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Analysis Of Agroindustry Tofu In Household Scale Rambipuji District Jember Regency

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ABSTRACT

Tofu productions business is a household-scale industry that is able to compete with the large-scale agro-food industry and provide income for its producers. This research aims to: (1) calculate the size of profits in the agro-industrial sector (2)Tofu the magnitude of the efficiency of the agribusiness sector (3) Tofu the factors that affect the production in the agro-industrial sector and (4) Tofu the scale of households in the Rambipuji district of Jember. The analyses used in this study are: (1) cost analysis and profit analysis (2) cost efficiency analysis (3) Cobb-Douglass analysis; and (4) double linear regression analysis. The results of the research are: (1) The agro-industrial sector tofu the scale of households at Rambipuce Prefectures with a profitable amount of Rp. Rp 31.527,27 per production in one day, (2) the efficiency value of more than one is Rp 1,43, so it can be said that the agro-industrial industry is already efficient, (3) the positive and significant influencing factors are soybeans and gasoline, the negative and significant influence factors are dry coconut leaves, seals and labor, the positive influence factor and non-significant influence is wood, the negatively influential factor and not significant is wood scrap.

Keywords: efficiency, home scale industry, profit, tofu.

1. INTRODUCTION

Agroindustry is a series of agricultural-based agribusiness activities that are interrelated in a system of production, manufacturing, distribution, marketing and various supporting activities or services. For Indonesia as far as the production aspect of our level of independence is still quite high because most of the agroindustry products consumed by the population mainly come from domestic agroindustry. The development of agro-industry is expected to increase the growth of small industries as well as to alleviate poverty. Agroindustry is an industrial activity that utilizes agricultural products as raw materials, designs and provides equipment such as machinery and agricultural tools and creates services for these activities, in this case marketing activities. Thus groindustry includes the agricultural product processing industry, the agricultural equipment and machinery industry and the service industry. (Adisarwanto, 2005) in (Febrinova & Gunawan, 2020).

Agricultural commodities that exist so far can almost all be processed such as soybeans. Soybeans are a very popular food ingredient in the community, almost every day many people consume processed foods from soybeans, one of which is tofu. The high protein content in soybeans and also the complete nutritional content, where soybeans are the main raw material for making tofu which is needed for the ongoing production process. The income of the tofu processing business is highly dependent on the selling price of the product and the costs incurred to produce tofu, the higher the selling price of the product and the lower the cost, the higher the business profit (Antarani. Rengkung, 2019).

When viewed from its economic value, the need for tofu is very high every day. Because tofu is a delicious food for all groups, many benefits can be obtained from tofu both in terms of health and economics. The tofu-making business is considered to contribute a good income for producers because the demand for tofu never falls, thus increasing the standard of living of entrepreneurs and many of the producers want to develop their business in the future through optimal marketing (Hebingadil et al., 2019).

Opportunities and competition in the formal sector are very difficult, the ratio of available jobs to the existing workforce is no longer balanced. Therefore, one alternative is to develop economic enterprises in the community that are labor-intensive. Many forms of labor-intensive business have actually been undertaken by the community. However, due to a lack of capital or poor management, these businesses have stopped in the middle of the road. One form of labor-intensive business that has begun to be developed by many people is the Tofu household industry (Yoman. M, Mandei, 2021).

Tofu is a food that is in great demand by the community because it tastes good, besides that tofu has a protein content that is good for consumption and the price of tofu has a relatively cheap price so that various levels of society can afford to buy it. Tofu is easily available in various places ranging from traditional markets to modern markets and even around the neighborhood where many people live.

Based on data from BPS Jember Regency in 2020, Jember Regency has 31 sub-districts. There are eight sub-districts in Jember Regency that produce tofu. One of them is Rambipuji District. Based on Table 1, the largest number of tofu agro-industries is in Rambipuji District as many as 228 tofu agro-industries. The tofu agro-industry in Rambipuji

District is ranked first then followed by Jenggawah and Jombang Districts with the number of tofu agro-industries reaching 89 agro-industries. The number of tofu agro-industries in each sub-district in Jember Regency can be seen in Table 1 below.

