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BUSINESS FEASIBILITY ANALYSIS OF PROCESSED SWEET POTATO PRODUCTS AT MSME KARYA INDAH BANDORASA WETAN

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Abstract

Sweet potato processing is a vital part of the local economy. In this study, the business costs incurred and feasibility of processing sweet potato product businesses in the Malaysian Small and Medium Enterprises (MSME) Karya Indah in Bandorasa Wetan are analyzed. The research is based on a census technique, namely, the MSME Karyan Wetans, which is used as the population and sample in the research. The business costs are calculated to calculate various costs associated with running a business consisting of fixed costs and variable costs. The acceptance feasibility ratio was found to be 1.455, so it is greater than 1 and is in the feasible and feasible category. This research offers practical guidance for MSMEs in assessing their operational efficiency and helps business owners make informed decisions about investment and expansion. Furthermore, it contributes to the broader understanding of sustainable business practices in the agricultural processing sector, specifically focusing on sweet potato products. Moreover, analyzing the impact of technological improvements or more efficient production methods on reducing costs and increasing productivity could provide valuable insights for enhancing business operations.

Keywords: Local wisdom, Feasibility, Kuningan, Sweet Potatoes, MSMEs

INTRODUCTION

Sweet potato farming has become a unique local wisdom for the people of Kuningan Regency because farming activities have been carried out for decades and many farmers depend on sweet potato farming for their living. The Kuningan Regency area has climatic conditions that are suitable for cultivating sweet potatoes, including temperatures around 24° C to 30° C, rainfall evenly throughout the year, sufficient sunlight and relatively humid humidity. Apart from that, soil conditions also support the growth of sweet potatoes, including: the soil is classified as loose with a high organic matter content thereby improving soil structure, water retention and nutrient availability, soil pH ranging from 5.8 to 6.2 (Aliyani et al., 2013).

Abundant sweet potato production in Bandorasa Wetan Village opens up great opportunities for MSMEs to increase added value to this commodity. MSMEs can take advantage of this wealth of raw materials to develop innovation and increase the competitiveness of local products. MSMEs play an active role in processing sweet potatoes into value-added products such as processing them into snacks or other creative products. Apart from that, the presence of MSMEs can strengthen Bandorasa Village and Kuningan Regency as competitive sweet potato production centers.

Sweet potatoes are an agricultural commodity that has quite significant economic value (Wulandari & Nauly, 2022). Sweet potatoes not only provide food security, but can also help drive the wheels of the local economy, create jobs and make a positive contribution to the development of a region's agricultural sector (Laili & Diartho, 2018). Sweet potatoes are an integral part of government programs in the form of sustainable development strategies (Halimah et al., 2021).

People in Kuningan Regency not only have the knowledge to choose sweet potato varieties that are resistant and suitable for their region, but farmers also have sweet potato cultivation techniques that have been tested for years (Wulandari & Nauly, 2022). Sweet potato cultivation is not only an economic activity, but has become an integral part of the lives of Kuningan Regency farmers. The success of sweet potato cultivation not only provides food security and diversification but also enriches local heritage, agricultural traditions and builds a local wisdom identity that differentiates it from other regions.

In general, sweet potato production in Kuningan Regency in 2021 will reach 121,978 tons. Around 10,000 tons are produced by farmers in Bandorasa Wetan Village. The majority of farmers in Bandorasa Wetan Village grow sweet potatoes, so this village is one of the contributors to sweet potato production in Kuningan Regency. Sweet potato production in Bandorasa Wetan Village reaches 25-50 tons per day.

MSME Karya Indah is an MSME which operates in the food sector as a sweet potato processor which purchases raw materials directly from farmers in Bandorasa Wetan Village with a capacity of 1 quintal per day. This MSME has been established since 1997 and is a pioneer in Bandorasa Wetan Village. This business activity involves housewives in Bandorasa Wetan. The products produced by this MSME include sweet potato cremes, gemblong, sweet potato sticks and chips, production capacity increases 100% during Islamic holidays and New Year celebrations. MSME Karya Indah collaborates with small shops and gift shops in Kuningan Regency to market the products it produces. Apart from that, this business also serves customers who come directly to the production site.

