

ADDED VALUE OF SOYBEAN INTO TEMPEH CHIPS IN KEDUNGJENAR HOME INDUSTRY CENTRE, BLORA REGENCY

Rizqi Ragil Ayuningtyas^{*1}, Titik Ekowati^{*}, Wahyu Dyah Prastiwi^{*}

^{*}Agribusiness Major, Faculty of Animal and Agricultural Sciences, Diponegoro University
Jl. Prof Soedarto 50275 Semarang, Central Java, Indonesia

Article history:

Received
16 September 2022

Revised
17 October 2022

Accepted
21 November 2022

Available online
30 November 2022

This is an open access article under the CC BY license (<https://creativecommons.org/licenses/by/4.0/>)



Abstract: The study aims to describe the characteristics of the home industry, analyze the income of the home industry, and analyze the added value of soybeans from primary products (soybeans) into processed products of tempeh chips. The research was conducted in Kedungjenar Home Industry Centre, Blora Regency, Central Java. The research method used was the census method by sampling saturated with 14 home industries of tempeh chips that process tempeh chips from soybeans as samples. Data were collected by observation and interview with a structured questionnaire. The analytical method used was descriptive analysis, cost analysis, revenue analysis, income analysis, and Hayami's added value analysis. Results showed that the characteristic of the tempeh chips home industry consist of the status is the main business, raw materials are obtained from shops, capital is personal fully funded, and an average labor of 4 people. The total revenue and income of tempeh processing are IDR8,160,000/month and IDR3,556.045/month, respectively. While tempeh chips are IDR21,133,000/month and IDR12,115,779/month, respectively. The added value of tempeh is IDR16,130/month while the added value of tempeh chips is IDR20,990/month. Therefore, the added value of tempeh chips is greater than the added value of tempeh. The added value ratio for tempeh chips is classified as high (ratio > 40%) and is feasible to work on.

Keywords: Hayami method, income, production cost, profit, revenue

Abstrak: Penelitian bertujuan untuk mendeskripsikan karakteristik home industry, menganalisis biaya, penerimaan, pendapatan home industry, serta menganalisis nilai tambah kedelai dari produk primer kedelai menjadi produk olahan keripik tempe. Lokasi penelitian yaitu di Sentra Keripik Tempe Kedungjenar Jalan Barito, Kelurahan Kedungjenar, Kabupaten Blora, Jawa Tengah. Metode penelitian yang digunakan adalah sensus dengan pengambilan sampel secara sampling jenuh dengan 14 home industry keripik tempe yang mengolah keripik tempe sejak dari kedelai sebagai sampel. Pengumpulan data dilakukan dengan observasi dan wawancara menggunakan kuesioner. Metode analisis yang digunakan adalah analisis deskriptif, analisis biaya, analisis penerimaan, analisis pendapatan dan analisis nilai tambah Hayami. Penelitian menunjukkan bahwa home industry keripik tempe memiliki karakteristik antara lain status home industry usaha utama, hal yang mendasari usaha didirikan berasal dari keinginan sendiri dan turun temurun dari orang tua, bahan baku diperoleh dari toko, modal diperoleh dari modal sendiri, dan memiliki tenaga kerja rata-rata 4 orang. Penerimaan dan pendapatan pengolahan tempe per bulan berturut-turut sebesar Rp8.160.000,00 dan Rp3.556.045,00 sedangkan keripik tempe Rp21.133.000,00 dan Rp12.115.779,00. Nilai tambah yang dihasilkan home industry keripik tempe dalam proses pembuatan tempe sebesar Rp16.130,00 sedangkan nilai tambah dalam proses pembuatan keripik tempe sebesar Rp20.990,00 dimana nilai tambah keripik tempe lebih besar dibandingkan nilai tambah tempe. Besarnya nilai tambah home industry keripik tempe tergolong tinggi (rasio >40%) dan layak untuk diusahakan.

Kata kunci: biaya produksi, keuntungan, metode Hayami, pendapatan, penerimaan

¹ Corresponding author:
Email: rizqiayuu@gmail.com

INTRODUCTION

Agricultural commodities generally have perishable due to temperature, weather, moisture content, and microbial activity. This causes agricultural commodities to be directly consumed or processed first to extend their shelf life. From an economic point of view, processing agricultural products can increase added value, namely, increase the durability of agricultural commodities and provide benefits for processors. Agroindustry is an industry that processes agricultural products into semi-finished products or final products. The processing efforts carried out by the agro-industry aim to produce added value which is then positively correlated to the profits and income of agro-industry actors. The process of processing agricultural commodities into secondary to tertiary processed products continues to be pursued to increase the added value of the resulting product because the most effective way that can be done to increase the added value of an agricultural commodity is to link agriculture with the processing industry. If agriculture only stops as a cultivation activity (on farm agribusiness), then the added value generated will be relatively small. Agricultural added value will increase if it goes through further processing or activities in the downstream sector (off-farm agribusiness) which produces various processed products. Processing soybeans into tempeh chips is one example. The existence of this process produces a higher added value than only processing soybeans into tempeh (Hendriawan et al. 2020).

