farmer income. Meanwhile, research by (Afifah N, 2019) found that land area has a significant positive effect on cassava farmer income; the larger the land area, the greater the yield and income.

In the context of Islamic economics, research by (Widiani, A., Harahap, M.I., 2024) developed a cassava business model based on sharia economics that emphasizes the principles of partnership and justice. This research demonstrates that a sharia approach can improve community welfare. Furthermore, research by (Sugianto & Wargo, 2023) emphasized the role of tauke (middlemen) in the fluctuations in areca nut farmer income from an Islamic economic perspective, highlighting their role in improving farmers' economic well-being through ethical practices. Knowledge Gap: Although numerous studies have examined the factors influencing farmers' income, a knowledge gap remains regarding the integration of an Islamic economic perspective into the analysis of cassava farmers' income. Previous studies tended to focus on conventional technical and economic aspects, without considering Sharia principles such as the halal nature of income sources, distributive justice, and social responsibility. Therefore, this study aims to fill this gap by analyzing cassava farmers' income factors not only from a conventional economic perspective but also through an Islamic economic lens. (Efita, 2023).

Research Objectives Based on the problem formulation above, the objectives of this study are:

- a. To analyze the effect of land area on the income of cassava farmers in Gunung Sugih District, Central Lampung Regency.
- b. To analyze the effect of production costs on the income of cassava farmers in Gunung Sugih District, Central Lampung Regency.
- c. To analyze the effect of production yield on the income of cassava farmers in Gunung Sugih District, Central Lampung Regency.

- d. To analyze the effect of land area, production costs, and production yield on the income of cassava farmers in Gunung Sugih District, Central Lampung Regency, from an Islamic economic perspective.

II. Literature Review and Hypothesis Development

Recent agribusiness scholarship also connects environmental accounting to sustainable financial performance in plantation settings (Ramadhan & Pandin, 2025). Recent studies reinforce the income–welfare nexus in agricultural households. For maize–farming families in Malang, education moderates the income–welfare link, suggesting capacity building improves household financial outcomes (Fitrianingsih & Mardiana, 2025). Islamic social finance governance also matters: analysis of zakat fund effectiveness highlights transparency, accountability, efficiency, and Sharia compliance as pillars for better welfare delivery (Ummah et al., 2025). In plantation contexts, increased grant funding from public agencies correlates with stronger farmer program participation under strategic partnerships (Sulaiman & Arsajah, 2025).

2.1. Land Area and Farmers' Income

Land area is one of the production factors that significantly determines the amount of agricultural output. The larger the land managed, the greater the potential yield obtained, thus positively impacting the increase of farmers' income (Soekarwati, 2002). Research by M. Sari (2019) shows that land area has a significant effect on cassava farmers' income, where the larger the land, the higher the production and income achieved. This is also reinforced by the study of Afifah N (2019), which found that land area has a positive relationship with cassava farmers' income.

2.2. Production Costs and Farmers' Income

Production costs represent all expenditures incurred by farmers to run their farming activities, such as costs for seeds, fertilizers, labor, and equipment. In Islamic economic theory, production costs are considered a form of investment that must be managed efficiently and free from usury practices to generate optimal profits (Amshari, 2019). The findings of (Fathi & Iskandar, 2024) indicate that production costs, selling prices, and Islamic work ethics have a positive effect on farmers' income, with production as a mediating variable. Therefore, the management of production costs in accordance with Sharia principles will provide economic benefits as well as blessings for farmers (Indrawati, 2022).

2.3. Production Yield and Farmers' Income

Production yield is the dominant factor in determining the level of farmers' income. The higher the yield, the greater the income received by farmers (Ariani & Geo, 2020). Research conducted by Okorie et al. (2021) proved that the profitability of cassava farming is strongly influenced by production yields, land size, and farming experience. Meanwhile, Olanrewaju (2025) emphasized that the availability of agricultural inputs such as fertilizers and seeds significantly affects cassava productivity. Thus, production yield becomes the most determining factor in improving farmers' welfare.