Table 1. List of Tofu Producers in Jember Regency in 2020

No	District	Number of Agro Tofu Industry
1	Kencong	22
2	Gumukmas	-
3	Puger	-
4	Wuluhan	-
5	Ambulu	-
6	Tempurejo	-
7	Silo	24
8	Mayang	-
9	Mumbulsari	-
10	Jenggawah	89
11	Ajung	51
12	Rambipuji	228
13	Balung	-
14	Umbulsari	-
15	Semboro	-
16	Jombang	89
17	Sumberbaru	-
18	Tanggul	-
19	Bangsalsari	-
20	Panti	-
21	Sukorambi	-
22	Arjasa	-
23	Pakusari	-
24	Kalisat	-
25	Ledokombo	-
26	Sumberjambe	-
27	Sukowono	-
28	Jelbuk	2
29	Kaliwates	-
30	Sumbersari	-
31	Patrang	16

Source: (BPS Jember Regency, 2021).

Based on data from BPS Jember Regency in 2020, the tofu agroindustry in Rambipuji District is one of the dominant agroindustries. Based on Table 2. It is known that the tofu-making business is a food processing industry that has 228 business units. In general, the tofu-making business is a household industry and is in great demand by consumers from both the upper and lower classes (Fitriani, Ana Zururaida et al., 2013).

This shows that tofu-making businesses, which are generally household-scale industries, are able to survive in the midst of competition with large-scale food processing agro-industries, and it also shows that this agro-industry has been able to provide income for its producers. This can be seen from the number of tofu-making business units in Rambipuji Subdistrict. For more details, see Table 2 below:

Tabel 2. List of Industries in Rambipuji Sub-district in 2020

No	Village	Top Commodities			
		Furniture	Mats Bricks	Tofu	
1	Curahmalang	3	19	4	12
2	Nogosari	3	64	7	17
3	Rowotamtu	3	18	8	41
4	Pecoro	4	12	32	70
5	Rambipuji	15	–	3	30
6	Kaliwining	10	–	4	27
7	Rambingudam	5	–	4	16
8	Gugut	2	12	6	15
Total		45	125	68	228

Source: (BPS Jember Regency, 2021) (Processed).

In the process of tofu production, there must be various kinds of obstacles or problems. The problems faced by tofu craftsmen in Rambipuji District are in agro-industrial processing, in Rambipuji District the technology used is still relatively simple. This can be seen from the production factors in the form of tools used in the production process which are still semi-manual, namely machine and human assistance.

The production factors of the tofu agroindustry used have an important role in the continuity of tofu production. These production factors are used from the beginning to the end of tofu production. The use of tofu agroindustry production factors must be in accordance with the existing conditions in the tofu agroindustry so that it can produce good products (Muta et al., 2016).

In previous research in Jember Regency researched by (Sarjana & Syariah, 2019) is to examine only the cost of production with the full costing method, and (Muta et al., 2016) examines only the factors that influence consumer behavior of tofu businesses, while in my research examines the benefits and variable costs and fixed costs incurred and cost efficiency and also examines the factors that influence the production of tofu agroindustry in Jember Regency.

The objectives of the study were (1) to calculate the amount of profit (2) to know the amount of efficiency (3) to know the factors that affect production in the household scale tofu agroindustry in Rambipuji District, Jember Regency.

2. LITERATURE REVIEW

2.1 Agroindustry

Agroindustry comes from two words agricultural and industry, which means an industry that uses agricultural products as its main raw material or an industry that produces a product that is used as a means or input in agricultural businesses (Febrinova & Gunawan, 2020). Industries can be classified based on the number of workers and the amount of investment. Based on the number of workers, industries can be categorized into 4 groups, namely:

a. Number of workers 1-4 people for the household industry
b. Number of workers 5-19 people for small industries
c. Number of workers 20-99 people for medium industry
d. The number of workers is more or equal to 100 people for large industries.