Blora Regency is an area in Central Java Province that has a special home industry engaged in the agricultural product processing sector. Agricultural products that are mostly cultivated by the people of Blora Regency are tempeh chips which are tertiary products from soybean processing. The number of tempeh chip entrepreneurs currently developing in Blora Regency is 87 entrepreneurs (BPS, 2020). According to BPS Blora Regency, the area of soybean harvested in Blora Regency is 3,934 ha with a production of 7,376 tons and productivity of 18.75 quintals/ha. This makes Blora Regency the second place that has the highest soybean productivity in Central Java after Grobogan Regency (BPS Provinsi Jawa Tengah, 2018). The high productivity of soybeans in Blora Regency

should be utilized optimally so that nothing is wasted. Kedungjenar home industry of tempeh chips centre, which is located on Jalan Barito, Kedungjenar Village, makes the area famous as a centre for tempeh chips with 40 home industry units, they enough to absorb soybean production because a home industry requires approximately 4.5 tons of soybeans/year. The owner's home industry for tempeh chips, especially in the Kedungjenar Tempeh Chip Centre, continues to try to run the industry in the hope that this business can meet daily needs, and soybean agroindustry has the potential to be developed. This business has mostly run for generations and is used as the main source of income for the majority of home industry tempeh chips in the Kedungjenar Tempeh Chips Centre.

Previous research mostly only analyzes added value into secondary products, for example from soybeans to tempeh or tempeh to tempeh chips. Previous research has the result that there is a risk of possible losses due to a small amount of output (Mar'atisholikhah et al. 2013). The other research comparing the added value of 3 different home industries, the results reveal that one out of 3 home industries is not feasible because it has an R/C ratio value of less than one (Yulianti & Prihtanti, 2020). Researchers provide novelty in this study by developing the objectives of previous research. The development purpose of the research to be carried out is to analyze descriptively the characteristics of the home industry tempeh chips. The research sample used was standardized, from the home industry population of tempeh chips which were processed from soybeans into tempeh, then tempeh was processed into tempeh chips. The calculation is carried out until it becomes a tertiary product, not only analyzing the added value of tempeh into tempeh chips but also analyzing the added value of soybeans into tempeh chips.

This study aims to analyze the added value of soybeans in tempeh chips, while the specific objectives are to analyze the characteristics of the home industry, analyze production costs, revenues, and incomes and analyze the added value of soybeans in processed tempeh chips at the Kedungjenar Tempeh Chips Centre, Blora District, Blora Regency. The results of this study are expected to increase the added value for the home industry of tempeh chips.

METHODS

The research was conducted from December 15, 2021 – January 17, 2022. The research location is on Jalan Barito, Kedungjener Village, Blora Regency, Central Java. method purposive the research location was determined based on the consideration that the Kedungjener Tempeh Chips Centre is the only tempeh chip-producing centre in Blora District and the Kedungjener Tempeh Chips Centre is the largest tempeh chip-producing area in Blora Regency with the home industry of 40 units. Criteria home industry used as research population were standardized purposively with the consideration home industries were taken from processing soybeans into tempeh, then tempeh was processed into tempeh chips at the Kedungjener Tempeh Chips Centre, Blora Regency. The sampling method used is the sampling saturated sampling or census. The data collection method in this study used interviews whose questions were based on an open questionnaire and observation.

Cost Analysis

Production costs are sacrifices used in the production process to produce products that are measured in money. Production costs in the tempeh agroindustry are the sum of the fixed and variable costs incurred (Purnama et al. 2017). To calculate the production cost of tempeh chips agroindustry, the general formula according to Soekartawi is used, as follows:

$$TC = TVC + TFC$$

Information: TC (Total Cost (IDR/production process)); TVC (Total Variable Cost (IDR/production process)); TFC (Total Fixed Cost (IDR/production process)) (Hendriawan et al. 2020).

Equipment depreciation costs are calculated by(the straight-line method), as follows:

$$D = C - NS : UL$$

Description: D (Equipment Depreciation Value (IDR/production process)); C (Equipment Purchase Price (IDR/unit)); NS (20% salvage value of the purchase price (IDR/unit/year)); UL (Tool Life (years)) (Hendriawan et al., 2020).

Revenue Analysis

This analysis was used to determine the amount of revenue received by the owner of tempeh chips. The revenue from the tempeh chips agroindustry is obtained from all the products produced in the soybean processing agro-industry business activities. To calculate gross income, that is:

$$TR = Y \cdot Py$$

Information: TR (Total Revenue / Total Revenue (IDR/production process)); Y (Quantity Production (kg/production process)); Py (Production price (IDR/kg)) (Suratiah, 2015).

