FACTORS THAT INFLUENCE MENDONG FARMERS' INCOME

Suyudi [1], Rudi Priyadi[2], Rina Nuryati[1] dan Zulfikar Noormansyah[1]
[1]Departement of Agribusiness, Faculty of Agriculture, Siliwangi University, Indonesia
[2]Departement of Agrotechnology, Faculty of Agriculture, Siliwangi University, Indonesia
[1]*Corrresponding author: suyudi@unsil.ac.id*

ABSTRACT. Mendong (Fimbristylis umbellaris) is a plantation commodity used as a raw material in the creative industry. However, farmers engaged in mendong cultivation face challenges such as declining market demand and increasing production costs, forcing them to sell their products at lower prices. This study aims to analyze the average production, production costs, selling prices, and income of mendong farmers, as well as to examine the simultaneous and partial effects of production, production costs, and selling prices on farmer income. The research employed a survey method. The sample comprised 50 percent of the total population of 68 mendong farmers, selected using simple random sampling. The study was conducted in Kamulyan Village, Manonjaya District, Tasikmalaya Regency. Data were collected through structured questionnaires and direct interviews with respondents. Analytical methods included cost, revenue, and income analysis, along with multiple linear regression to assess the factors influencing farmer income. Results indicated that the average mendong production was 104.381 quintals per hectare, with average production costs of IDR 27,444,502 per hectare, an average selling price of IDR 576,471 per quintal, and an average income of IDR 32,187,576 per hectare in the third production cycle. Simultaneously, production volume, production costs, and selling prices significantly influenced farmers' income. Partially, production volume and selling prices had a positive effect, while production costs had a negative effect on income.

Keywords: Mendong; Farming; Cost; Income; Production

Introduction

West Java is known as the center of creativity and Sundanese culture, so historically it has carried out many economic activities including the creative industry. Tasikmalaya Regency is one of the areas that is very famous for its handicrafts, one of which is made from mendong. Manonjaya District is one of the districts in Tasikmalaya Regency, West Java Province with an area of 3,941 hectares, consisting of 2,280 hectares of Non-Rice Field Agricultural Land, 1,011 hectares of Rice Field Agricultural Land and 650 hectares of Non-Agricultural Land [1]

Mendong plants are one type of plantation crop that is used as a raw material for domestic industry. An important part of the mendong plant is the stem which is used as a raw material for weaving, such as mats, hats, bags, wallets and so on [2]. Mendong plants are one type of commodity that is used as a raw material for domestic industry to meet the needs of the creative industry. Mendong plants grow in areas that have sufficient water and are muddy such as swamps or rice fields, this plant is a type of grass, one family of Cyperacea. The advantages of mendong as a raw material for crafts are that it does not break easily when dried, is water resistant, elastic and the product is organic.

In West Java Province, there are only three areas that are producers of mendong plants, one of which is Tasikmalaya Regency, which has the highest planted area and production of mendong commodity plantation crops in West Java with a total planted area of 234 hectares, a production volume of 988 tons, and an average production of 4,222 kg/hectare.

Table 1. Area and Production of Mendong Commodity Plantations in West Java Province

2017

No.	Regency/City	Plan Area (Ha)				Production	
		TBM	TM	TR/ TTM	TOTAL	Total	Average (Kg/Ha)
1	Tasikmalaya City	-	64	-	64	309	4,848
2	Subang	-	4	-	4	2	600
3	Tasikmalaya Regency	-	234	-	234	988	4,222
	Total	-	302	-	302	1,299	4,312

Source: West Java Plantation Service, Processed data, 2017

One of the problems faced by mendong farmers in Kamulyan Village, Manonjaya District is the decreasing market demand for mendong so that farmers sell their agricultural products at low prices, this happens because of restrictions on the purchase of mendong caused by several companies that switch to using raw materials for their creative industry from mendong to plastic. The replacement of raw materials has caused a decrease in demand for mendong, causing prices in the market to be low so that this causes the profits obtained by farmers to be smaller.

Several factors that must be considered in managing mendong farming include production, production costs, and selling prices. These factors will affect farmers' income. According to [3], production factors are everything used for production activities and support efforts in creating goods or services. These factors greatly affect the size of the production obtained, which directly affects farmers' income.