According to (Sarjana & Syariah, 2019), agroindustry is an activity that processes materials produced from agricultural businesses in a broad sense, both from food crop agriculture, as well as non-food, livestock or fisheries. Agroindustry is an important solution to bridge consumer desires and the characteristics of agricultural products that are varied and cannot be stored. Agro-industry has a very wide range of definitions. From very soft post-harvest processing such as making salted fish that only needs preservation technology to high added value where agricultural products are extracted and combined with other products.

2.2 Soybean

Soybean (Glysine max (L) Mer.) is one type of legume that contains high vegetable protein, a source of fat, vitamins and minerals. If sufficiently available in the country, it will be able to improve community nutrition through the consumption of fresh soybeans and through the consumption of processed soybeans such as tofu, tempeh, tauco, soy sauce, milk and so on (Adisarwanto, 2008) in (Yoman. M, Mandei, 2021).

Soybeans can be processed into tempeh, tampe chips, tofu, soy sauce, milk, and others. The process of processing soybeans into various foods is generally a simple process and the equipment used is enough with tools commonly used in households, except for peeling machines, grinders, and molds. The basic ingredients for making tofu cannot be replaced with other basic ingredients. The main ingredient used is soybeans. The soybeans selected must be clean and have large seeds. Large soybean seeds make the resulting tofu product not shrink (Cahyadi, 2007) in (Antarani. Rengkung, 2019).

2.3 Tofu

Tofu is a food made from soybeans that are ground, processed and molded. Tofu is known as folk food, the various types of tofu in Indonesia are generally known by their place of manufacture, for example Sumedang tofu and Kediri tofu (Antarani. Rengkung, 2019).

How to make tofu:

1. Select clean and washed soybeans, then soak the soybeans in clean water for 8 hours (at least 3 liters of water for 1 kg of soybeans). Soybeans will expand if soaked.
2. Soaked soybeans are washed many times, if not clean enough, the resulting tofu will quickly become sour.
3. Grind the soybeans and add warm water little by little until it forms a slurry,
4. Grinding soybeans and adding warm water little by little until it is a slurry,
5. Cooking the slurry until it thickens at 700-800 C.
6. Filtering soybean porridge, soybean juice is mixed using tofu brick (Calcium Sulfate = CaSO4) as much as 1 gram or 3 ml of vinegar for 1 liter of soybean juice, while stirring slowly.
7. Molding and pressing the sediment.

2.4 Cost Theory

Costs are grouped into several types of costs according to the type of cost. Cost grouping aims to provide quality cost information for management in the context of planning, controlling and decision making. Therefore, costs need to be classified according to the purpose, namely what the costs are used for.

1. Production Costs
   The accumulation of all costs required in the production process with the aim of producing a product or goods. These costs include raw material costs, labor costs, operational costs of goods or factories, and so on.

2. Marketing Costs
   Costs that must be incurred to ensure all products are purchased by consumers. Examples of marketing costs are promotional and advertising costs incurred by the company.
3. Administrative and General Costs
   Costs used to coordinate product production and marketing activities, such as employee salaries, factory overhead, and related costs.

2.5 Profit

Profit is the main objective in opening a planned business. The greater the profit received, the more feasible the business developed. Based on production estimates and planning, it can be known at what amount of production a business makes a profit and at what amount of production the business makes a loss. Profit is the difference between total revenue and production costs according to the level of efficiency of the use of production factors at their best use. Mathematically it can be written as follows:

$\pi = TR - TC$

Description:

π = Profit

TR = Total Revenue

TC = Total Cost (Nicholson, 1991) in (Antarani. Rengkung, 2019).

