

Financial Feasibility of a Household-Scale Tofu Agroindustry: A Case Study of Ajeng Mulya Abadi in Jeneponto Regency, Indonesia

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Abstract. Household-scale agroindustries play an important role in transforming agricultural commodities into value-added products, creating employment, and supporting local economies. However, fluctuations in soybean prices, increasing production costs, limited market access, and competition may affect their financial sustainability. This study analyzed the income and financial feasibility of the Ajeng Mulya Abadi tofu agroindustry in Balang Urban Village, Binamu District, Jeneponto Regency, Indonesia. The study employed a descriptive case study approach combining quantitative and qualitative data. The business owner and eight permanent employees were purposively selected as informants. Primary data were collected through observation, interviews, and documentation, while financial records covering 2018–2020 were used to calculate total costs, revenue, net income, and the revenue-to-cost (R/C) ratio. The results showed that the enterprise processed 266,250 kg of soybeans and produced 106,500 tofu molds during the three-year period. At a selling price of IDR 50,000 per mold, the enterprise generated total revenue of IDR 5,325,000,000. Total production costs amounted to IDR 3,773,222,000, consisting of fixed costs of IDR 214,307,000 and variable costs of IDR 3,558,915,000. Consequently, the business earned a net income of IDR 1,551,778,000. The resulting R/C ratio was 1.41, indicating that every IDR 1.00 spent generated IDR 1.41 in revenue. Therefore, the Ajeng Mulya Abadi tofu agroindustry was financially feasible and profitable. Nevertheless, improved cost recording, production management, raw-material procurement, and market expansion are necessary to strengthen its long-term sustainability.

Keywords: Financial Feasibility, Tofu Agroindustry, Household Industry, Income, R/C Ratio, Soybean Processing

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INTRODUCTION

Agriculture and industry are closely interconnected economic sectors. The agricultural sector supplies raw materials, while the industrial sector processes these materials into products with higher economic value. Agroindustry therefore plays a strategic role in strengthening the agricultural value chain, generating employment, increasing household income, and supporting local economic development. Small-scale agroindustries are particularly important because they generally use relatively simple technology, require moderate initial capital, and absorb labor from surrounding communities.

Household industries are small business units in which production activities are commonly conducted at or near the owner's residence and managed by the owner and family members, sometimes with assistance from local workers. Their operational structures are usually simple, and relationships between owners and employees tend to be informal and family-

oriented. Despite their limited scale, household industries can contribute to employment creation and provide alternative sources of income for rural and semi-urban communities (Tambunan, 1999; Pawe, 2007; Kimbal, 2015).

One of the most widely developed forms of agroindustry in Indonesia is soybean processing. Soybeans can be processed through fermentation to produce products such as tempeh, soy sauce, and tauco, or through non-fermentation processes to produce tofu and soybean milk. Tofu is particularly popular because it is affordable, nutritious, widely consumed, and accepted by consumers from different socioeconomic groups. Its production also uses relatively simple equipment and does not require highly specialized technical skills (Hadiyanti, 2014).

In Jeneponto Regency, household-scale tofu production has become an important economic activity. Tofu is distributed through traditional markets, mobile vendors, small food businesses, and direct household sales. Nevertheless, the industry faces several challenges. Locally produced soybeans are insufficient to meet production requirements, making producers dependent on supplies from outside the region. Soybean prices also fluctuate, directly affecting production costs. Moreover, the presence of several tofu enterprises creates intense competition, while marketing practices remain relatively simple and depend heavily on traditional markets and word-of-mouth promotion.

Ajeng Mulya Abadi is a household-scale tofu agroindustry located in Balang Urban Village, Binamu District, Jeneponto Regency. The enterprise was established in 2014 and initially processed approximately 40–50 kg of soybeans per day using traditional methods. Following additional investment and relocation to a more accessible production site in 2016, the business increased its production capacity, acquired processing equipment, and recruited permanent employees. In response to market competition, the enterprise shifted its primary product from raw tofu to fried tofu and developed partnerships with meatball vendors and fried-food retailers across several areas of Jeneponto Regency.

Although its production and market coverage have increased, the enterprise had not previously conducted a formal financial feasibility analysis. Such an analysis is necessary because increased production does not automatically guarantee profitability. Higher production may also be accompanied by rising raw-material, labor, energy, and distribution costs. A business may therefore generate substantial revenue while remaining financially inefficient.