In general, factors that affect farmers' income include production, production costs and selling prices. Production is a series of activities to produce mendong, production activities are carried out from the beginning of seed preparation until the mendong is ready to be sold. Production costs are one of the factors that determine the size of the selling price of production results, this affects the size of the profit to be obtained, if the production costs are lower, the profits obtained will be higher and the income obtained will also be higher. In addition to production and production costs, selling prices also affect income. If the selling price is high and the costs are low, the income obtained will be higher. Based on the results of the study [5] concluded that it is still necessary to provide guidance to farmers both individually and institutionally to encourage farmers to use organic fertilizers in mendong farming to increase production.

The success of a farming business can be measured from the level of income obtained from compensation for labor, technology and capital used in managing the farming business. Based on the background above, it is necessary to conduct research on "Factors Affecting Mendong Farmers' Income". The purpose of this study is to analyze production, production costs, selling prices, and income of mendong farmers and to analyze whether there is an influence of production, production costs, and selling prices on mendong farmers' income simultaneously and partially

Research method

This research was conducted from January to August 2024. The research location was in Kamulyan Village, Manonjaya District, Tasikmalaya Regency. The determination of the research area was carried out intentionally considering that the majority of the people in the area are farmers who cultivate mendong plants and are one of the centers of mendong production in Tasikmalaya Regency.

The method used in this study is a survey. The sampling technique used in this study is simple random sampling. The number of samples taken was 34 people from a population of 68 people. [4] states that if the population size is less than 100, then the sampling is at least (50%) of the population size. If the population size is equal to or more than 1000, the sample size is expected to be at least (15%) of the population size.

Analysis Framework

The data analysis method used in this study is a multiple linear regression analysis model. According to [6], multiple linear regression analysis is used to test the influence of two or more independent variables on one dependent variable. Factors that are estimated to influence the income of mendong farmers include: Production (X1), Production Costs (X2) and Selling Prices (X3). The regression model used in this study can be formulated as follows:

$$Y = a + \beta 1X1 + \beta 2X2 + \beta 3X3 + e$$

Description:
Y = Income (Rp)
a = Constant
X1 = Production (quintal)
X2 = Production Cost (Rp)
X3 = Selling Price (Rp)
β1 = Production Regression Coefficient
β2 = Production Cost Regression Coefficient
β3 = Selling Price Regression Coefficient
e = Interference Error (error)
Hypothesis Test

1. F Test (Simultaneous)
The F test is a test used to show the effect of independent variables simultaneously on the dependent variable. This test is used to see whether all factors that affect the income of mendong farmers have a simultaneous effect on the dependent variable.
The hypothesis of this study is:
a. H0: β1, β2, β3 = 0: There is no influence of independent variables on the income of mendong farmers
b. H1: β1, β2, β3 ≠ 0: There is an influence of independent variables on the income of mendong farmers

2. t-test (Partial)
The t-test is a test used to show how close the influence of one independent variable individually is in explaining the variation of the dependent variable, so to find out whether the independent variable has an effect on the income of mendong farmers and each of these factors is tested using the t-test.
The hypotheses tested are:
a. H0: β = 0: There is no influence of the independent variable (X1) on the income of mendong farmers
b. H1: β ≠ 0: There is an influence of the independent variable (X1) on the income of mendong farmers

Results and discussion

Production cost

Cost is an amount of money or goods spent on production activities. In production activities, farmers are usually faced with the problem of costs that must be spent and calculated to provide production factors. The costs in this study are all costs incurred for the mendong farming process in one production period, namely the 3rd production period.

Fixed costs are costs incurred for the production process that do not depend on production results, this shows that regardless of the amount of production results, fixed costs do not change. The average total fixed costs incurred for mendong farming in one production period is Rp 12,010,355/ha.

Table 2. Average Fixed Cost of Mendong Farming/Ha

No	Uraian	Valeu (IDR)
1	Equipment Depreciation Cost	147,531
2	Land Rental Fee	11,862,824
	Total Fixed Cost	12,010,355

Source: Processed Primary Data, 2024

Based on Table 2, the average cost of depreciation of equipment incurred by mendong farmers is IDR 147,531/ha and the average cost of land rental is IDR 11,862,824/ha. This shows that the largest average fixed cost incurred by farmers in mendong production is the average cost of land rental of IDR 11,862,824/ha

Depreciation cost of equipment is the division of the price of a tool cost used during the production process. Equipment purchases are not made every planting season, but the equipment is used until it is damaged or can no longer be used. The tools used in mendong farming activities are sickles, machetes, buckets and scales. The average depreciation of sickles with an economic life of 72 months is IDR 38,826, the average depreciation of machetes with an economic life of 72 months is IDR 18,370, the average depreciation of buckets with an economic life of 24 months is IDR 56,869 and the average depreciation of scales with an economic life of 60 months is IDR 33,466. The total average depreciation cost incurred by mendong farmers in the 3rd production period is IDR 147,531.