2.6 Revenue

Revenue is the overall value of the results obtained from all branches of farming and farming sources that can be calculated from the results of sales, exchange, or reassessment. Revenue is the result of multiplying the amount of goods sold by the price of the goods (whose value depends on the amount of goods). Mathematically it can be written as follows:

$TR = Q \times P$

Description:

TR = Total revenue

Q = Total output/production

P = Selling price (Nicholson, 1991) in (Antarani. Rengkung, 2019).

2.7 Cost Efficiency

High revenues do not always indicate high efficiency, because it is possible that large revenues are obtained from large investments. Efficiency has the goal of minimizing production costs per unit of product which is intended to obtain optimal profits. The way to achieve this goal is to minimize overall costs by maintaining the production that has been achieved to increase production without increasing overall costs (Soekartawi et al., 1993) in (Putri et al., 2015).

Efficiency can be known by calculating the R/C Ratio. R/C Ratio is the ratio between total revenue and total cost (Hendriana, 2010). Mathematically it can be written as follows:

Description:

R = total revenue

C = total cost

$$\text{Efficiency} = \frac{R}{C} = \frac{\text{Total Revenue (Rp)}}{\text{Total Cost (Rp)}} =$$

The criteria used in determining business efficiency are:

a. R/C > 1 means that the business is efficient.
b. R/C = 1 means that the business is not yet efficient or the business is running break-even point
c. R/C < 1 means that the business is not efficient (Fitri et al., 2019).

2.8 Cobb-Douglass Production Function

According to Soekartawi (1995) in (Muhammad Yusuf, 2011), the Cobb-Douglass production function is a function or equation involving the dependent variable and two or more independent variables. The dependent variable can be written with the symbol (Y) and the independent variable can be written with the symbol (X). The Cobb-Douglass function can be written as the following equation:

Y = aX1b1X2b2X3b3....., Xnbneu

Description:

Y = explained variable

X = variable that explains

a,b = the amount to be estimated

e = error.

According to (Fitri et al., 2019) so that data can be analyzed using the Cobb-Douglas production function, the data must first be transformed into a linear form by using the natural logarithm (Ln) which can then be further processed using multiple linear regression analysis so that the equation becomes:

ln Y=ln a+b1 lnX1+b2lnX2+lnX3+e

Production function analysis is a continuation of regression analysis, which is an analysis that explains causal relationships. The Cobb-Douglass function is used to simplify the discussion. After the regression model is formed and

the Cobb-Douglass function is formed by estimating the independent variables against the independent variables (Soekartawi, 1995) in (Muhammad Yusuf, 2011).

The regression equation is analyzed to explain the causal relationship of the factors of production to the output produced. The value obtained from regression analysis is the value of t-count, F-count and the coefficient of determination (R2). The t-count value is used to statistically test whether the regression coefficient of each independent variable (Xn) used separately has a real effect or not on the independent parameter (Y):

The F-count value is used to see whether the parameters used together have a real effect on the independent parameters or whether the estimation model used is suitable for estimating the parameters in the production function. If the F-count is greater than the F-table, then together the independent parameters in production (Xi) have a real influence on production results. Conversely, if F-count is smaller than F-table, then jointly the independent parameters do not have a real effect on production.

The coefficient of determination (R2) is used to see how much diversity can be applied by the parameters to the independent parameters.

2.9 Framework of Thought

Based on the research framework as previously described, it will be sketched as follows:

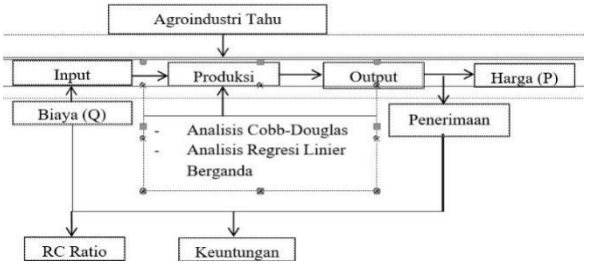

Figure 1. Schematic of Tofu Agroindustry Framework

2.10 Hypothesis

Based on the research framework, the following hypothesis is prepared:

1. It is suspected that household-scale tofu agro-industry business in Rambipuji District Jember Regency is profitable.
2. It is suspected that household-scale tofu agro-industry business in Rambipuji Subdistrict, Jember Regency is efficient.
3. It is suspected that the factors affecting the production of household-scale tofu agro-industry in Rambipuji District, Jember Regency are the amount of soybean raw materials per production, firewood, dried coconut leaves, husks, wood chips, kerosene, gasoline for soybean milling, and labor.