Income Analysis

Income analysis used to determine the amount of income received by tempeh chips producers in the home industry of Kedungjener Tempeh Chips Centre, Blora District, Blora Regency. Income analysis used the general formula (Suratiah, 2015) as follows:

$$\text{Income analysis} = Y \cdot Py - (X_1 \cdot Px_1 + X_2 \cdot Px_2 + \dots + D$$

Information: Net (production revenue (IDR/production process)); Y (Production (kg/production process)); Py (Production price used (IDR/production process)); X1 (Amount of raw materials (kg/production process)); Px1(Price of raw materials (IDR/kg)); X2 (Amount of supporting materials (kg/production process)); Px2 (Price of supporting materials (IDR/production process)); D (Equipment depreciation (IDR/production process)).

Added Value Analysis

The value-added analysis is used to determine the added value of the tempeh chips agroindustry. In this study used a value-added analysis of the Hayami model. The calculation of value-added analysis using the Hayami model has several stages of analysis that include several variables. These variables include production (output), raw materials (input), workers, raw material prices, product prices, labor wages, and the number of inputs used Added value analysis using the Hayami method generates added value received in each element (Pamungkassari et al. 2018). The detail of calculation framework for Hayami method are listed in Table 1.

Table 1. Calculation framework for hayami added value analysis

| No | Variable | Value |
|------|---|-----------------------------|
| I. | Output, Input, and Price | |
| 1 | Output (kg) | (1) |
| 2 | Input (kg) | (2) |
| 3 | Workers (Working Day) | (3) |
| 4 | Conversion Factors | (4) = (1) : (2) |
| 5 | Labor Coefficient (Working Day/kg) | (5) = (3) : (2) |
| 6 | Prices Output (IDR) | (6) |
| 7 | Labor Wages (IDR/Working Day) | (7) |
| II. | Revenue and Profit | |
| 8 | Raw Material Price (IDR/kg) | (8) |
| 9 | Contribution Inputs (IDR/kg) | (9) |
| 10 | Value Output (IDR/kg) | (10) = (4) x (6) |
| 11 | a. Added Value (IDR/kg) | (11a) = (10) – (9) – (8) |
| | b. Added Value Ratio (%) | (11b) = (11a) : (10) x 100 |
| 12 | a. Labor Income (IDR/hour) | (12a) = (5) x (7) |
| | b. Labor Share (%) | (12b) = (12a) : (11a) x 100 |
| 13 | a. Profit (%) | (13a) = (11a) – (12a) |
| | b. Profit Rate (%) | (13b) = (13a) / (11a) |
| III. | Retribution for the Owner of Production Factors | |
| 14 | Margin (IDR/kg) | (14) = (10) – (8) |
| | a. Labor Income (%) | (14a) = (12a) : (14) x 100 |
| | b. Contribution Inputs (%) | (14b) = (9) : (14) x 100 |
| | c. Entrepreneur's Profit (%) | (14c) = (13a) : (14) x 100 |

Source : Hayami in Evalia et al. (2012)

A classification that the home industry of tempeh chips provides added value, then the following criteria are used (Hayami in Apriyani et al. 2020): $VA > 0$ (positive value), the processing of soybeans into tempeh chips can provide added value; $VA = 0$ (negative value), the processing of soybeans into tempeh chips has not been able to provide added value.

The next calculation is carried out if the added value calculation produces a positive value (processed tempeh chips have added value), classification can be carried out (Hayami in Rahmi and Trimo, 2019) as follows: The added value ratio is low if it has a percentage of < 15 percent; The added value ratio is moderate if it has a percentage of $15-40\%$; High added value ratio if it has a percentage $> 40\%$.

Agroindustry can transform agricultural outputs into agro-industry inputs. Agricultural output that cannot be absorbed by the market can still be used as industrial raw materials, which means that the low selling price of soybeans is not at risk of being wasted or rotten. Processing soybeans into tempeh chips is a form of mutually beneficial collaboration between soybean farmers and the home industry of tempeh chips and their consumers. The increase in the company's revenue is due to the added value of the products produced and the remuneration of labor involved in the agro-industry. Value added can be calculated and analyzed using Hayami's value added analysis method, equipped with cost analysis, revenue analysis, and income analysis. Research on the analysis of the added value of soybeans into processed products needs to be carried out to provide recommendations in the form of information on the amount of added value for the tempeh chips home industry and can be a further consideration in the development of the home industry.

RESULTS

Characteristics Home Industry

Business characteristics have a major influence on the sustainability of a business, including small and medium industries. Several characteristics of agro-industry businesses that affect business sustainability, namely the length of business and capital (Hia and Charina, 2021). The following are the characteristics of the home industry in the Kedungjenar Tempeh Chips Centre.

