



## Grand Strategy Matrix Analysis of Terubuk Fish (*Tenualosa macrura*) Crackers Business in the Fish Processing Unit (UPI) of Bengkalis Regency, Riau Province

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### ABSTRACT

Business analysis is a crucial method for determining the feasibility of a business. This is especially true in the fishery industry, where enterprises involved in fishery product processing are influenced by fishing seasons. This study aimed to assess the feasibility of a fish crackers processing business in Bengkalis Regency, Riau Province, through short-term and long-term feasibility analysis and to formulate appropriate development strategies. Data were analyzed using short-term business feasibility analysis, including metrics such as R/C ratio, rentability, and break-even point, as well as long-term business feasibility analysis, encompassing net present value (NPV), net B/C ratio, internal rate of return (IRR), and payback period. SWOT analysis was implemented by using the grand strategy matrix. The study results indicated that the fish cracker processing business generates an annual income of Rp. 315,000,000, with incurred costs amounting to Rp. 31,450,300 per year. The average monthly profit for the fish crackers processing business in the Bengkalis district was Rp. 9,599,700, totaling Rp. 115,196,000 annually. The fish crackers processing business analysis in the Bengkalis district reveals an NPV of Rp. 76,133,000, a net B/C ratio of 3.66, an IRR of 52%, and a payback period of 1.54. The fish crackers processing business was feasible and categorized as a fast return on capital. The business was positioned in quadrant I (Progressive) in the grand strategy matrix, indicating its feasibility for further development.

### INTRODUCTION

Bengkalis Regency is located on the east coast of Sumatra Island and is one of the 11 administrative regions of Riau Province, with Bengkalis as its capital. Bengkalis region covers an area of 30,646.83km<sup>2</sup> and comprises land, sea, and islands. It is

strategically positioned on the edge of the international shipping lane between the Malacca Strait and within the economic growth triangle formed by Indonesia, Malaysia, and Singapore (Thamrin, 2019). This strategic location highlights its potential for promising marine resources to be developed in the future.

The 'Terubuk' fish (*Tenualosa macrura*) is economically significant, with an exceptionally high selling value, especially for its eggs. Most of these fish are harvested by fishermen operating in the waters of Bengkalis, Riau (Thamrin, 2019). Fishing companies aiming for entrepreneurship must ensure sustainable profits. Therefore, one crucial step is to conduct a thorough business analysis. Analyzing fish product processing businesses involve conducting a financial audit to determine the business's level of success and whether it is worth continuing (Harahap *et al.*, 2021).

Several studies related to business feasibility have been carried out, including: the potential of the "Indofishme" business as a healthy and nutrient-rich alternative to instant noodles (Fitriana *et al.*, 2022); an analysis of the feasibility of catching catfish (*Pangasius* sp.) in Kampar Regency, Riau Province (Shalichaty *et al.*, 2022); a sustainability analysis of zero-energy consumption data centers with free cooling, waste heat reuse, and renewable energy systems (Güğü̈l *et al.*, 2023); a conceptual design and feasibility analysis of a megawatt-level low-enriched uranium heat pipe-cooled reactor core (Li *et al.*, 2023); the feasibility of reactor core design to reproduce and burn with nitride fuel and lead coolant (Sambuu *et al.*, 2023); the feasibility of hybrid solar energy systems in conservation parks: technical, economic, and environmental analysis (Sreenath *et al.*, 2023); and a feasibility analysis of negative stiffness dampers to improve the seismic performance of bottom-insulated liquid storage tanks (Zhu *et al.*, 2023).

In developing a strategy for enhancing the value and competitiveness of fishery products among UPI MSMEs in Bengkalis Regency, a SWOT analysis was conducted to identify both internal and external aspects affecting UPI MSMEs. Internal factors originate from within the company itself, and they encompass the strengths and weaknesses of the business, considering its past, present, and future. These internal factors are instrumental in determining the strengths and weaknesses of UPI MSMEs, thereby aiding in the formulation of development strategies to enhance their business.

