

## Feasibility Analysis of Arabica Coffee MSME Business in “Coffee Doctrination” in Takengon

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### ABSTRACT

As an agrarian country, Indonesia has an agricultural sector that plays an important role in national development and the economy, one of which is through Arabica coffee commodities. The Gayo highlands in Central Aceh are known as one of the largest centers of Arabica coffee production in Asia and are the main source of livelihood for the local community. Increased national coffee consumption has also encouraged the growth of micro, small, and medium enterprises (MSMEs) in the coffee processing sector. However, MSMEs often face challenges such as fluctuations in raw material prices, suboptimal marketing strategies, and high distribution costs. This study aims to analyze the feasibility of Arabica Coffee MSMEs at the Coffee Processing Facility in Takengon, Central Aceh District, by examining production, marketing, and financial aspects. The research method used is qualitative descriptive through observation, interviews, and document analysis. The research findings indicate that, in terms of production, the process is efficient with maintained product quality; from a marketing perspective, more effective strategies are needed to increase sales and market reach; while from a financial standpoint, the business demonstrates viability with positive NPV indicators, an IRR above the discount rate, a quick payback period, and a Net B/C ratio > 1. Therefore, this SME is deemed viable for operation and further development. These findings are expected to serve as a reference for similar SMEs in formulating sustainable business strategies and enhancing the competitiveness of local coffee.

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### INTRODUCTION

Indonesia is known as an agrarian country that relies on the agricultural sector as the main foundation for sustaining the lives of its people, national development, and the country's economy. This sector not only plays a role in providing food and employment, but also serves as the backbone of sustainable natural resource management. (Ananda et al., 2023). One of the agricultural subsectors that has a significant contribution and great economic potential is the plantation subsector, particularly coffee. Coffee is one of Indonesia's leading plantation commodities that has been cultivated for a long time and is known to have high economic value in both domestic and global markets. One of the most sought-after types of coffee is Arabica coffee (*Coffea arabica*), known for its distinctive taste, strong aroma, and superior sensory characteristics. The Gayo region in Central Aceh, including parts of Bener Meriah and Gayo Lues districts, is one of the largest Arabica coffee

production centers in Asia. This region boasts an agroclimatic advantage with elevations exceeding 1,200 meters above sea level, making it highly suitable for the cultivation of high-quality Arabica coffee. (Fadri et al., 2020). Data from the Central Statistics Agency shows that although Indonesia experiences fluctuations in coffee production from year to year, domestic coffee consumption continues to increase. This indicates a significant opportunity for the development of the coffee processing industry at the local level, particularly through the role of Micro, Small, and Medium Enterprises (MSMEs). MSMEs in the coffee sector have great potential to absorb labor, increase community income, and strengthen the regional economy. However, MSMEs also face various challenges, such as unstable raw material prices, limited production capacity, high distribution costs, and suboptimal marketing strategies. One MSME operating in the Arabica coffee processing sector in Aceh Tengah Regency is Doktrinasi Kopi. This business provides roasting services and sells various types of coffee powder with a fairly diverse product differentiation, such as fullwash, honey, winey, natural, and specialty. Since its establishment in 2018, Doktrinasi Kopi has become one of the local businesses contributing to the processing of local agricultural products. However, to ensure the sustainability and growth of the business, an in-depth analysis of the business feasibility from various aspects is required. Therefore, this study was conducted to analyze the feasibility of the Kopi Doktrinasi business from three main aspects, namely production, marketing, and finance. The results of this study are expected to provide a comprehensive overview of the prospects for developing local coffee businesses and serve as a reference for other MSME players in formulating sustainable and competitive business strategies amid the ever-evolving market dynamics.

## LITERATURE REVIEW

### Production Aspects

The production aspect of a business feasibility study is conducted to answer the question, "Is the project capable of producing products every year in accordance with market demand throughout the project's lifetime in terms of quantity, quality, community, and price?" (Reza El Akbar et al., 2023). Analysis in terms of production is to assess the company's readiness to run its business by evaluating the location and layout as well as the readiness of the machines used. (Reza El Akbar et al., 2023).