Age of respondents

Owners of home industry tempeh chips in the Kedungjenar Tempeh Chips Centre is classified as productive, with an average of 41–50 years. The productive age of the workers is in the range of 15–64 years (Putri and Setiawina, 2013). The use of workers who are still of productive age will be very beneficial because they still have the best physical and psychological abilities to help develop the business.

Educational level

The majority of home industry tempeh chips in the research location are high school graduates. The final level of education achieved by a person can affect aspects of the level of knowledge, mindset, attitude, and way of making decisions (Putri, 2020).

Duration of business

The duration of business is the length of time for owners of tempeh chips home industry in running their business. The results showed that the majority of tempeh chips business experience in the home industry at the Kedungjenar Tempeh Chips Centre was 11–20 years old. Owner of tempeh chip home industry already have sufficient experience based on the length of the business run. The success of an agro-industry business is not only determined by the level of education but is also determined by its business experiences (Soehyono et al. 2014).

Home industry itatus

The home industry business run by the respondent has the status of a main business, which means that the tempeh chips home industry is the main source

of income for home industry owners. The thing that underlies the establishment of a home industry for tempeh chips is divided into two, which are based on their own wishes and have been passed down from generation to generation from the family.

Raw materials

The raw materials used by the home industry are obtained by buying at the soybean supply store around the home industry. Home industry owners prefer to buy soybean raw materials in stores because the quality of raw materials in stores is better maintained and their availability is more guaranteed than buying directly from soybean farmers.

Capital

Home industry owners in starting their business mostly use personal capital. The initial capital of the owner of the tempeh chips industry in starting his business is ± IDR3,000,000.00 – IDR10,000,000.00. This amount of capital was used in the range of 1972–2012 in starting his business.

Workers

The average workers of the tempeh chips home industry is 4 people, the majority of whom come from workers in the family. There are also workers outside the family who come from neighbors around home industry owners. According to the classification, the home industry has a workforce of 1–4 people (Lembaga Pengembangan Perbankan Indonesia, 2015).

Cost Analysis

Cost is a sacrifice value that must be done to carry out production. Details of fixed costs and variable costs in the home industry of tempeh chips in the tempeh-making process are listed in Table 2. The total fixed costs incurred by the home industry in the tempeh-making process are IDR25,355.00/month in the form of tool depreciation. This fixed cost will not change even if the number of production changes. Saputra et al. (2016) stated that fixed costs are costs whose amount does not change for each unit of goods produced. The total variable costs incurred for 1 month of the tempeh production process in the home industry tempeh chips is IDR4,578,600.00 which consists of the purchase of raw materials for soybeans of 379.6 kg, which is

IDR4,175,600.00, the purchase of two packs of yeast, IDR12,000.00. Ten bundles of firewood IDR60,000.00, purchase of two packs of plastic IDR10,000.00 and labor wages of IDR375,000.00.

Details of the fixed costs and variable costs in the home industry of tempeh chips in the process of making tempeh chips are listed in Table 3. The total fixed costs incurred by the home industry in the process of making tempeh chips are based on Table 3 of IDR35,321.00/month in the form of depreciation of tools and equipment. tax per month is IDR1,500.00 so the total fixed costs incurred are IDR36,821.00. This fixed cost will not change even if the number of production changes. Saputra et al. (2016) stated that fixed costs are costs whose amount does not change for each unit of

goods produced. The total variable costs incurred for one month of the tempeh production process in the home industry tempeh chips are IDR9,017,221.00 which consists of the purchase cost of raw materials (tempeh) 200 kg of IDR3,400,000.00 for the purchase of 204.4 liters of cooking oil, IDR3,679,200.00 purchase of various spices for tempeh chips (rice flour, tapioca flour, garlic, flavoring, salt, etc.) IDR443,200.00 purchase of 16 gas cylinders 3 kg IDR320,000.00 purchase of five pack plastic packaging IDR125,000.00 for other costs IDR25,000.00 and labor wages of IDR988,000.00. This variable cost is a cost whose amount will vary according to the number of products produced. Herdiyandi et al. (2016) who states that variable costs are cost elements that vary directly with the units produced.