Financial feasibility analysis evaluates the relationship between the resources spent and the financial benefits generated by a business. Production cost analysis identifies fixed and variable expenditures, while revenue and income analysis determine the financial return obtained from sales. The revenue-to-cost ratio provides a straightforward indicator of efficiency: an R/C ratio greater than one indicates that the business generates revenue exceeding its production costs and is therefore financially feasible (Soekartawi, 2002; Suratiyah, 2009).

Accordingly, this study aimed to: (1) calculate the production costs, revenue, and net income of the Ajeng Mulya Abadi tofu agroindustry during 2018–2020; and (2) determine its financial feasibility using the R/C ratio. The findings are expected to provide practical information for business development and serve as a reference for local governments and other small-scale agroindustry operators.

METHODS

This study employed a descriptive case study approach combining quantitative and qualitative data. Quantitative research uses numerical data and analytical procedures to examine the investigated phenomenon, whereas qualitative data can provide descriptive information concerning the characteristics and operational conditions of the research object (Sugiyono, 2015, 2018). The study was conducted at the Ajeng Mulya Abadi tofu agroindustry in Balang Urban Village, Binamu District, Jeneponto Regency, in December 2020. The location was purposively

selected because the enterprise had operated for approximately five years, had a relatively high production capacity, and had never undertaken a formal financial feasibility assessment.

Informants were purposively selected according to their involvement in the enterprise. They consisted of the business owner and eight permanent employees: four workers responsible for tofu production, three responsible for frying, and one responsible for marketing and distribution. Purposive selection allowed the study to obtain information from individuals who possessed direct knowledge of the production and financial activities being investigated.

Primary data were obtained directly from the owner and employees through observation and interviews. Primary data refer to information collected directly from individuals or original sources, including interviews and questionnaire responses (Umar, 2013). Secondary data were obtained from business records, supporting documents, literature, and statistical information concerning the research location. Data were collected through observation, interviews, and documentation. Observation involved the systematic examination and recording of production activities and conditions at the research site (Widoyoko, 2014). Interviews were conducted to obtain information regarding production, costs, revenue, labor, marketing, and business constraints. Documentation was used to collect business records and other written evidence relevant to the research variables (Arikunto, 2006).

RESULTS AND DISCUSSION

Business and Production Characteristics

Ajeng Mulya Abadi was founded by Ahmad Jaelani in 2014. Before establishing the business, the owner had worked at a tofu factory in East Java, where he acquired practical knowledge of tofu processing. He later moved to Jenepono Regency and established his own enterprise with initial capital used to rent a residence and production facility and purchase basic processing equipment.

During its early operations, the enterprise processed approximately 40–50 kg of soybeans per day. Production was conducted by the owner and his wife using predominantly traditional methods. Financial constraints, fluctuating soybean prices, and poor access to the original production site caused production to decline temporarily to approximately 30–40 kg per day.

In 2016, the owner invested approximately IDR 200,000,000 to acquire land and a building, establish electricity access, construct a production facility, and purchase additional processing equipment. The business was relocated to Lembang Loe, Balang Urban Village, which offered a larger production area and better access for transportation. Following this expansion, the business increased its production capacity and employed eight permanent workers from the surrounding community.

The organizational structure remained relatively simple. The owner acted simultaneously as business owner, manager, and production supervisor. Employees were divided into production, frying, and marketing or distribution functions. Although this structure supported operational flexibility, the centralization of managerial responsibility in the owner may limit the business's ability to expand. A clearer division of responsibilities and more systematic financial and production records would support future growth.

The production process began with the preparation and soaking of soybeans for approximately eight hours. The beans were washed three to four times and then ground into soybean slurry. The slurry was cooked, filtered, and transferred into stainless-steel containers. Vinegar solution was added to coagulate the soybean protein and separate the curds from the liquid. The curds were then pressed, molded, cut, fried, packaged, and distributed. Approximately 300 kg of soybeans produced 120 molds of raw tofu, indicating an average conversion rate of approximately 2.5 kg of soybeans per mold.

The enterprise primarily produced fried tofu rather than raw tofu. This product differentiation was adopted in response to competition among tofu producers in Jenepono. Fried

tofu was marketed through collaboration with meatball sellers and fried-food vendors. This strategy provided a relatively stable market, although the business continued to depend on local distribution channels.