### Marketing Aspects

According to Sunyoto in citation Rofa et al., (2021), Marketing is the business practice of designing, deciding on costs, promoting, and producing appropriate products that can satisfy buyer desires and achieve market targets and partner goals. Assessing market perspective is important because no business can survive without interest in its products/administration. Market perspective is also used to determine the size of the market, demand trends, and the overall industry share of the relevant product.

### Financial Aspects

Financial aspects according to Siswanto Sutojo in Adnyana (2020), is a project investment plan or referred to as project investment financing science (Capital Budgeting).

#### a. Net Present Value

Net Present Value (NPV) or net present value, is the ratio between net cash PV and investment PV during the investment period. The difference between these two PV values is called NPV (Kasmir and Jakfar in citation Artiningsih (2019)

$$NPV = \sum_{t=1}^n \left( \frac{\Delta CF}{1(1+r)^t} \right) - I$$

Note:

$\Delta CF_t$  : Cash flow in a given period.

$I_0$  : Initial investment

$r$  : Interest rate/discount rate

$t$  : Period

$n$  : Number of periods

#### b. Internal Rate Of Return

Internal Rate of Return (IRR) is a tool that can measure the rate of return on internal results. The following is the formula for calculating IRR : (Artiningsih, 2019)

$$IRR = i_1 + \frac{NPV_1}{NPV_1 - NPV_2} (i_2 - i_1)$$

Note:

I1 = The first interest rate that produces NPV1

I2 = The interest rate that produces NPV2

NPV1 = Positive

NPV2 = Negative

The assessment criteria for IRR are as follows:

- 1) If IRR is greater than the loan interest rate, it is accepted
- 2) If IRR is less than the loan interest rate, it is rejected

c. Payback Period

The Payback Period method is a technique for assessing the return on investment period of a business. This calculation is based on the net cash received each year. (Artiningsih, 2019)

$$PP = \frac{\text{Capital Outlays}}{\text{Proceeds Bulanan}} \times 1 \text{ bulan}$$

According to Artiningsih (2019), in assessing whether or not it is acceptable in terms of Payback Period, the results must meet the following conditions:

- a. The current PP is less than the investment period.
- b. By comparing the industry average (3 years).
- c. In accordance with the company's targets.

d. Net Benefit and Cost Ratio (B/C Ratio)

The B/C Ratio or Profitability Index is the ratio of the net present value of receipts to the present value of investment expenditures over the life of the investment. (Artiningsih, 2019)

$$\frac{B}{C} \text{ ratio} = \frac{\Sigma PV \text{ Kas Bersih}}{\Sigma PV \text{ Investasi}} \times 100\%$$

The assessment criteria for the B/C Ratio are as follows: (Artiningsih, 2019)

- 1) If the B/C Ratio >1, then the business/project proposal is considered profitable.
- 2) If the B/C Ratio <1, then the business/project proposal is considered unprofitable.

e. Break Event Point

Break-even analysis is an analytical technique that studies the relationship between costs, profits, and sales volume, or cost, profit, and volume analysis (CPV analysis), particularly in profit planning.. (Manuho et al., 2021)

$$BEP \text{ (units)} = \frac{\text{fixed Cost}}{\text{selling price per Unit} - \text{variable costs per unit}}$$

$$BEP \text{ (mata uang)} = \frac{\text{Fixed Cost}}{1 - (\text{variabel costs per unit} / \text{selling price per unit})}$$

**METHOD**

This study was conducted using qualitative methods. The data obtained in this study was qualitative data, so the analysis method used was qualitative analysis. To reveal the symptoms that exist in society, the researcher used a descriptive approach to provide an overview of the Business Feasibility Analysis of Arabica Coffee MSMEs in Takengon. Sugiyono (2016), Qualitative research is research based on postpositivism philosophy, used to study natural conditions of objects, where the researcher is the key instrument, so qualitative research emphasizes meaning rather than generalization. (Rizky Fadilla & Ayu Wulandari, 2023)