Table 2. Total costs analysis in the tempeh making process

| Information | Amount | Total Total (IDR/month) |
|------------------------|--------|-------------------------|
| Fixed Cost | | |
| Depreciation | | 25,355 |
| Total Cost Fixed | | 25,355 |
| Variable Cost | | |
| Soybean (kg) | 379.6 | 4,175,600 |
| Yeast (bks) | 2.0 | 12,000 |
| Firewood (bundled) | 10.0 | 60,000 |
| Plastic (pack) | 2.0 | 10,000 |
| Labor Wage | | 375,000 |
| Total Variable Cost | | 4,578. 600 |
| Total Production Costs | | 4,603,955 |

Table 3. Total costs analysis in the process of making tempeh chips

| Information | Amount | Total (IDR/month) |
|---|-----------|-------------------|
| Fixed costs of equipment | | |
| Depreciation | | 35,321 |
| Taxes | | 1,500 |
| Total fixed costs | | 36,821 |
| Variable Costs | | |
| (box) | 200.0 | 3,400,000 |
| Cooking oil (liters) | 204.4 | 3,679,200 |
| Seasoning (flour, onion, flavor, etc.) | | 443,200 |
| Gas (tube) | 16.0 | 320,000 |
| Packaging (pack) | 5.0 | 125,000 |
| Other costs-others (fill in staples, replace slicing knife, transportation) | | 25,000 |
| Labor wages | | 988,000 |
| Variable costs | | 8,980,400 |
| Total production costs | 9,017,221 | |

Process of making tempeh in the home industry of tempeh chips gets a total revenue of IDR8,160,000.00/month, where this revenue is obtained from the product of the total output of 480 kg of tempeh multiplied by the selling price of tempeh of IDR17,000.00 per box of tempeh. Meanwhile, the total revenue from the home industry of tempeh chips in the manufacture of tempeh chips is IDR21,133,000.00 which is obtained from the product of the total output of tempeh chips as much as 3,019 packs with the selling price per pack of IDR7,000.00. Maryam et al. (2020) state that total revenue can be known from the acquisition of output or the amount of production multiplied by the selling price output. Based on Table 4. it can also be seen that the revenue generated by the home industry of tempeh chips from the sale of tempeh chips is greater than the revenue from the sale of tempeh.

This the income obtained by the home industry the tempeh chips. Details of the income of the home industry in the Kedungjenar Tempeh Chips Centre are listed in Table 5. The total income earned by the home industry from making tempeh based on Table 5 is IDR3,556,045.00/month where this income is obtained from receipts from the sale of tempeh. amounting to IDR8,160,000.00 which has been deducted by production costs of IDR4,603,955.00 so the profitability value is 77.23%. The total income earned by the home industry of tempeh chips from making tempeh chips is IDR12,115,779.00 where this income is obtained from the proceeds of selling tempeh of IDR21,113,000.00 which has been deducted by production costs of IDR9,017,221.00. So that the profitability value of 132.36% is obtained. Pramayang et al. (2020) stated that income is the result of the subtraction of revenue (revenue) with total cost (total cost). Based on Table

5. it can also be seen that the income and profitability generated by the home industry of tempeh chips from the sale of tempeh chips are greater than the income and profitability from the sale of tempeh.

Added-value analysis

Added-value according to Arianti and Waluyati (2019) has the meaning of an added value to a product or commodity because a product or commodity undergoes processing, transportation, or storage in production. The added value can be seen from two sides, namely the added value for processing and the added value for marketing, for this study only looks at the added value for the processing side. The research focused on the added value of making tempeh and tempeh chips. The results of the calculation of the added value of soybeans in the manufacture of tempeh and tempeh chips are listed in Table 6 and Table 7.

The home industry of tempeh chips in one month of tempeh production is based on the analysis of the calculation of added value in Table 6. The average need for soybeans is 379.6 kg with a price per kg of soybeans of IDR11,000.00 to produce 960 kg of tempeh with a selling price of IDR17,000.00/kg. The wage of labor is IDR38,000.00 with an average number of working hours for one production process of 8 hours. Daily Worker (Working Day) is 58/month. A comparison of the amount of output and input will produce a conversion factor value of 1.89, which means that processing one kg of soybeans will produce 1.89 kg of tempeh. The labor input divided by the raw material input will produce a labor coefficient of 0.15, which means that processing one kg of soybeans requires 0.15 Working Day.

Table 4. The analyst is home industry tempeh chips

| Information | Amount of Output | Price (IDR) | Receipt (IDR/month) |
|---------------------|------------------|-------------|---------------------|
| Making Tempeh | 480 boxes | 17,000 | 8,160,000 |
| Making Tempeh Chips | 3019 | 7,000 | 21,133,000 |

Table 5. Income analysis home industry tempeh chips

| Information | Revenue (A) (IDR/month) | Production Costs (B) (IDR/month) | Income (C=AB) (IDR/month) | Profitability (C/ BX100%) (%) |
|---------------------|----------------------------|-------------------------------------|------------------------------|----------------------------------|
| Making Tempeh | 8,160,000 | 4,603,955 | 3,556,045 | 77.23 |
| Making Tempeh Chips | 21,133,000 | 9,017.221 | 12,115,779 | 134.36 |