Many MSME players are competing with each other to improve their competitiveness and performance. This increase in competitiveness can be achieved by applying technology to obtain optimal results. The growth of the sweet potato processing industry has resulted in the economic potential opening up significantly (Afzal et al., 2021). Increasing sweet potato production not only creates new jobs but also provides extensive business opportunities in the sweet potato processing industry.

Therefore, Karya Indah MSMEs need to utilize the resources they have in order to increase efficiency. The more efficient a business is, the more efficient its use of input will be. Karya Indah MSMEs can also improve their products by reducing production costs and increasing their competitiveness. So that in the end it can help MSMEs to achieve sustainability in a sustainable manner. In this study, the author considers it important to carry out it based on the idea that with this analysis it is possible to determine the cost and profit analysis obtained by Karya Indah MSMEs and also to identify business risks and opportunities. Thus, business actors' understanding of financial aspects is crucial to ensure business continuity and success amidst intense competition.

The purpose of this research is to determine the business costs incurred and analyze the feasibility of processing sweet potato product businesses in the MSME Karya Indah Bandorasa Wetan. The contribution of this research lies in its detailed analysis of the business costs and feasibility of sweet potato processing within the MSME Karya Indah in Bandorasa Wetan. By evaluating the financial aspects, such as cost structures and profitability, the study provides valuable insights into the economic viability of small-scale food processing businesses. This research offers practical guidance for MSMEs in assessing their operational efficiency and helps business owners make informed decisions about investment and expansion. Furthermore, it contributes to the broader understanding of sustainable business practices in the agricultural processing sector, specifically focusing on sweet potato products.

The framework for thinking in this research is in Figure 1.

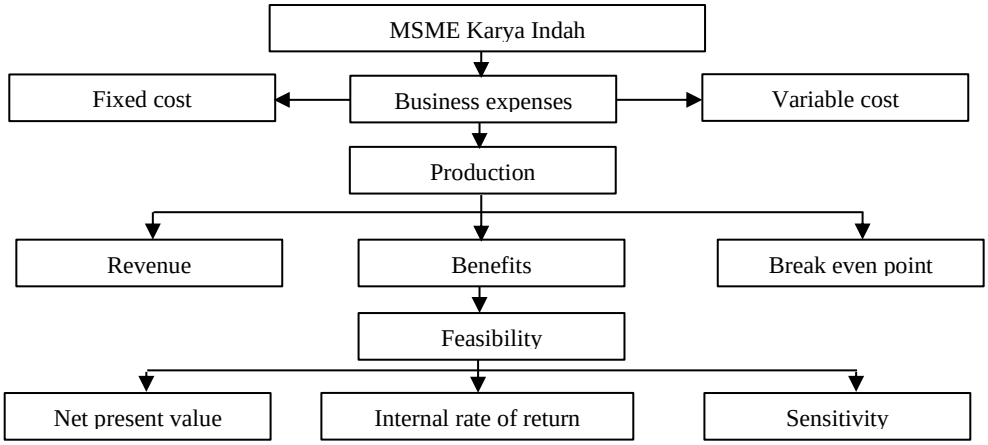

Figure 1. Framework of Thought

RESEARCH METHOD

This research was conducted at Karya Indah MSME located in Bandorasa Wetan Village, Cilimus District. The time of the research is June 2024. This research design is classified as quantitative descriptive. The research technique used is a census technique, namely Karya Indah MSME which is used as the population and sample in the research.

Research data analysis was carried out in several stages.

Cost Analysis

Cost analysis is carried out to calculate various costs associated with running a business consisting of fixed costs and variable costs. Fixed costs are costs that do not change regardless of the level of production carried out in the business, while variable costs are costs that change along with changes in the volume of production or sales carried out in the business (Dunia et al., 2018).