## RESULTS

### Production Aspects

In-depth interviews revealed that Doktrinasi Kopi Takengon uses raw materials in the form of coffee beans that have undergone post-harvest processing and are ready for further processing, rather than in the form of dried husks as in the traditional process. These raw materials are obtained through collaboration with local farmers who are part of a farmer development program, systematically guided to meet specific quality standards in Arabica coffee production. This partnership model enables quality control from the source, while strengthening the sustainability of community-based supply chains. In terms of operations, the production system implemented is roasting by order, where the roasting process is only carried out after an order is placed by the consumer. This approach is applied to ensure the freshness and quality of the coffee powder produced, thereby providing consumers with an optimal sensory experience. This strategy demonstrates the business operator's commitment to product quality, but also requires supply chain management and a logistics system that is responsive to market demand.

### Marketing Aspects

Field findings indicate that the marketing management strategy implemented by the owner of Doktrinasi Kopi Takengon is still traditional and has not shown optimal effectiveness in expanding market reach. Promotional activities are predominantly carried out through word of mouth communication and participation in coffee exhibitions or events that are not held periodically and continuously. This irregularity results in low product exposure to new consumers. However, based on the identified market segmentation, this coffee product has the potential to reach consumers from various age groups, both young and adult, who have a preference for coffee consumption. Additionally, there is an untapped market opportunity, namely consumers who are unfamiliar with the distinctive flavor of Takengon Arabica coffee. Therefore, a re-formulation of the marketing strategy based on an integrated approach is needed, encompassing consumer education, optimization of digital media, and development of distribution networks to enhance the product's competitiveness and market penetration sustainably.

### Financial Aspects

#### 1. Net Present Value

Income	Df 10%	PV
28.600.000	0,9091	26.000.260
33.000.000	0,8264	26.611.200
37.400.000	0,7513	28.098.620
28.600.000	0,6830	19.533.800
29.700.000	0,6206	18.440.730
38.500.000	0,5645	21.721.700
<b>Total</b>		<b>140.426.310</b>
<b>Initial Investment</b>		<b>129.491.000</b>
<b>NPV</b>		<b>10.935.310</b>

$$\text{NPV} = 140.426.310 - 129.491.000 = 10.935.310$$

Based on the calculations presented in the previous table, the investment made by the Arabica Coffee Doktrinasi Kopi Takengon SME is deemed feasible to proceed. This is indicated by the NPV value of Rp10,935,310, which is positive and greater than zero. This positive NPV value indicates that the investment project is capable of generating financial returns that exceed the initial investment costs, as well as providing long-term value for the company.

## 2. Internal Rate of Return

Month	Cash Inflow	DF 10%	PV from Cash Inflow	DF 30%	PV from Cash Inflow
July	28.600.000	0,9091	25.914.460	0,7692	20.633.093
August	33.000.000	0,8264	27.271.200	0,5917	16.136.369
September	37.400.000	0,7513	28.098.620	0,4552	12.790.491
Oktober	28.600.000	0,6830	19.533.800	0,3501	6.838.783
November	29.700.000	0,6209	18.440.730	0,2693	4.966.088
December	38.500.000	0,5654	21.767.900	0,2072	4.510.308
			141.026.710		65.875.132
			<b>129.491.000</b>		<b>129.491.000</b>
			<b>11.535.710</b>		<b>-63.615.868</b>

$$IRR = 10\% + \frac{11.535.710}{11.535.710 - (-63.615.868)} (30\% - 10\%)$$

$$IRR = 10\% + \frac{11.535.710}{75.151.578} (20\%)$$

$$IRR = 10\% + 3\% \quad IRR = 13\%$$

Based on the results of the analysis, it can be concluded that the investment in the Takengon Arabica Coffee Doktrinasi Kopi MSME is feasible. This is indicated by the IRR value of 13%, which is above the minimum expected rate of return of 10%.

