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# FEASIBILITY ANALYSIS OF COFFEE PROCESSING BUSINESS IN CIJAMBU SUMEDANG

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### Abstract

The increase of coffee consumption encourage a small scale enterprise, Cijambe Coffee to identify the current business performance to face the challenge. The research purposes are 1) to evaluate the feasibility of Cijambe Coffee business, 2) To interpreted the evaluation result in recommendation that help enterprise to decide the strategy. The research method is quantities and qualitative approach. The evaluation results: 1) the product has distinctive quality, 2) Technical factor is feasible in terms of producing good quality, 3) financially feasible that is proven by the parameters: NPV (IDR 2,350,000), PP (2.9 years), IRR (27.88%), and unit BEP (169.23 units), and the value of BEP ( Rp. 5,076,923.07), 4) Recommended strategy are : expanding market and production capacity with accurate forcast and strategy; the shifting of B to C into B to B market strategy or mix of both; acquiring business partners with good bargain and productive resources.

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### **INTRODUCTION**

Coffee is a commodity crop that has an important role in economic activities in Indonesia (Indrayani & Pardiyono, 2020). Indonesian agriculture I the second largest economic sector which contributes 13,28% to GDP where the plantation subsector contributes 3,94% in 2021 (Statistika Kopi Indonesia, 2021).

Coffee is also one of Indonesia's export commodities are quite important as a producer of foreign exchange in addition to oil and gas. In addition to the export opportunities increasingly open, coffee in the domestic market is still quite large the potential to produce good coffee is an advantage of this village. In addition, the high level of public consumption of coffee is a reason to develop a business in the form of a coffee shop.



Figure 1. The comparation of coffee production betweovernment's plantation (PBN), largelarge-scaleate's plantation (PBS), and commucommunitytation (PR) (Statistika Kopi Indonesia, 2021)

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20 Jurnal Riset Bisnis dan Manajemen
Volume 16, No. 1, February 2023
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In supply side, based on BPS data, the growth of green bean production from community plantation significantly existed in the last three years (green bar on Figure 1. The comparation of coffee production betweeovernment's plantation (PBN), largelarge-scaleate's plantation (PBS), and commucommunitytation (PR) (Statistika Kopi Indonesia, 2021)). makes coffee production enterprise has good opportunity to expand their business. The domestic consumption ready-drink drink coffee sales volume is predicted to be 225 million liters on 2021 (DataIndonesia.Id). The demand for coffee does not come from within the country alone but abroad is also very high. So, it is not surprising that the coffee business is starting to be in demand by the community. Though export trend to decline in past 9 years, the increase started from 2108 until this year (Figure 2. Export value (million US\$) and volume (000 tons) of Coffee (BPS, 2022) which was encouraged by government programs (Statistika Kopi Indonesia, 2021).



Figure 2. Export value (million US\$) and volume (000 tons) of Coffee (BPS, 2022)

According to International Coffee Organization (ICO), in 2019, Indonesian coffee consumption reached 3,6 million sacks who increased increasing in the next year to 5 million sacs. This placed Indonesia as second highest growth consumption (3,7%) coffee producing countries (https://www.djkn.kemenkeu.go.id/)

One of the coffees that are not widely known to the public is the typical coffee of Cijambu Village. Cijambu Village is a village located in Sumedang Regency, one of the districts of West Java Province, precisely in the Area of Tanjungsari area. Namely Cijambu Coffee, the small enterprise, in this area engaged in coffee processing business from cherry, green bean to roasted bean.

From observation that there are so many coffee enthusiasts or drinkers in Indonesia, especially in Sumedang, that many coffee shops are opened in various regions in Sumedang. Sumedang produces 955.58 tons of green bean coffee which contributes,4% of all production in West Java (BPS, 2021). Those both side, supply and market make the demand for coffee from these shops more potential.

Seeing the lucrative prospects of the coffee business, the researcher will conduct a comprehensive analysis of the coffee processing business. The objectives of the research are: are 1) to evaluate the feasibility of Cijambe Coffee business, 2) To interpreted the evaluation result in recommendation that help enterprise to decide the strategy.

#### **METHOD**

The method used in this study is a quantitative method, which is a research method that represents the understanding of positivism (Maulyadi, 2013), with the tools and data collection used in this study is observation, where the author will make direct observations, see, hear, review and record everything related to business feasibility in the Cijambu coffee business.