3. RESEARCH METHOD

The basic method used in this research is descriptive analysis. Analytical description is research that is aimed at solving existing problems by compiling data that has been collected, after which it is explained and then analyzed (Winarno, 1994).

The research was conducted in Rambipuji District, Jember Regency. The determination of the research area was done intentionally (purposefully) by considering that Rambipuji District has the largest tofu agro-industry. The research regarding the tofu agro-industry was carried out in 2021.

Sample determination using the proportional sampling method In Rambipuji sub-district, there are 228 tofu producer populations. If the sample is larger than 100 people, a precision of 5–15% is taken, which can represent the total population. The Slovin approach formula is used. Based on this formula, the total number of samples from tofu agro-industry producers is 70. Then each sample was proportioned to each village as determined by proportionate random sampling. By using the above formula, the sample of each village taken in this study is as follows:

Tabel 3. Sampling

No	Village	Population	Sample
1	Curahmalang	12	4
2	Nogosari	17	5
3	Rowotamtu	41	13
4	Pecoro	70	21
5	Rambipuji	30	9
6	Kaliwining	27	8
7	Rambingudam	16	5
8	Gugut	15	5
	Total	**228**	**70**

Source: (BPS Jember Regency, 2021).

Primary data is data obtained directly from producers by conducting interviews; secondary data is data obtained from offices or agencies related to this research, namely the Central Bureau of Statistics of Jember Regency.
The methods used to test the hypothesis in this study are:
The method of analyzing business profits a is the difference between total revenue and total costs; the method of analyzing cost efficiency is to measure the level of efficiency of the agro-industry; and the method of Cobb-Douglass function is to find out what are the factors that affect the production of household-scale tofu in Rambipuji District, Jember Regency.

Variable Definition and Measurement

1. Tofu is a food made from ground, processed, and molded soybeans expressed in units of seeds.
2. The household-scale tofu industry is an industry that processes soybean raw materials into tofu products, where the
4. production process uses a workforce of 1-4 people.
3. Respondents are household-scale tofu producers who process soybean raw materials into ready-to-market tofu. The tofu
5. produced is in the form of fried tofu and white tofu in the 2018 period.
4. Total costs are all costs used in the tofu-making business, whether actually incurred or not, which are divided into fixed costs and variable costs, which are expressed in rupiah units.
5. Variable costs are costs used in the production process that change proportionally to the amount of production quantity produced. Variable costs in the tofu industry business include raw material costs (soybeans), costs of auxiliary materials, fuel costs, packaging costs, transportation costs, electricity, and labor costs expressed in rupiah.
6. Fixed costs are costs used in the process of producing tofu whose amount is not affected by the quantity of production produced and is expressed in units of rupiah. Fixed costs in the tofu industry business include the cost of depreciation of production equipment (stoves or furnaces, soybean grinding machines, dandang, or pots, buckets, and trays) and interest costs on investment capital expressed in rupiah.
7. Revenue is the result received by tofu producers, which is the product of the number of tofu products per unit of product sold and the selling price per unit of product expressed in rupiah.
8. Profit is the difference between total revenue and total costs incurred in the process of tofu production, expressed in rupiah.
9. Business efficiency is the ratio between revenue and costs incurred by the tofu industry, expressed in numbers.
10. Soybean raw materials used by the tofu agroindustry to produce tofu are soybeans derived from grains used as raw materials for making tofu, expressed in kilograms.
11. Labor is a person who carries out tofu agro-industry activities in Rambipui Subdistrict, Jember Regency, both from within and outside the family.
12. Production factors are the main variables used directly in the tofu agro-industry production process.