2.4. Islamic Economic Perspective on Farmers' Income

In Islamic economics, farmers' income is not only viewed from the material aspect but also from the aspect of blessing (barakah). Islam emphasizes honesty, justice, and the prohibition of usury in economic activities. Research by Widiani, A., and Harahap, M.I. (2024) developed a cassava business model based on sharia principles, emphasizing partnership and justice in improving community welfare. Similarly, Sugianto & Wargo (2023) highlighted the role of middlemen (tauke) in farmers' income from an Islamic economic

perspective, showing that fair distribution practices can increase farmers' welfare. Therefore, the application of sharia values in agricultural activities is an essential foundation for achieving sustainable welfare.

2.5. Research Conceptual Framework

This study is designed as a model-testing research that examines the structural relationship between production factors and farmers' income from an Islamic economic perspective. Based on agricultural economics theory and Islamic economic principles, farmers' income is influenced by the availability and management of production resources. Land area represents a fundamental production asset that determines the scale of farming activities and potential output. Production costs reflect farmers' investment decisions in productive inputs, such as seeds, fertilizers, labor, and equipment, which directly affect productivity. Production output serves as the immediate outcome of land utilization and input allocation, and functions as the main driver of income generation. From an Islamic economic perspective, these relationships are strengthened by ethical principles, including the lawful (halal) utilization of resources, efficiency, fairness, and responsibility in production activities. Income is therefore viewed not only as a material outcome but also as the result of productive and ethically compliant economic behavior. Based on this framework, land area, production costs, and production output are hypothesized to have both individual and simultaneous effects on cassava farmers' income. The conceptual framework provides the theoretical basis for the empirical regression model tested in this study.

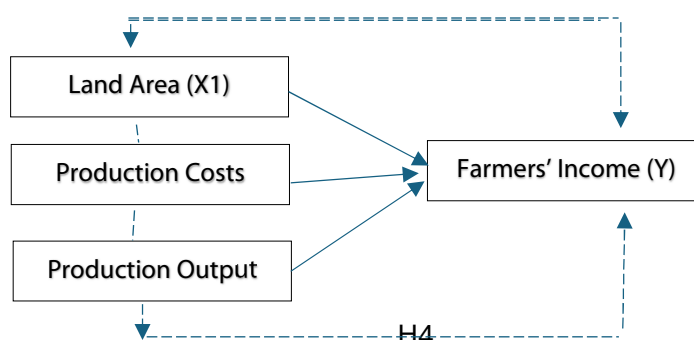


Figure 1. Research Conceptual Framework

Islamic economic principles (halal production, efficiency, fairness) serve as the analytical perspective underlying the relationships between variables.

2.6. Research Hypotheses

Based on the literature review above, the hypotheses proposed in this study are as follows:

H1: Land area has a positive effect on cassava farmers' income.

H2: Production costs have a positive effect on cassava farmers' income.

H3: Production yield has a positive effect on cassava farmers' income.

H4: Land area, production costs, and production yield simultaneously have a positive effect on cassava farmers' income from an Islamic economic perspective.

III. Research Method

This study uses a quantitative approach with an associative design, which aims to examine the relationship and influence between independent variables on the dependent variable. The quantitative design was chosen because it allows for measurement of the extent to which land area, production costs, and

yields affect cassava farmers' incomes, as well as to test the established hypotheses. The population of this study consisted of all cassava farmers in Gunung Sugih District, Central Lampung Regency. Given the relatively large population size, a sampling technique was employed. The sample was determined using the Cochran formula with a 10% margin of error, resulting in several respondents deemed proportionally representative of the population. Data collection techniques used included a closed-ended questionnaire with a Likert scale, interviews, and direct field observations. For data analysis, this study employed multiple linear regression analysis with the aid of SPSS software. The analysis was conducted in several stages:

- Validity and reliability testing to ensure the research instrument was suitable for use.
- Classical assumption testing, including normality, multicollinearity, heteroscedasticity, and linearity.
- Multiple linear regression analysis to determine the effect of independent variables on the dependent variable.
- A t-test to test the partial effect of each variable.
- An F-test to test for simultaneous effects.
- The coefficient of determination (R^2) to assess the extent to which independent variables contribute to cassava farmers' income.