The business feasibility approach was applied in this research to evaluate the sustainability of the coffee processing enterprise located in Cijambu, Sumedang Regency, Province of Jawa Barat. Therefor, the research hypothesis would be formulated as the coffee processing business in Cijambu is a feasible in market, production, and financial.

A feasibility analysis is carried out in this research to see if this business can provide benefits for the investment to be invested. Its result is an estimate of a business making a decent profit when it has been operated (Ridwan, 2019). The purpose of the feasibility analysis is to assess the viability of a potential venture and identify both needed resources and major problems in the present so that they can be remedied at an early stage of the start-up process Scarborough et al., 2012).

Jurnal Riset Bisnis dan Manajemen Volume 16, No. 1, February 2023



Figure 3. Research Methodology

Feasibility study is a comparative and in-depth assessment of the feasibility of business (Johan, 2011). Business feasibility studies are also important for companies that have plans to carry out business development (Durri et al., 2016). A business that is said to be feasible or unfit to run can be a seen from the results of comparison of economic factors allocated to a new business or business with the results of its return or income obtained from the business. The estimated success may be interpreted differently according to the party carrying out the objectives (Ariesti Sopia, Aydiny Ummy Nurhali Harahap, Hadi Mubarak, 2022).

This research used several variables related to three selected aspects to evaluate business feasibility. The selected aspects were: 1) Marketing aspect, 2) Technical aspect, and 3) Financial aspect. These aspects were explored by examining primary and secondary data. Primary data was gained by observation and interview. Observation was needed to record physical objects and tangible process (manufacturing process, work system, materials, location, facilities, and products). Interview was needed to explore the intangible satisfaction's vision, customer satisfactions, and so on) and to verify all data and information that were already collected before. The respondents of primary collection were owners and workers. The secondary data of this research would be: 1) financial report, 2) sales report, 3) product specifications, 4) factory layouts and location, and 5) Additional information would be needed to describe potential customer and competitors that is taken from consumption and production of coffee that sourced from BPS (Badan Pusat Statistika).



Figure 4. Research design

The analysis carried out to marketing aspects, technical aspects, and financial aspects. For the marketing aspect, it uses the concept of a marketing mix consisting 4P, namely Product, Price, Place, Promotion, for financial aspects using the forecasting method, payback period (PP), net present value (NPV), internal rate of return (IRR), and breakeven point (BEP). So that the analysis method is expected to provide an overview Cijambe Coffee, in accordance with the research objectives.

Marketing is a socioeconomic process that relies to meet the needs of individuals and groups by creating exchanges so as to provide maximum individual or group satisfaction (Nurcholifah, 2014). Marketing aspect is a company's activity aimed to selling goods/services produced by the company to the market (Umar, 2014). Therefore, this aspect is responsible for determining the features of the market to be selected. The feasibility analysis of this aspect the main one is in terms of: a. Determination of segments, targets and position of products in their market. b. Studies to find out potential consumers, such as regarding their attitudes, behaviors, and satisfaction with the product. c. Determine marketing strategies, policies, and programs to be implemented. d. In this aspect of marketing using the 4P method.

The study of technical aspects reveals what needs are needed and how technically the production process will be implemented (Afiyah & Dwiatmanto, 2015). The purpose of this aspect study is to believe whether technically, the business plan can be implemented feasibly or not feasibly, either at the time of project construction or routine operations.

The financial aspect of a business project is said to be healthy if it can provide decent profits and be able to fulfill its financial obligations. Financial aspect study activities are carried out after other aspects are completed (Purnomo et al., 2021). Activities in this financial (financial) aspect include calculating the estimated amount of funds needed for the purposes of initial working capital and for the procurement of fixed assets of the project. Also, it is studied about the financing structure of how it is most profitable by determining how much funds should be prepared through loans from other parties and how much funds from own capital. The making of the results of the financial analysis will be used to communicate the state of the financial plan with interested parties.

This paper would discuss the viability and the risk would be challenged by the enterprise in attempt to complete the role of a feasibility study. Adidu and Olaniyi (Nwakoby & Ezejiofor, 2018) argued that good feasibility study helps to determine the viability of purposed business and the risk associated with it, enables entrepreneurs to reject or accept a business before starting it. In the Cijambu Cofee case, the discussion will help the entrepreneur to identify the enterprise business current and future situation in order to decide what strategy would be reliable enough.