4. RESEARCH RESULTS AND DISCUSSION

4.1 Characteristics of Respondents of Household Scale Tofu Agroindustry

Table 4. Identity of Respondents of Household-Scale Tofu Agroindustry in Rambipuji District in 2021

No	Identity	Unit	Value
1	Age of Respondent	th	56
2	Years of Education	th	6
3	Number of family members Soul	Jiwa	5
4	Number of Family Members Active in Production Soul	Jiwa	3
5	Labor force Soul	Jiwa	3
6	Duration of Cultivation	th	12

Source: Primary Data Processed, 2021.

4.2 Profit

The profit obtained from household-scale tofu agroindustry producers in Rambipuji District, Jember Regency is the difference received from tofu sellers with the total costs incurred by producers. The profits obtained by household-scale tofu agro-industry producers in Rambipuji District, Jember Regency are as follows:

Table 5. Profits of Household-Scale Tofu Agroindustry in Rambipuji District Rambipuji per 21.94 kg of raw materials in one day in 2021

No.	Description	Average Per Respondent (IDR)
1	Revenue	407.795,72
2	Total Cost	376.270,45
	a. Production Cost	342.699,02
	b. Marketing Cost	33.571,43
3	**Profit**	**31.527,27**

Source: Primary Data Processed, 2021.

4.3 Revenue

Table 6. Average Tofu Production and Receipts of Tofu Agroindustry Scale Households in Rambipuji District Per Production in 2021

No	Type of Production	Quantity	Average Price Rp/unit	Revenue (Rp)
1	White Tofu	1.502 biji	252,86	379.795,72
2	Tofu Dregs	8 kg	3500,00	28.000,00
Total				**407.795,72**

Source: Primary Data Processed, 2021.

4.4 Production Cost

Table 7. Average Production Costs of Household-Scale Tofu Agroindustry in Rambipuji Subdistrict Per Production in One Day in 2021

Source:

No	Description	Average Production Costs	Precentage (%)
1.	Depreciation Cost Equipment	1.953,52	0,68
2.	Building Rental Cost	2.142,86	0,75
3.	Labor Cost	55.142,86	19,28
4.	Raw Material Cost	176.491,84	61,70
5.	Electricity and Fluel Costs	50.315,73	17,59
	Total	**342.699,02**	**100**

Primary Data Processed, 2021.

4.5 Marketing Costs

Table 8. Average Marketing Costs of Household-Scale Tofu Agroindustry in Rambipuji Subdistrict Per Production in One Day in 2021

No	Description	Average Marketing Cost	Precentage (%)
1.	Transportation Cost	21.571,43	64,26
2.	Packaging Cost	12.000,00	35,74
	Total	**33.571,43**	**100**

Source: Primary Data Processed, 2021.

4.6 Total Cost

Table 9. Average Total Cost of Household-Scale Tofu Agroindustry in Rambipuji Subdistrict Per Production in 2021

No	Description	Average Cost (Rp)	Presentage (%)
1	Production Cost	342.699,02	89,50
2	Marketing Cost	33.571,43	10,50
Total		**376.270,45**	**100,00**

Source: Primary Data Processed, 2021.

4.7 Cost Efficiency

Table. 10. Cost Efficiency of Household-Scale Tofu Agroindustry in Rambipuji District Per Production in One Day in 2021

No.	Description	Average Per Respondent (Rp)
1	Revenue	407.795,72
2	Total Cost	286.046,81
3	**RC Ratio**	**1,43**

Source: Primary Data Processed, 2021

The efficiency value of the household-scale tofu agroindustry business in Rambipuji District in this study is 1.43. Based on the criteria used, this business is efficient because the efficiency value is more than one.