Land rental costs are costs incurred by mendong farmers for land used in mendong farming. Based on the results of the study, the average land rental costs incurred by mendong farmers/ha in the 3rd production period were Rp 11,862,824.

Variable Costs

Variable Costs are costs incurred by mendong farmers for the production process that depend on production results. The average total variable costs incurred by farmers for mendong farming/ha in the 3rd production period were Rp 15,434,146

Table 3. Average Variable Cost of Mendong Farming/Ha

No	Description	Total (IDR)
1	Urea Fertilizer	817,718
2	NPK Fertilize	1,320,160
3	Labor	13,296,268
	Total Variabel Cost	15,434,146

Source: Processed Primary Data, 2024

Based on Table 3, the average cost of purchasing urea fertilizer spent by mendong farmers is IDR 817,718/ha, the average cost of purchasing NPK fertilizer is IDR

1,320,160/ha and the average cost of labor wages is IDR 13,296,268/ha. This shows that the largest average variable cost spent by farmers in mendong production is the average cost of labor wages of IDR 13,296,268/ha.

The cost of purchasing urea fertilizer is the cost incurred by mendong farmers to purchase urea fertilizer. Urea fertilizer is used so that mendong stems grow tall and green. The average urea fertilizer used in the 3rd production period was 340,716 at a price of 2,400/kg and the total average purchase cost was Rp 817,718.

The cost of purchasing NPK fertilizer is the cost incurred by mendong farmers to purchase NPK fertilizer. NPK fertilizer is used to maintain the balance of nutrients in the soil so that plants can grow optimally. The average NPK fertilizer used in the 3rd production period was 507.754 kg at a price of 2,600/kg and the total average purchase cost was Rp 1,320,160

Labor wage costs are costs incurred by farmers as wages for the efforts made to produce products in the form of mendong. Costs incurred for labor start from maintenance, harvesting and post-harvest. The average labor used in the maintenance process is 38,652 HOK, the harvest process is 102,988 HOK and the post-harvest process is 50,952 HOK in the 3rd production period. The wage for 1 HOK for men is IDR 70,000/HOK and 1 HOK for women is IDR 50,000/HOK, the total average labor cost is IDR 13,296,268

Total Cost

The total cost in mendong farming is the result of the sum of all fixed costs and variable costs incurred during the mendong farming process. The average total cost of mendong farming in the 3rd production period was Rp 27,444,502/ha. The largest cost incurred in mendong farming is the average variable cost, which is Rp 15,434,147. Meanwhile, the average fixed cost incurred by mendong farmers is Rp 12,010,355. The average production cost of mendong farming in Kamulyan Village is greater than the economic analysis of mendong farming production costs according to [2], which is Rp 3,032,902/ha.

The selling price of mendong is the price of mendong paid by consumers to mendong farmers. The selling price of mendong varies based on the quality and length of the plant, the selling price of mendong ranges from IDR 450,000-IDR 650,000 per quintal, but the average selling price of mendong is IDR 576,471/quintal. The higher the selling price of mendong, the greater the income of mendong farmers. This different selling price will affect the size of the income or profit that will be obtained by mendong farmers.

The income from mendong farming is obtained by multiplying the production results by the selling price of mendong per quintal. The average production results obtained by mendong farmer respondents in the 3rd production period were 104,381 quintals and the average selling price per quintal was Rp 576,471. The total average income obtained by mendong farmers was Rp 59,632,078/ha. The average income from mendong farming in Kamulyan Village is greater than the economic analysis of mendong farming income according to [2], which is Rp 6,241,340/ha

Income is obtained from the difference between revenue and total production costs in one production period. Based on Table 4, the average total income or profit obtained by mendong farmers in the 3rd production period was Rp 32,187,576/ha. The average income of mendong farming is greater than the economic analysis of mendong farming income according to [2], which is Rp 3,208,438/ha. The income obtained by each mendong farmer in Kamulyan Village is different, from the results of the study conducted there are farmers whose income is greater with a smaller land area compared to the income of farmers with a larger land area. This is thought to occur due to the use of production factors or labor that is less efficient.