Table 6. Analysis of added value of soybeans in the process of making tempeh

| Variable | Value |
|--|-----------|
| I. Output, Input and Price | |
| Output (pcs) | 960,00 |
| Input (kg) | 379,60 |
| Workers (working day) | 58,00 |
| Conversion factor | 1,89 |
| Labor Coefficient (working day/kg) | 0,15 |
| Output price (IDR) | 17.000,00 |
| Average wage for workers per working day (IDR/production hour) | 38.000,00 |
| II. Revenue and Income | |
| Price of raw materials (IDR/kg) | 11.000,00 |
| Other input contributions (IDR/kg) | 5.000,00 |
| Output value (IDR/kg) | 32.130,00 |
| a. Added value (IDR/kg) | 16.130,00 |
| b. Additional value ratio (%) | 50,20 |
| a. Worker's allowance (IDR/jam) | 5.700,00 |
| b. Workers share (%) | 35,33 |
| a. Income (IDR/kg) | 10.430,00 |
| b. Income level (%) | 32,46 |
| III. Remuneration for the owner of production factors | |
| Margin (IDR/kg) | 21.130,00 |
| a. Labor income (%) | 26,97 |
| b. Other input contributions (%) | 23,66 |
| c. Company income (%) | 49,36 |

The added value obtained from the processing of one kg of soybeans into tempeh is IDR16,130.00 which is obtained from the result of reducing the value of the product minus the input price of raw materials minus the contribution of other inputs. The added value ratio obtained is 50.20%, which means that each processing of soybeans into tempeh provides an added value of 50.20% of the product value. The added value is quite high. This is by the opinion (Hayami in Rahmi and Trimo, 2019) which states that there are three indicators of the added value ratio, namely: Added value ratio < 15%, then the added value is low, The added value ratio is 15–40%, then the added value is classified as moderate, Added value ratio > 40%, then the added value is high.

The added value still includes gross added value because it still contains labor income of IDR5,700.00 which is obtained from the labor coefficient multiplied by the labor wage. The analysis also produces a percentage of the labor share of 35.33%. Darmawan et al. (2018) state that added value is obtained from

reducing the value of the product with the price of raw materials and the value of other inputs. The added value obtained is still gross added value because it has not been deducted by employee benefits. The profit obtained from processing soybeans into tempeh is IDR10,6430.00/kg with a percentage level of 32.46%. This is the opinion of Andani et al. (2015) who states that profit is the difference between added value and labor benefits. Thus, it can be said that these benefits include the net profit received by the home industry of tempeh chips in the tempeh-making process.

The home industry in the tempeh chips production process is by the analysis of the added value calculations shown in Table 7. Each month the production cycle requires an average of 400 kg of tempeh raw materials. The purchase price of raw materials per kg of tempeh is IDR17,000.00 and will produce 3019 pcs of tempeh chips with a selling price of IDR7,000.00/kg. The wage of labor is IDR38,000.00 with an average number of working hours for one production process of 8 hours. Daily Worker (Working Day) is 58/month.

Table 7. Analysis of added value of soybeans in the process of tempeh chips

| Variabel | Value |
|--|-----------|
| I. Output, Input and Price | |
| Output (pcs) | 3.019,00 |
| Input (kg) | 400,00 |
| Workers (Working day) | 58,00 |
| Conversion factor | 7,50 |
| Labor coefficient (Working day/kg) | 0,14 |
| Output price (IDR) | 7.000,00 |
| Average wage for workers per working day (IDR/production hour) | 38.000,00 |
| II. Revenue and Income | |
| Price of raw materials (IDR/kg) | 17.000,00 |
| Other input contributions (IDR/kg) | 9.000,00 |
| Output value (IDR/kg) | 52.500,00 |
| a. Added value (IDR/kg) | 26.500,00 |
| b. Additional value ratio (%) | 50,47 |
| a. Worker's allowance (IDR/jam) | 5.510,00 |
| b. Workers share (%) | 20,79 |
| a. Income (IDR/kg) | 20.990,00 |
| b. Income level (%) | 39,98 |
| III. Remuneration for the Owner of Production Factors | |
| Margin (IDR/kg) | 35.500,00 |
| a. Labor income (%) | 15,52 |
| b. Other input contributions (%) | 25,35 |
| c. Company income (%) | 59,12 |

A comparison of the number of outputs and inputs will produce a conversion factor value of 7.5, which means that everyone kg of soybeans produces 7.5 pcs of tempeh chips. The input of labor divided by the input of raw materials will produce a labor coefficient of 0.175, which means that each processing of one kg of soybeans requires 0.175 Working Day. The added value obtained is IDR26,500.00 with a percentage rate of 50.47%. This added value is obtained from the reduction in the value of the product minus the input price of raw materials minus the contribution of other inputs. The added value is quite high. (Darmawan et al. 2018) stated that there are three indicators of the added value ratio, the added value ratio >40% indicates that the added value is high. Labor income is obtained from the coefficient of labor multiplied by labor wages and the result is IDR5,510.00 with a percentage of 20.79%. The profit earned is IDR20,990.00 with a percentage rate of 39.98%. According to Arianti and Waluyati (2019) value added analysis is used to measure how much service is given to the owners of production factors and the extent to which raw materials after treatment experience a change in value, and it can be seen that the production process that affects it can provide added value.