IV. Result and Discussion

Table 1. Results of Interviews with Cassava Farmers

NO	Farmer's name	Capital (Rp))	Land Area (Ha)	Selling Price (Rp/Kg)	Pieces/Ton
1	Syahrul Nurhaq	23.400.000	10	1.250	30%
2	Syarifudin	15.210.000	6,5	1.250	30%
3	Mardani	11.700.000	5	1.250	30%
4	Ibrahim	4.680.000	2	1.250	30%

The results of the interview on March 27, 2025, a pre-survey was conducted with cassava farmers in Gunung Sugih District, Central Lampung. who have a land area of more than 2 hectares, this pre-survey was conducted on cassava farmers in Gunung Sugih, Central Lampung Komering Agung. Like a farmer named Syahrul Nurhaq, the capital used is Rp. 23,400,000, and the area of land planted with cassava is 10 hectares, the income obtained is Rp. 315,000,000. While the farmer named Mr. Syarifudin, with the capital used, is Rp. 15,210,000, and the area of land planted with cassava is 6.5 hectares, the income obtained is Rp. 204,750,000. A cassava farmer named Mr. Mardani, with the capital used is Rp. 11,700,000 for a land area of 5 hectares, an income of 157,500,000, and a farmer named Mr. Ibrahim with a capital of Rp. 4,680,000 and a land area of 2 hectares, the income earned is Rp. 63,000,000. So, as seen from the table above, high capital and large land do not guarantee high income for farmers. This income difference shows that large land area and capital do not always guarantee high income, but efficiency in farm management also plays an important role. This is determined by production factors. In this research, several data test models are employed using SPSS, including Validity Tests, Reliability Tests, Linearity Tests, classical assumption tests, Multiple Regression Analysis, Hypothesis Tests, and Determination Coefficients (R^2).

4.1. Validity Test

Table 2. Validity Test Results

No	Variables	R. Hitung	R. Tabel	Decision
1	X1.1	0,357	0,1528	Valid
2	X1.2	0,697	0,1528	
3	X1.3	0,559	0,1528	
4	X1.4	0,617	0,1528	

5	X1.5	0,513	0,1528
6	X1.6	0,522	0,1528
7	X1.7	0,706	0,1528
8	X2.1	0,711	0,1528
9	X2.2	0,588	0,1528
10	X2.3	0,626	0,1528
11	X2.4	0,620	0,1528
12	X2.5	0,616	0,1528
13	X2.6	0,632	0,1528
14	X3.1	0,606	0,1528
15	X3.2	0,632	0,1528
16	X3.3	0,717	0,1528
17	X3.4	0,647	0,1528
18	X3.5	0,682	0,1528
19	X3.6	0,551	0,1528
20	X3.7	0,752	0,1528
21	Y1	0,618	0,1528
22	Y2	0,717	0,1528
23	Y3	0,623	0,1528
24	Y4	0,579	0,1528
25	Y5	0,620	0,1528
26	Y6	0,592	0,1528
27	Y7	0,610	0,1528
28	Y8	0,650	0,1528
29	Y9	0,694	0,1528

Based on the validity test results above, it is known that all question items in variables X1 (land area), X2 (production costs), X3 (production results), and Y (farmer income) have a calculated r value greater than the table r (0.1528). This indicates that all indicators used in the questionnaire are declared valid, because each item can measure the research variables appropriately according to the established concept. Thus, the research instrument used is suitable for collecting data and can be continued to the next stage of analysis.

4.2. Reliability Test

Table 3. Reliability Test X1

Cronbach's Alpha	N of Items
0.651	7

Based on the results of the reliability test, variable X1 (land area) obtained a Cronbach's Alpha value of 0.651, which is greater than the minimum limit of 0.60. This indicates that the research instrument for variable X1 is declared reliable, meaning that the questionnaire items have good internal consistency and can be trusted for use in research

Table 4. Reliability Test X2

Cronbach's Alpha	N of Items
0.700	6

Based on the reliability test results, variable X3 (production output) had a Cronbach's Alpha value of 0.700, which is higher than the minimum limit of 0.60. This indicates that the research instrument for variable X3 is highly reliable, indicating that the questionnaire items used are consistent and reliable in measuring this variable.

Table 5. Reliability Test X3

Cronbach's Alpha	N of Items
0.779	7

Based on the reliability test results, variable X3 (production results) obtained a Cronbach's Alpha value of 0.779, which is higher than the minimum limit of 0.60. Thus, the research instrument for variable X2 is declared reliable, so the questionnaire items used have excellent internal consistency and are suitable for use in research.