Acceptance Analysis

$$TR = P\ x\ Q$$

Information :
TR : Total Revenue or total receipts
P : Price or product price per unit
Q : Number of products sold

Income Analysis

$$\pi = TR - TC$$

Information :
π: Income
TR : Total Revenue
TC : Total Cost

Break Even Point Analysis

1) BEP on Production Volume:

$$BEP\ Q = \frac{TC}{P} = Kg$$

Information :
BEP : Break Even Point (Breakeven Point)
TC : Total Cost (Total Cost)

P : Product Unit Price

2) BEP on Production Prices

$$BEP\ P = \frac{TC}{Y} = Rp/Kg$$

Information :
BEP : Break Even Point (Breakeven Point)
TC : Total Cost
Y : Number of Products

Net present value analysis

$$NPV = \sum_{t=0}^{T} \frac{CF_t}{(1+r)^t} - i$$

Information
CF_t : Net cash flow in time period t
r : Interest rate (rate of discount)
T : Total time period
i : Initial investment

Analysis of internal rate of return

$$IRR = \sum_{t=0}^{T} \frac{CF_t}{(1+IRR)^t} - i = 0$$

Information
CF_t : net cash flow in time period t
IRR : internal rate of return
T : total time period
i : initial investment

Sensitivity analysis

Gilarso (2008) stated that several patterns of change in this research refer to the following patterns:

a) Revenue fell 10% and total costs remained constant
b) Revenue remains constant and total costs increase by 10%
c) Revenue fell 10% and total costs rose 10%.

RESULT AND DISCUSSION

Cost Analysis

Business costs are a nominal amount spent by the industry for the purposes of the cassava chips production business. The costs incurred by farmers are used to purchase production facilities such as raw materials, supporting facilities and other costs (Murtadha et al., 2019). In business activities that are profit oriented, the role of costs plays a very important portion, without supporting costs the business will not be realized because production facilities cannot be purchased and paid for by business actors (Zaman et al., 2020).

Fixed Cost

Table 1. Fixed Investment Costs

No	Units	Cost	Economic Month	Depreciation Value
1	Milling machine	300,000	24	12,500
2	Knife	100,000	12	8,333
3	Scissors	60,000	12	5,000
4	Grater	100,000	12	8,333
5	Blender	800,000	12	66,667
6	Motorcycle	7,000,000	60	116,667
7	Square baking dish	150,000	24	6,250
8	Wooden mold	15,000	24	625
9	Basin	100,000	12	8,333
10	Large frying pan	300,000	36	8,333
11	Big table	150,000	60	2,500
12	Wooden table	500,000	60	8,333
13	Siler machine	400,000	36	11,111
14	Showcase	3,000,000	120	25,000
15	Rack	1,000,000	120	8,333
16	Regulators	300,000	36	8,333
17	Gas cylinders	450,000	36	12,500
18	Stove	600,000	36	16,667
19	Shoes/Shoes	60,000	24	2,500
20	Oil filter	100,000	24	4,167
21	Calculator	100,000	24	4,167
22	Chair	200,000	24	8,333
23	Light	300,000	24	12,500
24	Terminal	300,000	24	12,500
Total				377,986

Fixed investment costs are calculated based on the depreciation value of the asset, which is IDR. 377,986 calculated in the active month. The highest depreciation value is for motor vehicles used to deliver orders to consumers, namely Rp. 116,667 while the smallest depreciation value is for the wooden mold used to mold the dough, namely Rp. 625. Fixed investment costs are non-cash expenses, the nominal amount of money used to obtain equipment that is used for the long term according to the economic life of the equipment. This cost is considered a high expense, but can be calculated based on the depreciation value each month. Other fixed costs are non-investment fixed costs which are paid in cash every month.

Table 2. Non-Investment Fixed Costs

No	Units	Cost Value
1	Rent a building	250,000
2	Electricity	200,000
3	Water	150,000
	Total	600,000

Non-investment fixed costs in one month of production period are Rp. 600,000. The highest cost is the rental of buildings used for production activities with a monthly value of

Rp. 250,000, building rental fees paid annually. Then, the lowest cost is the cost of water used for the production process per month Rp. 150,000. The accumulated investment fixed costs and non-investment fixed costs incurred by MSME Karya Indah is IDR. 977,986. These non-investment fixed costs are costs that are paid in cash every month with a relatively stable nominal amount.

Costs remain a crucial element that must be understood by business actors in the context of financial management and investment planning (Marlina, 2017). Good financial management can determine business strategy (Basir & Hanafi, 2019). One of Karya Indah's MSME strategies in managing fixed costs is by implementing investment goods on a rental basis, such as building rentals, which require large initial costs in building construction.