Revenues and revenues calculated through the formulas in Table 4. and Table 5. are directly proportional to the profits obtained through the analysis of the Hayami method in Table 6. and Table 7. The results of the analysis in Tables (4–7) show that the profits obtained from the processing of tempeh chips are greater than the processing of soybeans into tempeh products.

Managerial Implication

The managerial implications that are formed are more directed towards improvements at the level of production, raw materials, products, sales and business licensing so that the products produced are better than before, acceptable to the community and produce higher added value. Problems for the quality and quantity of raw materials can be overcome with the help of the Blora Regency Government in collaboration with farmers in one sub-district in Blora Regency which has high soybean productivity so that home industries can meet the needs of raw materials and control the quality of soybean raw materials every day. problems in product variety, lack of mastery of technology and products that have not been packaged properly can be

overcome by holding product packaging training by the Department of Cooperatives and SMEs of Blora Regency, making attractive packaging with product branding, and increasing product innovation in order to develop new products. Taking care of a business license or P-IRT (food permit certificate for home industry) also needs to be done so that the products produced are more secure and gain the trust of consumers.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Home industry of tempeh chips has the characteristics followed home industry status is the main business, registered at Cooperatives, Small and Medium Enterprise, and Trade Office and Industry and Trade Office, raw materials are obtained from shops, capital is obtained from own capital, and an average labor of four people. The income received by the tempeh chips home industry is greater than the production costs. The income received is classified as profitable. The added value of tempeh chips is greater than the added value of tempeh. The added value ratio for tempeh chips is classified as high (ratio > 40%) and is feasible to work on.

Recommendations

Home industry owners are expected to continue to innovate to add variants of processed products and do good marketing using marketing mix strategies (4P). The importance of innovating in running a business is to create the hallmark of a brand. Brand competition in the same industrial sector requires its own charm in order to excel in front of consumers. Except innovation, marketing becomes very important to do considering the increasingly fierce competition between competitors, there needs strategies to be able to maintain the business that has been run.

FUNDING STATEMENT: This research did not receive any specific grant from funding agencies in the public, commercial, or not - for - profit sectors.

CONFLICTS OF INTEREST: The authors declare no conflict of interest.

REFERENCES

- Andani A, Arianti NN. 2015. Nilai tambah dan keuntungan agroindustri berbasis kedelai di Provinsi Bengkulu. Di dalam: Seminar Nasional FKPTPI. p. 51–56.
- Apriyani A, Haryono D, Nugraha A. 2020. Analisis harga pokok produksi, nilai tambah dan keuntungan agroindustri keripik tempe di Kota Metro. *Jurnal Ilmu-Ilmu Agribisnis* 8(4):571–578. <https://doi.org/10.23960/jiia.v8i4.4700>
- Arianti YS, Waluyati LR. 2019. Analisis nilai tambah dan strategi pengembangan agroindustri gula merah di Kabupaten Madiun. *Jurnal Ekonomi Pertanian Dan Agribisnis* 3(2):256–266. <https://doi.org/10.21776/ub.jepa.2019.003.02.4>
- [BPS] Badan Pusat Statistik. 2020. *Kabupaten Blora dalam Angka 2019*. Jakarta: BPS.
- Badan Pusat Statistik Provinsi Jawa Tengah. 2018. *Survei Ekonomi Sosial Nasional (SUSENAS)*. Jakarta: BPS.
- Darmawan MI, Hairiyah N, Hajar S. 2018. Analisis nilai tambah dan kelayakan usaha manisan terung UD. Berkas Motekar di Desa Pemuda Kabupaten Tanah Laut. *Jurnal Teknologi Agro-Industri* 5(2):110–119. <https://doi.org/10.34128/jtai.v5i2.77>
- Evalia NA, Sa'id G, Suryana RN. 2012. Strategi pengembangan agroindustri dan peningkatan nilai tambah gambir di Kabupaten Lima Puluh Kota Sumatera Barat. *Jurnal Manajemen & Agribisnis* 9(3):173–182.
- Hendriawan I, Rochdiani D, Setia B. 2020. Analisis nilai tambah agroindustri tempe (*Rhizopus Oligosporus*) (studi kasus pada perusahaan Bapak Maman di Desa Jalatrang Kecamatan Cipaku Kabupaten Ciamis). *Jurnal Ilmiah Mahasiswa Agroinfo Galuh* 7(3):715–722. <https://doi.org/10.25157/jimag.v7i3.4003>
- Herdiyandi, Rusman Y, Yusuf, MN. 2016. Analisis nilai tambah agroindustri tepung tapioka di Desa Negaratengah Kecamatan Cineam Kabupaten Tasikmalaya (studi kasus pada seorang pengusaha agroindustri tepung tapioka di Desa Negaratengah Kecamatan Cineam Kabupaten Tasikmalaya). *Jurnal Ilmiah Mahasiswa Agroinfo Galuh* 2(2):81–86. <https://doi.org/10.25157/jimag.v2i2.62>
- Hia W, Charina A. 2021. Strategi pemberdayaan untuk keberlanjutan home industry agro (suatu kasus di Kecamatan Banyuresmi, Kabupaten