According to Pett *et al.* (2021), to help improve rural communities, small businesses often seek new and improved ways to operate their business models and find suitable business tools. External factor analysis includes factors outside the business environment influencing business operations. Business owners must analyze potential occurrences, such as threats and opportunities, to anticipate and address these possibilities without hindering their business operations, especially in the future.

Various efforts related to business development implemented in programs, such as creating formal and informal mechanisms providing additional contacts and networks, are crucial initiatives for development. Exhibitions, contests, events, and social networks support knowledge exchange and the development of entrepreneurs' social capital, offering significant opportunities to access new knowledge and create collaborative networks for more immersive and creative experiences (Dias & Silva, 2021). However, new innovations in similar fish cracker products have brought about new challenges regarding appropriate marketing strategies and the analysis needed to determine business

feasibility. One widely used analysis is the SWOT analysis using the grand strategy matrix.

According to **Teoli et al. (2022)**, SWOT analysis is one of the tools that can be utilized to analyze the marketing strategy. This analysis helps in determining both internal factors of the company, such as strengths and weaknesses, and external factors, such as opportunities and challenges. **Ben-Abdallah et al. (2022)** also stated that SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) is a method to observe the external and internal marketing environment. **Putra and Basuki (2023)** further added that the use of IE matrix analysis aims to ascertain the correct strategic position and alternative strategies for a company, enabling it to face competition and achieve business growth in the future. This research promotes the performance of MSMEs in coastal areas by using UPI objects. Thus, the main research finding was an MSME business strategy that can be developed to encourage Local Economic Resource Development (LERD) in coastal areas to improve the performance of UPI MSMEs in coastal areas to support maritime development based on local wisdom. This research aimed to assess the business's feasibility through short-term and long-term feasibility analyses and formulate appropriate strategies for developing fish cracker processing businesses in Bengkalis Regency, Riau Province.

## MATERIALS AND METHODS

### 1. Time and place

This research was conducted at the Fish Processing Unit (UPI) Bengkalis Regency, Riau province. The current study was conducted for six months, from January to June 2023.

### 2. Sampling method

The sampling method employed a saturated sampling technique. This choice was made due to the limited number of fish cracker companies in the Bengkalis sub-district, specifically 12 active companies. Hence, the research sample consists of these 12 fish cracker companies located in the Bengkalis sub-district, Bengkalis district, Riau province.

### 3. Data analysis

#### 3.1. Short-term business feasibility analysis

##### a. Revenue cost ratio (R/C ratio)

According to **Riyanto (2011)**, the revenue cost ratio analysis compares total income and costs.

The formula used was:

$$\text{Ratio R/C} = \text{TR/TC} \dots \dots \dots (1)$$

Notes:

TR = Total income (Revenue)

TC = Total cost (Cost)

The criteria were:

R/C < 1, business suffers losses

R/C > 1, business makes a profit

R/C = 1, the business has a break-even point (no profit, no loss)

### b. Profitability

Profitability is the ability of a company with working capital to generate profits. According to **Romadloni and Budi (2018)**, the profitability formula can be obtained using the following formula:

$$\text{Profitability} = (\text{Business Profit})/(\text{Business Capital}) \times 100\% \dots\dots\dots(2)$$

Information:

L = The total profit earned during a certain period

M = Capital or assets used to generate profits

### c. Break-even point (BEP)

According to **Kusuma and Mayasti (2014)**, BEP is a point in the amount of production or sales that must be made with the aim of the costs incurred can be recouped or the value at which the profit received by a business is zero. The BEP formula is:

$$\text{BEP (unit)} = \text{FC}/(\text{P}-\text{VC}) \dots\dots\dots(3)$$

$$\text{BEP (sale)} = \text{FC}/((1-\text{VC}/\text{P})) \dots\dots\dots(4)$$

Information:

FC = Fixed cost (Fix cost)

P = Selling price per unit

VC = Variable costs per unit (Variable costs)

## 3.2. Long-term feasibility business analysis

### a. Net present value (NPV)

According to **Umar (2007)**, net present value is the difference between investment and the present value of net cash receipts in the future. The advantage of using the NPV method is that it measures the profits of a business since this method focuses on the business's contribution to the level of prosperity of shareholders.