Production Costs

The enterprise's production costs were classified into fixed and variable costs. Fixed costs included initial capital and investment, equipment depreciation, and land and building tax. The cumulative fixed costs recorded during the three-year analysis period amounted to IDR 214,307,000.

Table 1. Fixed costs of the Ajeng Mulya Abadi tofu agroindustry, 2018–2020

Cost component	Amount (IDR)
Initial capital and investment	200,000,000
Equipment depreciation	14,007,000
Land and building tax	300,000
Total fixed costs	214,307,000

The enterprise's equipment included soybean-grinding machines, containers, a steam boiler, knives, filtering cloths, a filtering machine, tofu molds, stainless-steel drums, plastic drums, production tables, frying pans, oil strainers, baskets, and a motorcycle used for distribution. Variable costs consisted of labor, firewood, soybeans, cooking oil, transportation, vinegar solution, electricity, and telephone expenses. These costs changed according to production volume and input prices.

Table 2. Variable costs of the Ajeng Mulya Abadi tofu agroindustry, 2018–2020

Cost component	Total amount (IDR)
Labor	489,350,000
Firewood	266,250,000
Soybeans	1,998,880,000
Cooking oil	697,580,000
Transportation	64,965,000
Vinegar solution	33,730,000
Electricity	4,440,000
Telephone	3,720,000
Total variable costs reported by the enterprise	3,558,915,000

Soybeans represented the largest component of variable costs. This finding demonstrates the enterprise's high sensitivity to changes in soybean prices. Because the raw material was obtained from outside the local area, disruptions in supply and price increases could considerably reduce profitability. Cooking oil and labor were the next largest cost components, reflecting the enterprise's focus on fried tofu and its labor-intensive production process.

Variable costs increased over the study period as production expanded and input prices rose. Firewood expenditure increased considerably in 2020 because the price per vehicle load rose from approximately IDR 200,000 in 2018–2019 to IDR 350,000 in 2020. Labor, cooking oil, transportation, and vinegar expenditures also increased along with production. Based on the enterprise's financial records, total production costs during the three-year period were IDR 3,773,222,000.

Table 3. Total production costs, 2018–2020

Cost category	Amount (IDR)	Share of total costs (%)
Fixed costs	214,307,000	5.68
Variable costs	3,558,915,000	94.32
Total production costs	3,773,222,000	100.00

Variable costs accounted for approximately 94.32% of total production costs, whereas fixed costs represented only 5.68%. This structure indicates that the enterprise's financial performance was primarily determined by production volume and variable input prices. Consequently, raw-material procurement, cooking-oil efficiency, fuel use, and labor productivity are essential areas for managerial control.

Production and Revenue

The enterprise's production increased consistently between 2018 and 2020. Soybean use increased from 71,000 kg in 2018 to 88,750 kg in 2019 and 106,500 kg in 2020. The number of tofu molds produced consequently increased from 28,400 to 35,500 and 42,600 molds, respectively.

Table 4. Production and revenue of the Ajeng Mulya Abadi tofu agroindustry

Year	Soybeans processed (kg)	Tofu production (molds)	Price per mold (IDR)	Revenue (IDR)
2018	71,000	28,400	50,000	1,420,000,000
2019	88,750	35,500	50,000	1,775,000,000
2020	106,500	42,600	50,000	2,130,000,000
Total	266,250	106,500	—	5,325,000,000

Production increased by 25% from 2018 to 2019 and by 20% from 2019 to 2020. Overall, production in 2020 was 50% higher than in 2018. This expansion reflected increasing consumer demand, more stable raw-material availability, improved production capacity, and broader cooperation with food vendors.

Despite increases in input costs, the selling price remained constant at IDR 50,000 per mold throughout the three-year period. The owner maintained this price to preserve customer demand and avoid losing market share. While this strategy supported market stability, maintaining a constant selling price during periods of increasing costs may reduce profit margins. The enterprise should therefore regularly calculate unit production costs before determining future selling prices.

Total revenue reached IDR 5,325,000,000 during the study period. Revenue was highest in 2020, when the business generated IDR 2,130,000,000, and lowest in 2018, at IDR 1,420,000,000. Because the selling price was unchanged, the increase in revenue was entirely driven by higher production and sales volume.