- Garut). *Jurnal Ekonomi Pertanian dan Agribisnis* 5(1):37–52. <https://doi.org/10.21776/ub.jepa.2021.005.01.04>
- Lembaga Pengembangan Perbankan Indonesia. 2015. Profil Bisnis Usaha Mikro, Kecil Dan Menengah (UMKM). In Collaboration *Bank Indonesia dan LPPI*.
- Mar'atisholikah U, Darsono, Nurjayanti ED. 2013. Analisis nilai tambah industri keripik tempe skala rumah tangga (studi kasus Desa Lerep Kecamatan Ungaran Barat Kabupaten Semarang). *Mediagro* 9(2):24–35.
- Maryam D, Setiawan I., Isyanto AY. 2020. Analisis nilai tambah agroindustri keripik beledag di Desa Citeureup Kecamatan Kawali Kabupaten Ciamis. *Jurnal Ilmiah Mahasiswa Agroinfo Galuh* 7(3): 789–796. <https://doi.org/10.25157/jimag.v7i3.4017>
- Pamungkassari AR, Marimin M, Yuliasih I. 2018. Analisis kinerja, nilai tambah dan mitigasi risiko rantai pasok agroindustri bawang merah. *Jurnal Teknologi Industri Pertanian*. 28(1):61–74. <https://doi.org/10.24961/j.tek.ind.pert.2018.28.1.61>
- Pramayang V, Haryono D, Murniati K. 2020. Pendapatan dan nilai tambah agroindustri tempe di Kecamatan Punggur Kabupaten Lampung Tengah. *Jurnal Ilmu-Ilmu Agribisnis* 8(3):490–495. <https://doi.org/10.23960/jiia.v8i3.4448>
- Purnama CH, Rochdiani D, Sudradjat. 2017. Analisis usaha agroindustri tahu (studi kasus di Kelurahan Indihiang Kecamatan Indihiang Kota Tasikmalaya). *Jurnal Ilmiah Mahasiswa Agroinfo Galuh* 4(2):198–205. <https://doi.org/10.25157/jimag.v2i1.298>
- Putri AD, Setiawina ND. 2013. Pengaruh umur, pendidikan, pekerjaan terhadap pendapatan rumah tangga miskin di Desa Bebandem. *E-Journal EP Unud* 2(4): 173–180.
- Putri DA. 2020. Faktor - Faktor yang mempengaruhi perilaku manajemen keuangan pelaku UMKM. *Platform Riset Mahasiswa Akuntansi* 1(4):62–73. <https://doi.org/10.33395/owner.v4i2.216>
- Rahmi I, Trimo L. 2019. Nilai tambah pada agroindustri dodol tomat (studi kasus pada usaha Kelompok Wanita Tani Mentari Desa Genteng, Kecamatan Sukasari, Kabupaten Sumedang). *Journal of Food System and Agribusiness* 3(2):1–7. <https://doi.org/10.25181/jofsa.v3i2.1510>
- Saputra A, Maharani E, Muwardi D. 2016. Analisis usaha agroindustri tahu (studi kasus pada usaha agroindustri tahu Bapak Warnok di Desa Kuok Kecamatan Kuok Kabupaten Kampar). *Jurnal Online Mahasiswa FAPERTA Universitas Riau* 3(2):1–10.
- Soehyono F, Rochdiani D, Yusuf MN. 2014. Analisis usaha dan nilai tambah agroindustri tempe. *Jurnal Ilmiah Mahasiswa Agroinfo Galuh* 1(1):43–50. <https://doi.org/10.25157/jimag.v1i1.286>
- Suratiyah K. 2015. *Ilmu Usahatani Kedelai*. Jakarta: Penebar Swadaya.
- Yulianti T, Prihtanti TM. 2020. Analisis usaha dan nilai tambah agroindustri keripik tempe di KedungJenar, Kabupaten Blora, Jawa Tengah. *Jurnal Ekonomi Pertanian dan Agribisnis* 4(4): 882–892.