## 3. Payback Period

Period	Cah inflow	DF 10%	<i>Arus Kas</i> = $\frac{Arus Kas}{(1 - K)^n}$
Juliy	28.600.000	1,1	26.000.000
August	33.000.000	1,21	27.272.727
September	37.400.000	1,33	28.120.300
Oktober	28.600.000	1,46	19.589.041
November	29.700.000	1,61	18.447.205
December	38.500.000	1,77	21.751.412
<b>Total</b>	<b>195.800.000</b>	<b>8,48</b>	<b>141.180.685</b>

The steps for calculating the payback period (PP) are as follows:

Cash Outflow : Rp129,491,000  
 Cash Inflow Stage 1 : Rp.26,000,000  
 Uncovered Investment : Rp.103,491,000

$$PP = \frac{\text{Capital Outlays}}{\text{Proceeds Bulanan}} \times 1 \text{ bulan}$$

$$PP = \frac{103.491.000}{27.272.727} \times 1 \text{ bulan}$$

$$PP = 4,79$$

$$\text{Month} = 4 \text{ Month}$$

$$\text{Day} = 0,79 \times 30 \text{ day} = 24 \text{ day}$$

$$PP = 4 \text{ month } 24 \text{ day}$$

Based on the calculation results, investment in Doktrinasi Kopi Takengon is deemed feasible when viewed from the Payback Period (PP) method. The investment payback period is 4 months and 24 days, which is faster than the maximum payback period set at 1 year.

#### 4. Net Benefit Cost Ratio (Nert B/C)

$$\frac{B}{C} \text{ ratio} = \frac{\Sigma PV \text{ Kas Bersih}}{\Sigma PV \text{ Investasi}} \times 100\%$$

$$\frac{B}{C} \text{ ratio} = \frac{141.026.710}{129.491.000} \times 100\%$$

$$\frac{B}{C} \text{ ratio} = 1,08$$

Based on the calculation results, the Benefit Cost Ratio (B/C Ratio) value for the Takengon Coffee Doctrination shows a figure of  $1.08 > 1$ , which indicates that the business is worth developing because it is able to produce greater benefits compared to the costs incurred.

#### 5. Break Even Point

Here is the calculation using the Break Even Point formula:

Total revenue	= 365,913,000
Fixed costs	= 160,966,000
Selling price	= 220,000
Variable costs	= 150.000

$$\text{BEP (unit)} = \frac{160.966.000}{220.000 - 150.000}$$

$$= 2.299 \text{ kg}$$

$$= \text{Rp.}505.780.000$$

Based on the above calculations, it can be concluded that Doktrinasi Kopi Takengon must sell 2,299 kg of coffee with a total revenue of Rp. 505,780,000 to cover all production costs and achieve a profit during the sales period.

## CONCLUSION

Arabica Coffee MSMEs Doktrinasi Kopi Takengon is one of the micro, small, and medium enterprises that has significant potential for sustainable development. Based on the results of a feasibility analysis covering production, marketing, and financial aspects, it can be concluded that this business is viable to operate. From a production perspective, operational processes run efficiently with adequate technological support and the use of high-quality raw materials sourced from affiliated farmers. This ensures the quality of the final product and supports the continuity of the supply chain. Additionally, the strategic location of the business provides added value in terms of accessibility to consumers and distribution. From a marketing perspective, market segmentation has been appropriately defined, targeting consumers across various age groups of coffee enthusiasts. However, the current marketing strategy remains limited, necessitating strengthening through the use of digital media, enhancing brand awareness, and diversifying distribution channels to expand market share. In the financial aspect, the results of the investment feasibility evaluation using indicators such as NPV (Net Present Value), IRR (Internal Rate of Return), Net B/C (Net Benefit Cost Ratio), PP (Payback Period), and BEP (Break-Even Point) indicate that this business falls into the category of feasible and profitable. Therefore, the Takengon Coffee Doktrinasi SME has a significant opportunity to grow into one of the key players in the local Arabica coffee industry, provided that development strategies are implemented in an integrated and sustainable manner.

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