This section would also discuss the interpretation of the feasibility evaluation result and explore the possible factors that must be awarded by the owner. One research showed that were four factors to determine the success in coffee business which are: the capacity and ability of enterprise management, capability to organize production, marketing ability, and financial performance (Revadiana & Trimo, 2021).

#### RESULTS

Data collection was done by exploring all measurable variables in three aspects which were marketing, technical, and financial. All the data were presented in description and/or processed in mathematical model. The results then were interpreted and evaluated to assess the level of business feasibility of enterprise.

Products from Cijambu coffee are quality coffee products that can become coffee products that are liked by consumers, in addition to this, coffee products are currently a product that is quite marketable so that it can be concluded that in terms of products this business is feasible to run. The village, which is located at an altitude of approximately 1200 meters above sea level, is very suitable for the growth of food crops such as vegetables, tubers and coffee. The coffee that grows in this village is very fertile, with a distinctive taste, making Cijambu village coffee worth considering.

The price or price is affordable for coffee connoisseurs from various segmentations where the price of Cijambu coffee per-100gr is priced at Rp.30,000, the price is affordable enough to get coffee with good quality and good taste. So that this price becomes the main capital for the business to be run and accepted in the community. Promotion carried out by Cijambu coffee business owners is quite advanced where promotions are carried out on social media or directly through various events such as festival and other events.

People factor in this feasibility study limited to potential end user customer. The enterprise has not used B to B strategy. Customer is accessed by promoting the products in internet marketplace platforms and social media which have very large market population. But this strategy hasn't performed well. In the other hand, non digital marketing strategy such direct selling strategy shows more effective though is limited to local area. Potential customer that is conducted in this research is limited to the production capacity and the market ability to access customer. Therefore, the number of local coffee customer in Sumedang regency consider to evaluate the market feasibility. The average of coffee consumption per week was accessed from BPS to describe the potential accessible market (see Table 1).

	The Average Coffee Consumption per week (gram)		
	2020	2021	
Ground, bean	10.80	12.00	
Instant	108.00	113.20	

Table 1. The average coffee consumption per week in Indonesia

Source: BPS, 2021, converted from ons to gram unit

The population number of Sumedang regency was forecasted by using 2021 data of BPS by moving average method that results 1.153.414. The multiplication of this number to the average consumption per week yield the number of the potential accessible market in last two years (see Table 2).

8 8 9	
The number of consumptions of coffee in Sumedang Regency per year (ton)	
2020	2021
647.8	719.7
6,477.6	6.789.5
7.125.3	7.509.2
•	2020 647.8 6,477.6

Table 2. Total accessible market of coffee in Sumedang Regency

Source: BPS, 2021, converted from ons to gram unit

According to BPS data there are 955.58 coffee bean production all community plantation in Sumedang in 2021. And the enterprise yield 1.5 ton (0.16% of all region's production). This showed that the demand in accessible market is over than its supply.

The resulting coffee product design is in the form of a coffee product that is ready to brew where the coffee product has a distinctive taste and can be accepted by the public, especially coffee lovers. Business owners conduct research to coffee connoisseurs and coffee shops to find out the type of coffee that consumers want, especially in the Sumedang regency area, so that Cijambu coffee products come out that match the criteria desired by consumers.

For now, Cijambu coffee has a production capacity of 2 quintals of raw coffee (cherry), from 2 quintals of raw coffee to 20 kg of coffee that is ready for sale. The production capacity is still small due to uneven harvest stages and limited capital, so the coffee output to be produced is still on a small scale.

The production process of Cijambu Coffee is as follows: (1) Red picking, red picking is the initial process of coffee processing, which is picking coffee fruits from coffee trees. Coffee fruits are selected ripe with red features; (2) Sorting cherry, proses separation of good and bad coffee beans, selected good coffee beans into coffee that is ready to be processed; (3) Drying, process drying coffee beans that are still in cherry form, this is done to reduce the moisture content in the coffee beans; (4) Grade green bean, process separation of the quality of green bean coffee to be processed by arabica or Robusta process; (5) Sorting green beans, process separation of green bean coffee beans that have good and bad quality, will be selected good quality coffee beans to be processed into Cijambu coffee products; (6) Huller, process stripping horn skins are usually done using special machines; (7) Roasting, process roasting raw coffee beans to a certain degree of ripeness, this process serves to form the original taste of coffee beans; (8) Rest, time to rest coffee beans after roasting before becoming coffee grounds; (9) Grinder, process grind coffee from whole coffee to ground coffee; (10) Packing, process the packaging of coffee that has been processed into special packaging.