According to **Primyastanto (2015)**, net present value can be calculated using the following formula:

$$\text{NPV} = \sum_{t=1}^n (\text{Bt} - \text{Ct}) / (1+i)^t \dots\dots\dots(5)$$

Information:

Bt = Gross receipts of the t-th year

N = Economic age

Ct = Gross costs for the t-th year

I = Interest rate

Criteria used:

NPV > 0, the business is worthy of continuing its activities

NPV < 0, the business is not worthy of continuing its activities

NPV = 0, businesses experience BEP, namely the benefits obtained are only enough to cover production costs

### b. Internal rate of return (IRR)

According to **Hasugian *et al.* (2020)**, the internal rate of return (IRR) is a method for measuring the level of return on returns. Internal rate of return (IRR) is the interest rate between expected cash outflows and cash inflows. This method considers the time value of money, hence cash flows are discounted at the interest rate. According to **Umar (2007)**, mathematically, IRR can be calculated using the following formula:

$$IRR = i_1 + \left( \frac{NPV_1}{NPV_1 + NPV_2} \right) (i_1 - i_2) \dots \dots \dots (6)$$

Information:

$i_1$  = The average discount rate that produces NPV1

$i_2$  = The average discount rate that produces NPV2

Criteria:

IRR > interest rate, then the business is feasible

IRR < interest rates, business is not viable

**c. Net benefit cost ratio (Net B/C ratio)**

The net benefit-cost ratio is a method used to determine the ratio of benefits to the costs and investment required to generate profits. It involves comparing the positive NPV (Net present value) with the negative NPV. The net benefit-cost ratio value indicates the relationship between the benefits and costs associated with a business (**Gittinger, 2008**). According to **Primyastanto (2011)**, the net benefit-cost ratio can be calculated using the following formula:

$$\text{Net B/C} = (\sum \text{PV Net Benefit}) / (\sum \text{PV Investment}) \times 100 \dots \dots \dots (7)$$

Criteria:

Net B/C < 1, the business is not worth continuing

Net B/C > 1, then the business is worth continuing

**d. Payback period (PP)**

**Hasugian et al. (2020)**, the payback period is the time required to recover the initial investment outlay using cash flow. In other words, it represents the ratio between the initial cash investment and the cash inflow generated in a unit of time. The payback period (PP) can be calculated in two ways:

- Payback period formula if the cash flow from an investment project is the same every year

$$\text{Payback Period} = \frac{\text{Initial Investment}}{\text{Cash flow}} \times 1 \text{ year} \dots \dots \dots (8)$$

- Payback period formula if cash flow from an investment project is different every year

$$\text{Payback Period} = n + \frac{a-b}{c-b} \times 1 \text{ year} \dots \dots \dots (9)$$

Note:

$n$  = the last year where the amount of cash flow still cannot cover the initial investment

$a$  = initial investment amount

$b$  = cumulative amount of cash flow in the  $n$ th year

$c$  = cumulative amount of cash flow in year  $n+1$

According to **Kasmir and Jakfar (2014)**, the payback period criteria are as follows:

PP < 3 years, fast payback

PP 3-5 years, moderate returns

PP > 5 years, slow payback

**4. SWOT analysis**

Research methods explain the approach used in research, the population and research samples, operational definitions of variables, as well as data measurement tools

or methods for collecting data and data analysis methods. If a questionnaire is used as the data measurement tool, it is necessary to include the results of the validity and reliability tests of the research instrument. According to **Kusbandono (2019)**, the preparation process in planning a strategy involves three stages of analysis: the data collection stage (gathering information on external and internal factors), the analysis stage (external, internal matrix, Cartesian diagram, SWOT matrix), and the decision-making stage. The data collection stage involves collecting data and clarifying the events being studied. The analysis stage occurs after collecting supporting data. Once all the information is collected, it can be used to perform a SWOT analysis. Following the data analysis, several decisions can be made based on the company's conditions.