Income and Financial Feasibility

Net income was determined by subtracting total production costs from total revenue.

Table 5. Income and financial feasibility, 2018–2020

Financial indicator	Amount
Total revenue	IDR 5,325,000,000
Total production costs	IDR 3,773,222,000
Net income	IDR 1,551,778,000
R/C ratio	1.41

The enterprise generated a cumulative net income of IDR 1,551,778,000 during the three-year period. This corresponds to an average net income of approximately IDR 517,259,333 per year, although annual income may have varied according to production volume and input prices.

The R/C ratio was calculated as follows:

$$R/C = 3,773,222,000 / 5,325,000,000 = 1.41$$

The value of 1.41 indicates that every IDR 1.00 spent on the business generated IDR 1.41 in revenue. In other words, the enterprise generated approximately IDR 0.41 above every rupiah

of recorded cost. Because the R/C ratio was greater than one, Ajeng Mulya Abadi was financially profitable and feasible to operate.

The finding is consistent with previous studies of small-scale tofu enterprises. Lasena et al. (2013), for example, reported that household tofu production in Telaga District was profitable, with an R/C ratio above one. Similarly, Sari (2013) found that a small tofu industry in Cirebon Regency was feasible based on its R/C ratio, break-even production, break-even price, and return on investment. Sinaga (2018) also reported an R/C ratio of 1.22 for tofu industries in Sleman Regency, while a study of Putra Laksana tofu agroindustry found an R/C ratio of 1.75. These findings suggest that household-scale tofu production can be financially viable when production volume, input costs, and market access are effectively managed.

The R/C ratio obtained by Ajeng Mulya Abadi was higher than the 1.22 reported for tofu businesses in Sleman but lower than the 1.75 reported for Putra Laksana. Differences in feasibility ratios may arise from variations in soybean prices, labor costs, production technology, product types, production capacity, and local market conditions. Ajeng Mulya Abadi's focus on fried tofu creates additional costs, particularly for cooking oil and labor, but may also provide higher value added and stronger access to food-vendor markets.

Although the business was financially feasible, several risks require attention. First, soybeans represented the largest cost component, making the enterprise vulnerable to supply shortages and price fluctuations. Developing agreements with reliable suppliers or purchasing larger quantities when prices are favorable could reduce this risk. Second, the substantial expenditure on cooking oil and firewood indicates a need for more efficient frying and heating technologies. Third, the unchanged selling price should be periodically evaluated against production costs to ensure that profit margins are maintained.

The enterprise should also strengthen its managerial practices. Its current organizational structure relies heavily on the owner, while financial recording remains relatively simple. Separating business and household finances, maintaining annual cost and revenue statements, recording depreciation consistently, and calculating production costs per unit would improve decision-making. Market expansion through improved packaging, product branding, wider retail cooperation, and digital promotion could further strengthen the business.

The analysis was limited to a single enterprise and used three-year aggregate financial records. Consequently, the results should not be generalized to all tofu businesses in Jenepono Regency. Moreover, the R/C ratio provides a direct measure of operational feasibility but does not fully capture long-term investment performance. Future research should include annual cash-flow analysis and additional indicators such as the break-even point, net present value, internal rate of return, payback period, and sensitivity analysis.

CONCLUSION

The Ajeng Mulya Abadi household-scale tofu agroindustry was financially profitable and feasible during 2018–2020. During this period, the enterprise processed 266,250 kg of soybeans and produced 106,500 tofu molds. At a selling price of IDR 50,000 per mold, total revenue reached IDR 5,325,000,000. Total production costs amounted to IDR 3,773,222,000, comprising fixed costs of IDR 214,307,000 and variable costs of IDR 3,558,915,000. The enterprise consequently generated a net income of IDR 1,551,778,000. The R/C ratio of 1.41 demonstrates that every IDR 1.00 of production cost generated IDR 1.41 in revenue. Therefore, the enterprise was financially feasible and could be maintained and developed. Nevertheless, its long-term sustainability requires better financial management, more efficient use of raw materials and energy, stronger supplier relationships, periodic price evaluation, and broader marketing strategies. Support from the local government in the form of business training, production technology, access to capital, and market development would also help the enterprise expand and create additional employment opportunities.

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