Variable Costs

Table 3. Variable Costs

No	Cost	Units	Price	Total
1	Sweet potato	1,000	4,000	4,000,000
2	Oil	230	14,000	3,220,000
3	Flour	60	12,000	720,000
4	White sugar	22	14,000	308,000
5	Brown sugar	130	28,000	3,640,000
6	Sesame	0.5	50,000	25,000
7	Packaging	1,968	750	1,476,000
8	Gas	36	20,000	720,000
9	Labor	130	40,000	5,200,000
Total				19,309,000

Table 3 shows that the variable costs incurred by MSME Karya Indah in the current month period were Rp. 19,309,000. The highest variable cost component is labor amounting to Rp. 5,200,000 and the lowest variable cost is sesame, Rp. 25,000. The business carried out by MSME Karya Indah is classified as a traditional business which is reflected in the large need for labor. The sweet potato production process requires special skilled workers who are able to maintain product quality.

The workforce used by MSME Karya Indah comes from relatives and neighbors because they have good personal relationships so they can maintain loyalty. Workers who are classified as close people are based on social relationships and trust that have been built between business owners and workers so that they can increase work effectiveness and reduce the risk of incompatibility (Lestari & Santoso, 2024). Furthermore, Budiman & Herkulana (2021) stated that MSMEs generally consider kinship in selecting workers because they are considered more reliable and easier to coordinate work.

Reception

Table 4. Acceptance

No	Product	Volume	Price	Total
1	Syst	304	15,000	4,560,000
2	Chips	480	15,000	7,200,000
3	Gemblong	144	15,000	2,160,000
4	Kremes	1,040	15,000	15,600,000
Total				29,520,000

MSME Karya Indah produces 4 types of products consisting of cystic, chips, gemblong and cremes products. The highest production quantity was 1,040 sweet potato cremes and the lowest production was 144 sweet potato gemblong. This production quantity is influenced by market demand, meaning that the sweet potato creme product is the most popular product on the market and production is carried out every day.

The amount of business revenue can describe the production capacity and marketing performance of the business (Permata et al., 2023). Business receipts amounting to Rp. 29,520,000, business revenues are getting higher, showing that MSMEs are able to reach the market well. Feasibility of acceptance can be calculated based on the ratio between revenue and total costs using the formula:

$$\frac{R}{C} Ratio = \frac{29.520.000}{20.286.986} = 1{,}455$$

The acceptance feasibility ratio was found to be 1.455, so it is greater than 1 and is in the feasible and feasible category. This condition means that the Rp. 1,000 spent can generate income of Rp. 1,455. The efforts carried out by MSME Karya Indah are able to cover the costs incurred and provide a surplus that can be used for reinvestment to increase revenues.

This revenue ratio value indicates that the sweet potato processing business carried out by MSME Karya Indah has the potential to be developed further because it is quite supportive of business sustainability. A positive R/C ratio value can help business actors plan more effective production and marketing strategies and can increase income and welfare of business actors (Hidayat et al., 2023).

Income

Table 5. Income

No	Units	Value
1	Fixed cost	977,986
2	Variable costs	19,309,000
3	Total cost	20,286,986
4	Reception	29,520,000
5	Income	9,233,014

The business income of MSME Karya Indah in one month of the production period is IDR. 9,233,014 which is the result of a reduction between total revenue and costs. This figure reflects positive results from operational activities carried out, meaning that business activities are still able to operate efficiently and cover costs. Revenue feasibility can be analyzed using the income to cost ratio using the following formula:

$$\frac{B}{C} Ratio = \frac{9.233.014}{20.286.986} = 0{,}455$$

Subtracting between revenue and business costs, the ratio of income to total costs produces 0.455, meaning that from Rp. 1,000 spent, it produces income of Rp. 455. The income ratio is relatively low due to high business costs, but Karya Indah MSMEs are still able to generate positive income.

A small revenue ratio tends to have room to improve cost management and needs to consider increasing sales volume, product diversification and production cost efficiency (Zaman et al., 2020). Furthermore, the income ratio can be increased through several steps including improving product quality, marketing effectiveness and product innovation (VS et al., 2023).