Table 4. Average Income and Total Cost of Mendong Production/Ha

No	Description	Total (IDR)
1	Average Revenue	59,632,078
2	Average Total Cost	27,444,502
	Average income	32,187,576

Source: Processed Primary Data, 2024

The Influence of Production, Production Costs and Selling Prices on Income

The analysis used to determine the effect of production, production costs and selling prices on the income of mendong farmers is multiple linear regression analysis. Before conducting multiple linear regression analysis, a model test is needed, namely the classical assumption test. The classical assumption test in the study includes the normality test, multicollinearity test and heteroscedasticity test. The three classical assumption tests have been met so that multiple linear regression analysis can be carried out.

After conducting the classical assumption test, multiple linear regression analysis was conducted with independent variables Production (X1), Production Costs (X2), Selling Price (X3) and dependent variable Income (Y) and the following equation results were obtained:

Y = -1.095x10-15 + 2.463X1 – 1.730 X2 + 0.299X3 + e

The results of the multiple linear regression equation above can be interpreted that the constant value has a negative value of -1.095x10-15. The negative sign indicates a unidirectional influence between the independent variable and the dependent variable. This shows that if all independent variables are 0 or fixed, then the income value is -1.095x10-15.

The relationship between production, production costs and selling prices to income was tested using the F test (simultaneous), the results showed that the significance value was 0.000 which means it is smaller than α = 0.05, meaning that the independent variables in this study, namely Production (X1), Production Costs (X2) and Selling Prices (X3) simultaneously have a very significant effect on the income of mendong farmers

Table 5. F Test Results

ANOVA[a]

Model	Sum of Squares		df	Mean Square	F	Sig.
1	Regression	32.285	3	10.762	451.398	.000[b]
	Residual	.715	30	.024		
	Total	33.000	33			

a. Dependent Variable: Zscore: Income

b. Predictors: (Constant), Zscore: Seling Price, Zscore: Costs Production, Zscore: Production

Source: Processed Primary Data, 2024

To measure the extent to which the ability to explain the variation of the independent variable to the dependent variable can be seen from the value of the coefficient of determination (R square).

Table 6. Value of Determination Coefficient (R2)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.989[a]	.978	.976	.15440398

a. Predictors: (Constant), Zscore: Selling Price, Zscore: Costs Production, Zscore: Production

Source: Processed Primary Data, 2024

Based on Table 6, the value of R Square is 0.978 (97.8%). This shows that Production (X1), Production Costs (X2) and Selling Prices (X3) are able to explain the income of mendong farmers by 0.978 (97.8%) and the remaining 0.022 (2.2%) is explained by factors not discussed in this study such as other production facilities

The partial influence of independent variables on dependent variables can be analyzed using the t-test by comparing the significance value with the alpha value

Table 7. t-Test Results

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.989[a]	.978	.976	.15440398

a. Predictors: (Constant), Zscore: Selling Price, Zscore: Cost Production, Zscore: Production

Source: Processed Primary Data, 2024

Based on Table 6, the value of R Square is 0.978 (97.8%). This shows that Production (X1), Production Cost (X2) and Selling Price (X3) are able to explain the income of mendong farmers by 0.978 (97.8%) and the remaining 0.022 (2.2%) is explained by factors not discussed in this study such as other production facilities.

The partial influence of independent variables on dependent variables can be analyzed using the t-test by comparing the significance value with the alpha value

Table 7. t-Test Results

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1.095E-15	.026		.000	1.000
	Zscore: Productioni	2.463	.084	2.463	29.204	.000
	Zscore: Cost Production	-1.730	.084	-1.730	-20.563	.000
	Zscore: Selling Price	.299	.028	.299	10.602	.000

a. Dependent Variable: Zscore: Income

Source: Processed Primary Data, 2024

Based on the results of the t-test (partial test) listed in Table 7, it can be seen that all independent variables have an effect on the dependent variable.

The mendong production variable has a significance value of 0.000, which is less than 0.05, which means that mendong production has a significant effect on the income of mendong farmers, with a coefficient value of 2.463, then an increase in mendong production by one unit will result in an increase in income of 2.453, assuming other variables remain constant. It can be concluded that mendong production has a positive

effect on the income of mendong farmers. This result is in line with research [6] that increasing production in vegetable commodities has a positive effect on the income of vegetable farmers in Waiheru Village, Teluk Ambon Banguala District and research [7] that increasing production in sugarcane commodities has a positive effect on the income of sugarcane farmers.