Table 6. Reliability Test Y

Cronbach's Alpha	N of Items
0.813	9

Based on the reliability test results, variable Y (income) obtained a Cronbach's Alpha value of 0.813, exceeding the minimum limit of 0.60. Thus, the research instrument for variable Y was declared highly reliable, meaning the questionnaire items used had high internal consistency and could be trusted to accurately measure the income variable.

Table 7. Linearity Test

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups (Combined)	6395.872	23	278.081	11.201	0.000
Linearity	5721.677	1	5721.677	230.473	0.000
Deviation from Linearity	674.195	22	30.645	1.234	0.229
Within Groups	3500.431	141	24.826		
Total	9896.303	164			

Note. Dependent Variable: Y; Factor: X2 (Production Costs)

Based on the results of the linearity test, it is known that the relationship between the production cost variable (X2) and the income of cassava farmers (Y) is linear. This is evidenced by the significance value in the Linearity row of 0.000, which is smaller than 0.05, indicating that there is a significant linear relationship between X2 and Y. Meanwhile, the significance value in the Deviation from Linearity row of 0.229 is greater than 0.05, which means there is no significant deviation from linearity. Thus, the linearity assumption is met, so that the production cost variable is worthy of being included in the multiple linear regression model to analyze its effect on the income of cassava farmers. These results confirm that increasing production costs proportionally will have an impact on increasing the income of cassava farmers, and from the perspective of Islamic economics, managing production costs efficiently and in accordance with sharia principles will provide optimal results and blessings for the welfare of farmers.

4.3. Classical Assumptions

Table 8. Normality Test

Item	Value (Unstandardized Residual)
N	165
Mean	0.0000000
Std. Deviation	4.06807561
Most Extreme Differences - Absolute	0.103
Most Extreme Differences - Positive	0.066
Most Extreme Differences - Negative	-0.103
Test Statistic	0.103
Asymp. Sig. (2-tailed)	0.000
Monte Carlo Sig. (2-tailed) - Sig.	0.055
99% CI Lower Bound	0.049
99% CI Upper Bound	0.061

Note. Lilliefors Significance Correction; Monte Carlo based on 10,000 sampled tables

4.4. Policy and Managerial Implications (Islamic Economics Perspective)

The empirical finding that production output is the dominant driver of cassava farmers' income, followed by land area and production costs, has several actionable implications when viewed through the lens of Islamic economics. First, interventions that expand farmers' productive capacity—improved seed varieties, timely input access, and post-harvest processing—should be paired with human capital development. Evidence from rural households shows that education strengthens the income–welfare pathway, implying that training in financial literacy, record-keeping, and basic agribusiness skills can amplify the income effect at the household level (Fitrianiingsih & Mardiana, 2025). Second, governance and transparency of resource flows matter. Islamic social finance institutions (e.g., zakat and waqf managers) can complement formal credit by funding productivity-enhancing assets and bridging seasonal liquidity gaps, provided that their allocation adheres to the pillars of transparency, accountability, efficiency, and Sharia compliance (Ummah et al., 2025). In practice, this implies clear disclosure of collection–distribution ratios, independent auditing, and targeting criteria that prioritize mustahik engaged in agriculture value chains (Y. E. Sari et al., 2024).

Third, public grants and revolving funds targeted at smallholders should be designed to crowd in private co-investment and cooperative-based service delivery. Evidence from plantation settings indicates that higher grant levels are associated with increased farmer participation under strategic partnerships; analogous partnership models—linking farmer groups with input suppliers, off-takers, and microfinance institutions—can accelerate technology adoption in cassava systems (Sulaiman & Arsajah, 2025). To avoid moral hazard and riba-based financing traps, partnership contracts should adopt Sharia-compliant modes (e.g., muzara'ah, musyarakah, or murabahah for inputs) with fair risk-sharing and transparent pricing. Fourth, cost efficiency should not be pursued at the expense of maqasid al-sharia objectives. Programs that compress costs via bulk procurement or shared mechanization must also safeguard farmer safety, environmental stewardship, and community welfare, so that income growth is both halal and tayyib. Finally, a practical roadmap for local stakeholders includes: (1) establishing a district-level cassava productivity taskforce that coordinates extension, input logistics, and market access; (2) integrating Islamic microfinance windows into farmer cooperatives to finance certified inputs and small equipment; (3) building a digital ledger for farm records and price transparency; and (4) embedding monitoring indicators that track productivity, household welfare, and the inclusivity of benefits for smallholders and women. These steps operationalize the regression insights into institutional mechanisms that promote sustained, ethically grounded income gains. In parallel, public budgeting quality at the village level shapes welfare outcomes; evidence from Palu shows planning effectiveness tracks performance realization (Ananda et al., 2025).