4.8 Cobb-Douglas production function analysis

The results of multiple regression estimation of factors affecting the production of household-scale tofu agro-industry in Rambipuji District can be seen in the following table:

Table 11. Multiple Regression Results of Tofu Agroindustry Production Factors Household Scale in Rambipuji District in 2021

Variable	Regression Coefficient	St-Error	t-count	Sig	VIF
Constant	0,823	0,260	3,167	0,002	
Soybean	0,952	0,064	14,917	0,000***	4,577
Firewood	0,015	0,074	0,203	0,840	1,841
Dried Coconut Leaves	-0,215	0,073	-2,921	0,005***	1,470
Husk	-0,092	0,043	-2,138	0,036**	1,152
Wood Chips	-0,022	0,052	-0,419	0,676	8,306
Gasoline	0,307	0,097	3,151	0,003**	7,004
Tenaga Kerja	-0,099	0,0451	-1,926	0,059***	1,016
R^2	95,4%				
R-Sq (Adj)	94,9%				
F-count	183,577				
F-table	2,09				

Note *,**,*** = significant at 95% confidence level

Regression estimation for household-scale tofu production did not result in multicollinearity between variables. The seven variables used in estimating household-scale tofu production produced VIF (Variance Inflation Factor) values that were less than 10, so there was no multicollinearity. The absence of a very close correlation between variables will get a better estimate.

The resulting dermination coefficient (R2) of household-scale tofu agroindustry production in Rambipuji District is worth 95.4%. The F test obtained from the model amounted to 183.577 much greater than the F table which is 2.09 It shows that the model statistics can have a significant effect at the 95% confidence level. This means that the production factors of the tofu agroindustry in the form of soybeans, firewood, dried coconut leaves, husks, wood chips, kerosene, gasoline for grinding, and labor together affect the production of tofu agroindustry produced.

The effect of production factors partially for this model can be tested with a t-test. If the calculated t value is greater than the t table value of 1.999 then the production factors have a significant effect on the independent variables or output. It can be concluded that the variables of soybean and gasoline for soybean milling have a significant effect on the production of tofu agro-industry. The variables of firewood, dried coconut leaves, husks, wood chips, and labor have an insignificant effect on tofu production, using multiple linear regression equation models, the regression coefficient values are obtained as follows:

$$\text{Ln } Y = \text{Ln } 0{,}823 + 0{,}952 \text{ Ln } (X_1) + 0{,}015 \text{ Ln } (X_2) - 0{,}215 \text{ Ln } (X_3) - 0{,}092 \text{ Ln } (X_4) - 0{,}022 \text{ Ln } (X_5) + 0{,}307 \text{ Ln } (X_6) - 0{,}099 \text{ Ln } (X_7)$$

$$Y = 9{,}15\ X_1^{0{,}952}\ X_2^{0{,}015}\ X_3^{-0{,}215}\ X_4^{-0{,}092}\ X_5^{-0{,}022}\ X_6^{0{,}307}\ X_7^{-0{,}099}$$

4.9 Analysis of Production Factors Affecting the Tofu Agro-Industry

1. Soybean (X1)

The average use of soybeans in tofu production amounted to 21.94 kg per production process in one day. The soybean factor has a positive regression coefficient value, which is 0.952, meaning that every increase in the use of soybeans in the production process by one percent will increase tofu production by 0.952%. Soybeans have a positive regression coefficient value because soybeans are the raw material for making tofu where the more soybeans used, the more tofu production is produced. The calculated t-value of 14.917 is greater than the t-table of 1.999, meaning that soybeans have a significant influence on the production of tofu **produced at the 95% confidence level.**

2. Firewood (X2)

The positive regression coefficient value shows 0.015. This value means that every increase in the use of firewood in tofu production will cause an increase in the value of tofu production by 0.015%. The value is positive because firewood has long-lasting properties when burned and does not run out quickly so that the production process is more optimal. The calculated t-value of 0.203 is smaller than the t-table of 1.999, with a significance value of 0.840 greater than 0.05, which means that firewood has an insignificant effect on the production of household-scale tofu agroindustry at the 95% confidence level.