The variable cost of production of mendong has a significance value of 0.000 which is less than 0.05, which means that mendong production has a significant effect on the income of mendong farmers in Kamulyan Village, with a coefficient value of -1.730, then an increase in the cost of mendong production by one unit will result in a decrease in income of -1.730 and vice versa with the assumption that other variables remain constant. It can be concluded that the cost of mendong production has a negative effect on the income of mendong farmers in Kamulyan Village. This result is in line with research [6] that increasing production costs for vegetable commodities have a negative effect on the income of vegetable farmers in Waiheru Village, Teluk Ambon Banguala District and research [7] that increasing sugarcane production costs have a negative effect on the income of sugarcane farmers

The variable selling price of mendong has a significance value of 0.000 which is smaller than 0.05, which means that the selling price of mendong has a significant effect on the income of mendong farmers in Kamulyan Village, with a coefficient value of 0.299, then an increase in the selling price of mendong by one unit will result in an increase in income of 0.299 and vice versa assuming other variables remain constant. It can be concluded that the selling price of mendong has a positive effect on the income of mendong farmers in Kamulyan Village. This result is in line with research [8] that an increase in the selling price of coffee commodities has a positive effect on the income of coffee farmers in Wonosalam, Wonosalam District, Jombang Regency.

Conclusion and recommendation

Based on the results of the analysis and discussion, it can be concluded as follows:
The average production of mendong in Kamulyan Village is 104,381 quintals, the average production cost is IDR 27,444,502, the average selling price is IDR 576,471, and the average income of mendong farmers is IDR 32,187,576/ha in the 3rd planting period.
Simultaneously, production, production costs and selling prices affect the income of mendong farmers in Kamulyan Village. Partially, production and selling prices have a positive and significant effect, while production costs have a negative effect on the income of mendong farmers in Kamulyan Village.

Recommendation
It is necessary for farmers to make maximum efforts by providing the right and recommended fertilizer dosage, so that the resulting product has good quality, which can ultimately increase the selling price of the product which will later affect farmers' income.
Further research is needed on the causes of the decline in mendong production, especially the decline in production that occurs every May.

References

(1) Badan Pusat Statistik Kabupaten Tasikmalaya. (2021). Kabupaten Tasikmalaya Dalam Angka 2021. Badan Pusat Statistik Kabupaten Tasikmalaya.
(2) Hatta Sunanto. (2000). Budidaya Mendong. Penerbit Kanisius. Yogyakarta.

(3) Karmini. 2018. Ekonomi Produksi Pertanian. Mulawarman University Press. Samarinda.
(4) Riduwan dan Akdon 2005. *Rumus dan Data dalam Aplikasi Statistik*. Alfabeta. Bandung:
(5) Tenten Tedjaningsih, Suyudi, Hendar Nuryaman 2018. Peran Kelembagaan Dalam Agribisnis Mendong. Mimbar Agribisnis Jurnal Pemikiran Masyarakat Ilmiah Berwawasan Agribisnis. 2018. 4(2): 210-22 ttps://jurnal.unigal.ac.id/mimbaragribisnis/article/view/898/1190
(6) Imam, Ghazali. (2016). Aplikasi Analisis Multivariete dengan Program IBM SPSS 23. Semarang Badan Penerbit Universitas Dipenogoro, Semarang.
(7) Masiah, M., August, E. P., dan Izaac. T. M. (2020). Analisis faktor-faktor yang mempengaruhi pendapatan petani sayur di desa waiheru kecamatan teluk ambon baguala. Agrilan: *Jurnal Agribisnis Kepulauan*, 8(1).
(8) Rosihan, A dan Rhomsia, N. (2010). Analisis Pendapatan dan Faktor-Faktor yang
(9) Mempengaruhi Pendapatan Petani Tebu dalam Keanggotaan Suatu Koperasi. Agrise, 10 (2).Yuniar, H., Amanatuz, Z., Sri, R.T., dan Isdiana, S. (2022). Faktor-faktor yang mempengaruhi pendapatan petani kopi (Studi kasus di Desa Wonosalam, Kecamatan Wonosalam, Kabupaten Jombang). *Agriscience*, 3(2).