4.5. Results

Based on the results of the normality test, a significance value of 0.55 was obtained, which is greater than 0.05. This indicates that the data is normally distributed, thus meeting the assumption of normality, and can be used for parametric statistical analysis. The p-plot image above shows that the points follow the direction of the main diagonal line and are spread between the diagonal lines, so that the data is stated to be normally distributed.

Table 9. Multicollinearity Test

Variable	Tolerance	VIF
X1	0.561	1.784
X2	0.366	2.729
X3	0.352	2.839

Note. Dependent Variable: Y

The results of the multicollinearity test show that the Tolerance values for X1 (0.561), X2 (0.366), and X3 (0.352) are all greater than 0.10, and the VIF values for each variable (1.784, 2.729, and 2.839) are below 10. This indicates that there are no symptoms of multicollinearity among the independent variables in the regression model, so the model is suitable for use for further analysis.

Table 10. Heteroscedasticity Test

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	4.469	1.051		4.250	0.000
X1	-0.153	0.056	-0.284	-2.762	0.006
X2	0.068	0.074	0.116	0.912	0.363
X3	0.033	0.058	0.073	0.564	0.574

Note. Dependent Variable: Abs_RES (Glejser test).

The results of the heteroscedasticity test show that the significance value (Sig.) for variable X1 is 0.006, X2 is 0.363, and X3 is 0.574. Because the decision-making criteria are if the Sig. value > 0.05, then heteroscedasticity does not occur, whereas if Sig. If < 0.05, then heteroscedasticity occurs. It can be concluded: in variable X1, there are symptoms of heteroscedasticity (Sig. 0.006 < 0.05), while in variables X2 and X3, there are no symptoms of heteroscedasticity (Sig. 0.363 and 0.574 > 0.05). In general, the regression model is not completely free from heteroscedasticity because X1 does not meet the assumption of homoscedasticity.

Table 11. Multiple Linear Regression Analysis

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	-0.080	1.578		-0.051	0.960
X1	0.263	0.083	0.174	3.150	0.002
X2	0.417	0.111	0.255	3.745	0.000
X3	0.641	0.087	0.510	7.334	0.000

Note. Dependent Variable: Y.

Based on the results of multiple linear regression analysis, the equation $Y = -0.080 + 0.263(X1) + 0.417(X2) + 0.641(X3)$ was obtained, which showed that land area (X1), production costs (X2), and production yields (X3) had a positive effect on the income of cassava farmers (Y) in Gunung Sugih, Central Lampung. The significance value for the three independent variables was each less than 0.05 (X1 = 0.002; X2 = 0.000; X3 = 0.000), so all three had a significant effect on income. Production yields (X3) had the most dominant influence with a Beta value of 0.510, followed by production costs (X2) with a Beta of 0.255, and land area (X1) with a Beta of 0.174. These findings indicate that the higher the production yields obtained by farmers, the greater the income generated, while land area and production costs also contributed, but with a smaller influence. From an Islamic economic perspective, increasing these production factors needs to be done in a halal, fair, and sustainable manner so that farmers' welfare can be achieved without harming other parties.

4.6. Hypothesis Testing

Table 12. F Test (Simultaneous Test)

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	7182.228	3	2394.076	142.018	0.000
Residual	2714.075	161	16.858		
Total	9896.303	164			

Note. Dependent Variable: Income. Predictors: Production Output, Land Area, Production Costs.

The F-test results show a calculated F-value of 142.018 with a significance level of 0.000 (<0.05). This means that the variables of land area, production costs, and production yield simultaneously have a significant effect on income. In other words, the regression model used is suitable for predicting income based on these three independent variables.