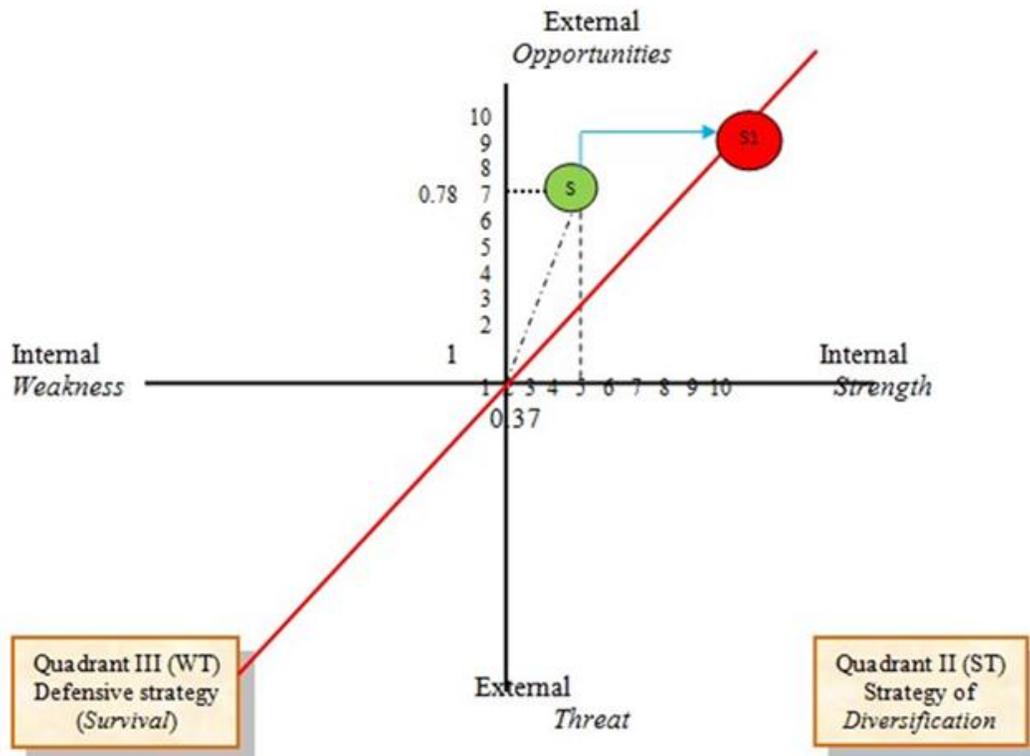
The description of the SWOT analysis diagram (Fig. 1) is as follows:

Quadrant 1: Very favorable situation. Organizations have the potential and power to exploit existing possibilities. The strategy adopted in these conditions supports aggressive growth policies (growth-oriented strategy).

Quadrant 2: Despite various threats, the organization still has internal strengths. The strategy is to utilize strengths to take advantage of long-term opportunities through a diversification strategy (product/market).

Quadrant 3: The organization has enormous opportunities, even though it faces several internal limitations/weaknesses. The focus of this organizational strategy is to minimize internal problems within the company with the view of it can capture better opportunities.

Quadrant 4: Very unfavorable situation, the organization faces various internal threats and weaknesses. It would be best to immediately look for a defensive strategy (**Wiradana, 2012**).



**Fig. 1.** Grand strategy matrix diagram

## RESULTS AND DISCUSSION

### 1. Short-term financial analysis

#### 1.1. Capital

In running a business, a company needs capital since capital plays a vital role in every company. Capital or financing determines whether a company will operate or not, even though all the requirements for doing business are met, without capital, the business will not run normally as expected.

##### 1. Investment capital

Business investment capital for fish crackers in the Bengkalis sub-district is a sealer, flying scale, basin, para-para, steamer divider, brush, freezer and kneading machine. Consider Table (1) for detailed calculations.