As for the facilities used are as follows: (1) Dome, the dome is a place in the form of a room made of plastic that is quite thick and supported by bamboo which is used to dry coffee beans for processing, business owners make their own traditional domes in their homes; (2) Huller machine, this machine is used to grind coffee that has gone through the drying stage, the entrepreneur does not yet have the machine so he borrowed from his partner with a predetermined rental fee; (3) Roasting machine, this machine is used for baking, just like a huller machine, the entrepreneur also does not own a machine and rents it to his partner for a predetermined rental fee; (4) Plastic, used for wrapping and carrying dried coffee for production to the rental place of huller machines and roasting machines; (5) Box storage, used for storage of finished and marketed coffee products.

The location of the Cijambu coffee business is in the village of Cijambu, Tanjungsari Sumedang, where the location is very close to the coffee planting place, making it easier for entrepreneurs to get good resources. In addition, Cijambu village has tourist attractions that are already quite famous so that they are widely known by the public.

2.917.333

2.945.414

2.946.271

2.936.472

24 Jurnal Riset Bisnis dan Manajemen Volume 16, No. 1, February 2023

To find out whether the business is feasible to run or not, the author also includes the financial aspect as one of the aspects considered. The following is data on finance:

No	Initial Investment	Economic Age (year)	Cost (IDR)
1	Production Place	5 year	1.300.000
2	Production Tools	5 year	8.500.000
3	Maintenance	5 year	2.500.000
	Total Initial Investment		12.300.000
		Table 4. Operating Costs	
No	Operating	Cost (IDR)	
1	Raw Material	1.600.000	
2	Electrical Costs	100.000	
3	Marketing Costs	500.000	
4	Labor Costs	1.500.000	
5	Production Costs	500.000	
6	Maintenance Costs	500.000	
	Total	4.700.000	
		Table 5. Income	
	Years	Income (IDR)	Forecast (IDR)
	2019/1	2.500.000	-
	2019/2	2.850.000	-
	2020/1	3.150.000	-
	2020/2		2.833.333
	2021/1		2.944.333
	2021/2		2.975.666

Payback period

 $PP = \frac{\text{investment value}}{\text{net cash}} \ge 1 \text{ year}$  $PP = 2 \text{ year} \frac{5.666.667}{5.919.999} \ge 1 \text{ year} = 2,9 \text{ year}$ 

2022/1

2022/2

2023/1

2023/2

From the results of the data processing carried out, the value of the payback period with a result of 2.9 years is obtained, meaning that the capital issued by the business will return within a period of 2.9 years. Thus, it can be concluded that the Cijambu coffee business is feasible to run because its capital is faster than the specified target for 4 years.

Year	Cashflow	Discount factor $r = 15\%$	Present value of cashflow
1	5.350.000	0,87	4.654.500
2	5.983.333	0,756	4.523.400
3	5.919.999	0,658	3.895.359
4	5.863.167	0,572	3.353.732
5	5.882.743	0,497	2.923.723
	19.350.714		
	17.000.000		
	NPV		2.350.714

Table 5. Account NPV r = 15%

NPV's results in terms of business or Cijambu coffee business show that this business is feasible to run, because NVP results were obtained Rp.2,350,714 with positive results.

Before calculating the IRR value, first calculate the NPP with a discount factor value level greater than the previous NPV value calculation, the calculation can be seen in the Table 6.

Year	Cashflow	Discount factor $r = 15\%$	Present value of cashflow		
1	5.350.000	0,800	4.280.000		
2	5.983.333	0,640	3.829.333		
3	5.919.999	0, 512	3.031.039		
4	5.863.167	0,410	2.403.898		
5	5.882.743	0,328	1.929.539		
	Total present value of cashflow				
	17.000.000				
NPV			-1.526.191		

From the calculations carried out, the IRR result was obtained, which was 27.88%, which means that the business is feasible to run because the IRR value is greater than the expected IRR value.