Table 13. t-Test (Partial Test)

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	-0.080	1.578		-0.051	0.960
Land Area	0.263	0.083	0.174	3.150	0.002
Production Costs	0.417	0.111	0.255	3.745	0.000
Production Output	0.641	0.087	0.510	7.334	0.000

The t-test results show that the variables of land area, production costs, and production yield have a significant effect on income. This is evident from the significance value for land area of 0.002 (<0.05), production costs of 0.000 (<0.05), and production yield of 0.000 (<0.05). Thus, the three independent variables partially have a positive and significant effect on the dependent variable (income). Meanwhile, the constant value has a significance of 0.960 (>0.05), which indicates no significant effect.

Table 14. Coefficient of Determination (R²)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.852	0.726	0.721	4.106

Note. Predictors: X1, X2, X3.

Based on the results of the coefficient of determination test, the R value of 0.852 indicates a very strong relationship between land area, production costs, and production yields with cassava farmers' income. The R Square value of 0.726 means that approximately 72.6% of changes in cassava farmers' income can be explained by these three factors, while the remaining 27.4% is influenced by other factors outside this study. The Adjusted R Square value of 0.721 confirms that this regression model is good and stable, because it has taken into account the number of variables used and the size of the research sample.

4.7. Discussion

a. Land Area Affects Cassava Farmers' Income

The results of this study indicate that land area has a positive and significant effect on cassava farmers' income. This is evidenced by a significance value of $0.002 < 0.05$ and a regression coefficient of 0.263, which means that each additional unit of land area will increase farmers' income proportionally. The larger the area of land managed, the more cassava can be produced, thus impacting farmers' income. This condition is in line with agricultural economic theory, which explains that land is the main production factor in agricultural activities, so the larger the area of land managed, the greater the opportunity to increase productivity and income. In line with the results of this study, several previous studies also show consistent findings. Based on research by UA et al. (2025), it was stated that land area, production costs, and selling prices have a significant influence on the income of oil palm farmers, with variable contributions reaching 89.3%. The results of research by Dabutar & Husein (2022) showed that the variables of production, selling prices, and land area each have a positive and significant influence on the income of red chili farmers, where these three factors simultaneously explain 85% of the variation in income, while the remaining 15% is influenced by other factors outside the research model. From various studies, it can be emphasized that land area is a key factor in determining the level of farmer income for various commodities. From an Islamic economic perspective, land is not only considered a factor of production, but also a mandate from Allah SWT that must be managed properly and responsibly. Islam emphasizes that humans are caliphs on earth who are given the obligation to utilize natural resources fairly, not excessively, and to provide benefits for many people. Therefore, a farmer's land holdings should not only be viewed as a means of increasing personal income but also as a path to achieving shared prosperity, preserving the environment, and ensuring the sustainability of future generations. This aligns with the principles of maqāṣid al-sharī'ah in Islamic economics, which emphasize welfare, justice, and sustainability in resource management (Walke Agnola and Faustine Agata, 2024).

b. Production Costs Affect Cassava Farmers' Income

The results of this study indicate that production costs (X_2) have a positive and significant effect on cassava farmers' income (Y), with a significance value of 0.000 (<0.05) and a regression coefficient of 0.417. The linearity test also demonstrated a linear and significant relationship between production costs and income, thus concluding that the greater the proportional production costs incurred, the greater the potential for increased income for farmers. This aligns with Islamic economic theory, which views production costs as a form of investment that must be managed efficiently and lawfully to achieve optimal results. This finding is related to previous research. (Amshari, 2019) Research explains that in the Islamic economic system, particularly profit-sharing, production costs are more efficient than the interest system because there is no additional burden from interest, thus allowing for greater increases in farmer income. Meanwhile, research by Fathi & Iskandar (2024) shows that production costs, selling prices, and an Islamic work ethic have a positive effect on farmer income, with production as a mediating variable. The results of this previous research

reinforce the finding that investment in production costs managed according to sharia principles, efficiency, and an Islamic work ethic will significantly contribute to increasing farmers' incomes.