**Table 1.** Investment capital for processing fish crackers

No	Investment type	Number (Unit)	Price (IDR/Unit)	Total price (IDR)
1.	Para-para	4 unit	400,000	1,600,000
2.	Steamer	1 unit	1,500,000	1,500,000
3.	Kneading machine	2 unit	3,500,000	7,000,000
4.	Freezer	3 unit	3,500,000	10,500,000
5.	Sealer	1 unit	170,000	170,000
6.	Flying scales	2 unit	125,000	250,000
7.	Basin	2 unit	30,000	60,000
8.	Paintbrush	2 unit	10,000	20,000
<b>Total</b>				<b>14,800,000</b>

##### 2. Depreciation (per year)

In the fish cracker processing business in the Bengkalis sub-district, Bengkalis district, Riau Province, there are depreciation expenses (cost use) of equipment that experience depreciation in this business. The calculation of depreciation for each item used in production is by dividing the total purchase price of the item by the technical life of the item. For detailed calculations see Table (2).

**Table 2.** Depreciation of investment capital in fish cracker processing business

No	Investment type	Number (Unit)	Price (IDR/Unit)	Total price (IDR)	Technical age (Years)	Depreciation in 1 year
1.	Para-para	4 unit	400,000	1,600,000	5	320,000
2.	Steamer	1 unit	1,500,000	1,500,000	5	300,000
3.	Kneading machine	2 unit	3,500,000	7,000,000	5	1,400,000
4.	Freezer	3 unit	3,500,000	10,500,000	5	2,100,000
5.	Sealer	1 unit	170,000	170,000	5	34,000
6.	Flying scales	2 unit	125,000	250,000	5	50,000
7.	Basin	2 unit	30,000	60,000	1	60,000
8.	Paintbrush	2 unit	10,000	20,000	1	20,000
<b>Total</b>				<b>14,800,000</b>		<b>4,284,000</b>

### 3. Fixed cost

Fixed costs in the fish cracker processing business are depreciation, electricity, maintenance and employee salaries (3 people). For detailed calculations consider Table (3).

**Table 3.** Fixed costs of fish cracker processing business

No	Description	Value (IDR)
1.	Shrinkage	357,000
2.	Electricity	150,000
3.	Maintenance	83,300
4.	Employee salary (4 people)	2,800,000
<b>Total</b>		<b>3,390,300</b>

\*) Depreciation costs per year are IDR. 4,284,000, - if per month, divided by 12 to become IDR. 357,000. Maintenance costs per year are IDR. 1,000,000, - if per month, that means divided by 12 to become IDR. 83,300.

### 4. Variable costs

The variable costs of the fish cracker processing business consist of puput fish, tapioca flour, salt, flavorings, food coloring, garlic, PP plastic. For detailed calculations use Table (4).

**Table 4.** Variable costs of fish cracker processing business

No	Description	Unit/Units	Unit price	Total price (IDR)
1.	Cracking fish	5kg	45,000	225,000
2.	Tapioca flour	25kg	10,000	250,000
3.	Salt	8ons	6,000	6,000
4.	Flavoring	0.5kg	25,000	25,000
5.	Food coloring	1 pack	3,000	3,000
6.	Garlic	0.5kg	14,000	14,000
7.	PP plastic	1.5kg	44,000	44,000
<b>Total</b>				<b>567,000</b>

\*) The total variable costs of the fish cracker processing business in 1 day are IDR 567,000,- if in 1 month that means times 30 days it becomes IDR 17,010,000.

### 5. Total Cost

Total costs are obtained from the sum of fixed costs and variable costs. For detailed calculations (Table 5).

**Table 5.** The average total cost of fish cracker processing business

No	Data	Value (IDR)
1.	Fixed cost	3,390,300
2.	Variable costs	17,010,000
<b>Total cost</b>		<b>20,400,300</b>

The largest percentage of total costs comprises variable costs. This is due to variable costs significantly influence the production capacity of the fish cracker

processing business. The fixed costs with the highest percentage are depreciation costs. Both of these costs play a crucial role in the operation of a fish cracker processing business and must be paid to ensure the smooth running of the business.

6. Business receipts (Income)

Calculations must be made in analyzing income by multiplying the price per unit by the total product produced. Based on the calculation results, with a price of IDR 55,000 per kg of fish crackers and total sales of can crackers at 25kg per day, the revenue obtained from the fish cracker processing business is IDR 1,375,000 per day. For details regarding the revenue calculation from the fish cracker processing business (Table 6).