3. Dried Coconut Leaves (X3)

The average use of dried coconut leaves in tofu production is 0.47 bunches per production, or it can be interpreted that the use of dried coconut leaves in production does not reach one bunch. The regression coefficient value shows that the coefficient value is negative with a value of -0.215, meaning that every increase in the use of dried coconut leaves by one percent will cause a decrease in tofu production by 0.215%. The coefficient is negative because dried coconut leaves are flammable and run out quickly resulting in the making of soybean porridge is less than optimal therefore it can slow down the process of making soybean porridge so that the tofu juice produced is not too much and reduce the amount of tofu produced. The calculated t value of - 2.921 is greater than t table 1.999 with a significance value of 0.005, which means that dried coconut leaves have a significant effect on the production of tofu produced with a confidence level of 95%.

4. **Husk (X4)**

The regression coefficient value shows a negative elasticity value, which is -0.092. The value is negative which means that every addition of husk to the production of tofu by one percent will result in a decrease in tofu production by 0.092%. This is thought to be because the non-flammable fuel of the husk can slow down the process of making soybean porridge so that the tofu juice produced is not too much and reduces the amount of tofu produced. The calculated t value of husk is -2.138 much greater than t table 1.999 with a significance value of 0.036, meaning that husk has a significant effect on tofu production with a confidence level of 95%.

5. **Wood Chips (X5)**

The regression coefficient value shows a negative elasticity value of -0.022. The value is negative which means that every additional use of wood chips by one percent in tofu production will cause a decrease in the amount of tofu produced by 0.022%. The calculated t value of chips is -0.419 smaller than t table 1.999 with a significance value of 0.676 which means that wood chips do not have a significant effect on tofu production with a confidence level of 95%.

6. **Gasoline for Soybean Grinding (X7)**

The regression coefficient value shows 0.307. This value shows a positive coefficient value, which means that each addition of gasoline by one percent will increase tofu production by 0.307%. This is because the gasoline used for soybean grinding machines will increase following the amount of soybeans to be produced, so the amount of tofu produced will increase. The t-count value of gasoline is 3.151 much greater than t table 1.999 with a significance value of 0.002 which means that gasoline for soybean milling has a significant effect on tofu production with a confidence level of 95%.

7. **Labor (X8)**

The regression coefficient value of the labor variable is -0.099, meaning that every one percent addition per production process will reduce tofu production by 0.098%. This is because too much labor capacity results in the wages spent by producers will increase, and has an impact on reducing the amount of raw materials produced so that the amount of tofu produced by producers will decrease. The calculated t value of -1.926 is greater than the t table, namely 1.999 with a significance value of 0.059, which means that the labor variable has no significant effect on tofu production with a confidence level of 95%.

5. CONCLUSIONS

Based on the research conducted on household-scale tofu agro-industry in Rambipuji District, conclusions can be drawn:

1. Agroindustry tofu household scale in Rambipuji District Jember Regency is said to be profitable, with a profit of Rp 31,527.27 per production in one day.
2. Agroindustry tofu household scale in Rambipuji District has been efficient, with a RC Ratio value of more than one, namely
3. RC Ratio value of more than one, which is 1.43.
4. The production factors that significantly influenced were soybeans, dried coconut leaves, husks, gasoline for
5. The production factors that significantly influence are soybeans, dried coconut leaves, husks, gasoline for grinding soybeans, and labor.

6. SUGGESTIONS

It is necessary to reduce fuel in the form of husks, dried coconut leaves, and wood chips because these fuels can reduce the amount of tofu produced by producers. The reduction of fuel can be replaced by the addition of fuel in the form of firewood. This is because firewood is durable, does not run out quickly when burned, and is hotter than other fuels resulting in a faster production process and producing more soybean juice.

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