From an Islamic economic perspective, production costs are viewed as a form of investment (tijarah or tabarru') that has religious value if conducted in accordance with sharia principles. This investment must be free from riba (usury), gharar (gharar), and maysir (sacrifice) and oriented towards achieving the common good. Therefore, every expenditure on production costs, such as the purchase of seeds, fertilizer, labor, and equipment, must be well-planned to provide optimal, fair, and sustainable benefits. Islamic production principles emphasize not only profit but also blessings, distributive justice, and community welfare. Therefore, the capital used must come from halal sources so that the resulting income is blessed and in line with Islamic values.

c. Production Yields on Cassava Farmers' Income

The results of this study indicate that the production yield variable (X_3) has the most dominant influence on cassava farmers' income (Y), with a regression coefficient of 0.641 and a significance value of 0.000 (<0.05). This means that the higher the cassava yield, the greater the income received by farmers. The production yield variable is more decisive than land area or production costs in improving farmers' welfare. This finding aligns with agricultural productivity theory, which emphasizes the importance of increasing output as a primary factor in improving farmers' living standards. (Ariani & Geo, 2020) also explained in his research that the analysis of cassava farmers' production and income demonstrated the significant role of yields in improving welfare, thus enabling productivity to be used as an indicator of farming success. Based on research by Okorie et al. (2021), the profitability of cassava production by smallholder farmers in Enugu State, Nigeria, was significantly influenced by land size, fertilizer price, age of the household head, education level, and farming experience. This suggests that management of production inputs and farmer characteristics play a crucial role in increasing cassava farmers' income.

Research by Olanrewaju (2025) showed that land size, labor, and access to planting materials positively influenced cassava yields in Ogun State, Nigeria, while suboptimal fertilizer use showed a negative impact. Therefore, efficient resource management and access to agricultural inputs are key factors in increasing farmer productivity and income. This research indicates that efficient management of production inputs, land size, labor, and access to planting materials are key factors significantly influencing cassava farmer productivity and income. From an Islamic perspective, an abundant harvest is a gift from Allah SWT that should be appreciated and managed with full trust. Abundant production is not only intended to improve personal well-being but also to benefit others through the mechanisms of zakat, infaq, and sadaqah. Islam emphasizes that every blessing a person receives is a trust from Allah for which he must be held accountable. Therefore, increasing agricultural production is not merely an economic issue but also a means of worship that fosters gratitude, upholds justice, and maintains social balance. In Islamic economic literature, this concept emphasizes that the ultimate goal of productivity is to achieve the common good (maslahah 'ammah), not just individual material gain.

d. Land Area, Production Costs, and Yields on Cassava Farmers' Income from an Islamic Economic Perspective

The results show that land area (X_1) has a positive and significant effect on cassava farmers' income, with a significance value of 0.002 (<0.05) and a regression coefficient of 0.263. This means that the larger the land area, the higher the potential income. From an Islamic perspective, land is a trust from Allah SWT that must be utilized wisely, not only for personal gain but also to benefit the community. Furthermore, production costs (X_2) were also shown to have a positive and significant effect on cassava farmers' income, with a significance value of 0.000 (<0.05) and a regression coefficient of 0.417. This indicates that the greater the costs incurred for seeds, fertilizer, labor, and equipment, the greater the income, as long as these costs are managed efficiently. These results align with research by (Manganyi et al., 2023), which found that investment in production costs plays a significant role in increasing farmer incomes through the cassava value chain. From an Islamic economic perspective, production costs are viewed as a form of investment (tabarru' and tijarah) that must be managed in a halal and responsible manner. This is further supported by (Rusanti & Sofyan, 2023), who explain that capital in agricultural businesses must not come from haram sources such as usury (riba), so that the results bring blessings.

Production yield (X_3) has the most dominant influence on cassava farmers' income, with a regression coefficient of 0.641 and a significance value of 0.000 (<0.05). This means that the higher the cassava yield, the greater the income received by farmers. Research by Oshioriamhe et al. (2025) also supports this finding by

confirming that production yield is a key factor in determining smallholder farmers' income, even more influential than other factors such as farmer age, labor utilization, and land area. In other words, productivity is the primary indicator of cassava farming success because it directly reflects the farmer's ability to utilize existing resources to produce maximum output. From an Islamic perspective, abundant production is seen as a gift from Allah SWT that should be appreciated, managed responsibly, and distributed fairly. Based on this description, it can be concluded that land area, production costs, and yields have a positive and significant impact on cassava farmers' income, with yield being the most dominant factor. Therefore, farmers need to optimize land use, plan production costs efficiently according to halal principles, and increase productivity through superior seeds and proper care. From an Islamic economic perspective, increasing farmer income is not only an economic goal but also a means of worship that reflects gratitude, justice, and social responsibility. Thus, successful cassava farming not only benefits individuals but also brings blessings and benefits to the wider community.