To calculate the BEP in 2019 data on fixed costs and variable costs is required. To obtain variable costs, the performer is obtained from variable costs divided by the number of units produced, which is 200 units in a year. As for fixed costs, they are taken from electricity costs, marketing costs, and maintenance costs. The BEP calculation is as follows.

FC = Rp. 1.100.000 P = Rp. 30.000 per unit VC = Rp. 4.700.000/200 unit = Rp. 23.500

$$BEP = \frac{FC}{P - VC} = \frac{Rp. \ 1.100.000}{Rp. \ 30.000 - Rp. \ 23.500} = 169.23 \text{ unit}$$

$$BEP = \frac{FC}{1 - \frac{VC}{P}} = \frac{1.100.000}{1 - \frac{23.500}{30.000}} = Rp. 5.076.923,07$$

Sales Volume =  $\frac{\text{income}}{\text{selling price}} = \frac{5.350.000}{30.000} = 178,33 \text{ unit}$ 

T BEP =  $\frac{\text{BEP products}}{\text{sales volume}} = \frac{169,23}{178,33} = 0,94 \text{ year}$ 

The results of the BEP calculation obtained results for BEP per unit, which is 169.23 units, and for BEP rupiah, the result is IDR. 5,076,923.07, meaning that with a minimum of 170 cups / cup in one month, this business has been able to return the owner's capital.

#### DISCUSSION

The Cijambu Coffee showed that its business performance was limited to the ability to expand market size and production capacity. In other wise, the business runner very well and showed such sustainability performance based on financial feasibility evaluation.

The Cijambu Coffee played its role as small enterprise with small capacity of production in the large population of coffee market even in its region. Market saturation and the change of people life style in the local or national market might be the main challenge for the enterprise to make it growth. The B to C market system may be the effective for this period, but it takes a lot of effort and cost more in operation for small lot of order.

The technology of production serviced the raw material, coffee cherry it green bean but the roasting processing it used outsourcer's service. This overreliance might results risk of quality uniformity and production availability. In finance, this situation might impact to bad performance of competitive price.

Financial evaluation showed the Cijambu Coffee has feasible business. Although for small enterprises 3 years of payback would need the resilience such long run business. The business risk mitigation hasn't been studied in this research. Commonly, SME's financial risk in Indonesia depend on owner's capital issue. Most small enterprise in Indonesia is non-bankable. In other hand, one of the critical factors of community coffee industry is capital availability and good quality resources (Prajitiasari, 2013)

The enterprise sustainability also depends on value chain. The margins that were taken by parties along the chain will determine business process continuity. The research showed a case of small margin taken by distributor party (Atiqah et al, 2021). This might impact to lower performance in wholesaling process in downstream and loss of resources acquisition. And it could be similar case to upstream parties such in community plantation that costs farmers and fertilizer. In acquiring upstream and downstream resource along supply chain, the enterprise needs to offer good bargain.

#### CONCLUSION

Based on the research that has been done, this coffee shop business is worth running because: (1) The market size of the product is larger than the level of supply in the region. Thus, Cijambu Coffee's market is feasible for years ahead even to expand the market; (2) Distinctive taste of the product come from unreplaceable geographic area of coffee plantation that makes Cijambu Coffee has competitive advantage; (3) Technically, the necessary premises and tools as well as operational costs are still affordable; (4) After going through the calculation process, it can be Net Present Value with a value of IDR 2,350,000, Pay back Perode with a value of 2.9 years, Internal Rate Ratio with a value of 27.88%, and unit Break Event Point 169.23 units, and the value of Break Event Point rupiah amounting to Rp. 5,076,923.07; (5) The Cijambu Coffee must be aware of those situations and start to plan for business growth: market expansion and production capacity increase strategy by enhancing the technology, skill and knowledge. B to B market strategy has to be initiate with potential larger scale business partner to ensure the continuity of demand in large orders. Investing in technological asset and acquire more productive resources (plantation supply, instant coffee factory, exporter, tourism sites, and other parties in coffee business supply chain) to expand capacity are needed with the carefully future forecast and accurate strategy formulation for few years in developing enterprise.

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