Business Analysis

Break even point

Break even points can be reviewed based on production and prices in the current month, namely:

a) Production BEP

$$BEP\ Q = \frac{20.286.986}{15.000} = 1.352\ unit$$

The results of the break even point analysis of production are 1,532 units so the production amount must be greater than that amount for the business to make a profit. Production of processed sweet potatoes produced by MSME Karya Indah in the current month was 1,968 units, indicating a production surplus of 436 units from the break even point.

b) BEP Price

$$BEP\ P = \frac{20.286.986}{1.968} = Rp.10.308$$

The results of the price break even point analysis are Rp. 10,308 so the product price must be greater than this amount for the business to make a profit. The price for processed sweet potato products applied by MSME Karya Indah is IDR. 15,000 so the price is greater than the minimum price with a price margin of Rp. 4,692.

Net present value

$$NPV = \frac{9.233.014}{(1 + 0{,}0052)^1} - 977.986 = 8.207.265$$

The net present value obtained is Rp. 8,207,265. This NPV shows that the present value of the net cash flow generated by the business is greater than the initial investment costs incurred so that it can be categorized as financially feasible. This positive NPV value indicates that Karya Indah MSMEs are not only able to cover operational and investment costs but can also provide profits in the short term and generate added value.

Internal rate of return

The internal rate of return is the discount rate that makes the NPV equal to zero. Internal rate of return analysis, namely:

$$0 = \frac{9.233.014}{(1 + 0{,}0625)^1} - 977.986 = 7.711.910$$

So, the value of NPV 2 is Rp. 7,711,910, then the IRR value can be calculated using the following formula:

$$IRR = \frac{0{,}0052 + 8.207.265}{8.207.265 - 7.711.910} \times (0{,}0625 - 0{,}0052) = 0{,}949$$

The Internal rate of return value shows the expected rate of return from an investment in a business. A value of 0.949 or 94.9% indicates that the business can be expected to provide an annual return of 94.9% on the investment made. The value of this analysis is greater than 6.25% so this investment produces added value and can be considered a good choice.

Sensitivity

Sensitivity analysis namely:

a) Revenue falls 10% and total costs remain constant

Karya Indah's business income for the current month is Rp. 9,233,014 so that when it falls 10% it becomes Rp. 8,309,712. Analysis that can be carried out is:

$$Sensitivity = \frac{8.309.712}{20.286.986} = 0{,}409$$

The sensitivity value with a 10% decrease in income is 0.409, so it shows a positive value and is feasible to do. A 10% decrease in revenue creates an earnings ratio of 0.409. This means that the cost is Rp. 1,000 spent can generate income of IDR. 409.

b) Revenue remains constant and total costs increase by 10%

Karya Indah's total business costs for the current month are Rp. 20,286,986 so that when it rises 10% it becomes Rp. 22,315,684. Analysis that can be carried out is:

$$Sensitivity = \frac{9.233.014}{22.315.685} = 0{,}413$$

The sensitivity value with a total cost increase of 10% becomes 0.413 so it shows a positive value and is feasible to do. This increase in total costs creates a ratio of 0.413. This means that the cost is Rp. 1,000 spent can generate income of IDR. 413.

c) Revenue falls 10% and total costs rise 10%.

Operating income fell 10%, namely Rp. 8,309,712 which is compared to the total cost increase which rose 10% to Rp. 22,315,685. Analysis that can be carried out is:

$$Sensitivity = \frac{8.309.712}{22.315.685} = 0{,}372$$

The sensitivity value with a decrease in income and an increase in total costs of 10% makes the ratio 0.372. This value shows a positive value and is feasible to do. This income ratio is 0.372. This means that the cost is Rp. 1,000 spent can generate income of IDR. 372.

CONCLUSION

Karya Indah MSME, a sweet potato processing business, has reported operating costs of IDR 20,286,986, including fixed and variable costs. The business generated business receipts of 29,520,000 and income of 9,233,014, with a break-even point of 1,352 units and a price of Rp. 10,308 per unit. The net present value for the month is Rp. 8,207,265, with an IRR of 94.9%, exceeding the bank interest rate. The company's sensitivity analysis indicates that even with a 10% change in total revenue and costs, the company still generates revenue. Future research should explore the business's scalability and growth potential, considering changes in operating scale, market expansion, and product diversification. Additionally, the long-term sustainability of the business should be considered, considering external factors like market demand fluctuations, raw material availability, and competitive pricing strategies. Technological improvements or more efficient production methods could also provide valuable insights for enhancing operations.

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