The results of this study indicate that land area, production costs, and yields significantly influence the income of cassava farmers in Gunung Sugih, Central Lampung. Farmers who manage larger plots of land tend to produce higher yields, thus increasing their income. Production costs also play a significant role, where efficient cost management can increase profits. Furthermore, increased production directly impacts farmers' income. From an Islamic economic perspective, cassava farming practices that prioritize honesty, avoid usury, and apply the principle of justice in the distribution of produce provide added value in the form of income blessings. Therefore, this study confirms that technical farming factors and the application of Sharia values work in harmony to improve the welfare of cassava farmers. The purpose of this study is to analyze in depth the extent to which land area, production costs, and yields influence the income of cassava farmers in Gunung Sugih, Central Lampung. This study aims to examine farmers' income from an Islamic economic perspective by examining whether farming practices align with Sharia principles, such as honesty in transactions, avoidance of usury, gharar, and injustice, and the application of the value of blessings in the management of business results. This study also aims to identify key factors that can support improved cassava farmer welfare through more efficient farming management that aligns with Islamic values, thereby in Surah Al-Baqarah: 188, which explains the prohibition on consuming wealth through vanity :

وَلَا تَأْكُلُوا أَمْوَالَكُمْ بَيْنَكُمْ بِالْبَاطِلِ وَتُدْخِلُوا بِهَا إِلَى الْحُكَّامِ لِتَأْكُلُوا فَرِيقًا مِّنْ أَمْوَالِ النَّاسِ بِالْإِثْمِ وَأَنْتُمْ تَعْلَمُونَ

Meaning: *"Do not falsely eat the wealth between you and (do not) bring (the affairs of) the wealth to the judges with the intention that you can consume some of other people's wealth sinfully, even though you know."*

Obstacles in this research include limited data held by cassava farmers, as most do not record detailed production costs and income, requiring repeated clarification to obtain accurate data. Furthermore, some farmers lack a thorough understanding of Islamic economic concepts, requiring the researcher to provide prior explanations to ensure their answers are relevant to the research context. Another obstacle is the varying schedules of farmers, particularly during the planting and harvest seasons, which can lead to longer data collection times than initially planned. The geographical location and difficult access to the research location also pose challenges in reaching respondents. These obstacles require the researcher to adjust their schedule and employ a persuasive approach to obtain valid data that meets the research needs.

V. Conclusion

This study was conducted to examine the effects of land area, production costs, and production output on cassava farmers' income in Gunung Sugih District, Central Lampung, from an Islamic economic perspective. Based on the results of multiple linear regression analysis, several conclusions can be drawn in direct response to the research questions. First, land area has a positive and statistically significant effect on cassava farmers' income. This finding indicates that larger cultivated land provides greater production capacity, which contributes to higher income levels. However, the results also imply that land expansion must be accompanied by effective management to generate optimal income outcomes. Second, production costs have a positive and significant influence on farmers' income. Increased expenditure on productive inputs such as seeds, fertilizers, labor, and equipment enhances productivity and income when managed efficiently. From an Islamic economic perspective, production costs function as lawful investment (tijarah) that supports real economic activity, provided they are free from usury and wasteful practices. Third, production output has the

strongest and most dominant effect on cassava farmers' income. Higher production output directly increases revenue and serves as the primary determinant of income generation. This result confirms that productivity improvement is the most critical factor in enhancing farmers' welfare. Fourth, land area, production costs, and production output simultaneously have a positive and significant effect on cassava farmers' income. The combined influence of these production factors explains a substantial proportion of income variation, demonstrating the robustness of the proposed research model. When viewed through an Islamic economic perspective, the findings highlight that income improvement is not solely driven by technical production factors but is also strengthened by ethical economic principles, including efficiency, fairness, and lawful resource utilization.

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