**Table 6.** Revenue from fish cracker processing business

Reception	1x Production (Day)	1 month
Production (kg)	25 kg	750 kg
Selling price (IDR/kg)	50,000	50,000
<b>Amount (IDR)</b>	<b>1,250,000</b>	<b>37,500,000</b>

Number of fish crackers produced in 1 day:

= 25kg fish crackers

Total receipts = 25kg x IDR. 50,000

= IDR. 1,250,000

According to **Soekartawi (2003)**, revenue is the total value of products produced in a certain time, where the amount of revenue depends on the price and quantity of products produced. Revenue is obtained by multiplying the amount of production by the price per unit.

**2. Business feasibility analysis**

Business feasibility analysis is a study that analyzes a business or project by providing a feasibility assessment to consider whether the business/project is feasible. Business feasibility analysis consists of short-term analysis and long-term analysis. Short-term analysis includes R/C ratio, profit, profitability and break-even point. Meanwhile, the long-term analysis consists of net present value (NPV), internal rate of return (IRR), net benefit cost ratio (Net B/C ratio) and payback period (PP).

**A. Short-term analysis**

**1. R/C ratio**

$$\begin{aligned}
 R/C \text{ Ratio} &= \frac{TR}{TC} \\
 &= \frac{37,500,000}{20,400,300} \\
 &= 1.83
 \end{aligned}$$

Based on the RC ratio calculation results for the fish cracker processing business, a value of 1.83 was obtained. This means that the business is said to be profitable to run since the RC ratio value is > 1, following the RC ratio provisions.

**2. Profit**

Profits were calculated to determine the profit of running a fish cracker processing business. According to **Soekartawi (2002)**, business profit or net income is the amount of

income after deducting the costs incurred for business activities with the aim of the profit can be formulated:

$$\begin{aligned}\text{Profit} &= \text{Revenue (TR)} - \text{Total cost (TC)} \\ &= \text{IDR. 37,500,000.-} - \text{Rp. 20,400.300} \\ &= \text{IDR. 17,099,700}\end{aligned}$$

Hence, the profit/profit obtained in 1 month of this fish cracker processing business is IDR. 17,099,700.

### 3. Profitability

Profitability is the ability of a business to generate profits within a certain period using its working capital. The results of the profitability analysis for the fish cracker processing business showed a profit of 83.82% concerning the capital spent on operational activities. The concern regarding profitability is more critical than focusing solely on profits since substantial profits alone do not necessarily indicate efficient operations. Efficiency is determined by comparing the profits obtained with the capital that generated them. Therefore, a company should not only strive to increase profits but, more importantly, to enhance profitability. The objective should be achieving maximum profitability rather than maximizing profits (**Riyanto, 2011**).

$$\begin{aligned}\textit{Profitability} &= \frac{\textit{Operating profit}}{\textit{Venture capital}} \times 100\% \\ &= \frac{\text{IDR. 17,099,700.-}}{\text{IDR. 20,400,300.-}} \times 100\% \\ &= 83.82\%\end{aligned}$$

### 4. Break-even point (BEP)

Based on the Break-Even point calculation results, a total BEP result of IDR. 17,009,999.46 per month, meaning that this fish cracker processing business will reach a balance point (break-even point) after achieving a sales level of fish crackers on the IDR market of 17,009,999.46 per month.

$$\begin{aligned}\textit{BEP (sales)} &= \frac{FC}{\left(1 - \frac{VC}{P}\right)} \\ \textit{BEP (sales)} &= \frac{\text{IDR. 17,010,000}}{\left(1 - \frac{\text{IDR. 20,400,300}}{37,500,000}\right)} \\ &= \text{IDR. 17,009,999.46 per month}\end{aligned}$$

### B. Long-term analysis

Long-term analysis is a way to analyze how sustainable the business is, whether in 5 or 10 years it will experience improvement or even go bankrupt. Long-term analysis of the fish cracker processing business includes net present value (NPV), net B/C ratio, internal rate of return (IRR), and payback period (PP). The values of NPV, net B/C ratio, IRR, and PP in the fish cracker processing business are presented in Table (7).

**Table 7.** NPV, net B/C ratio, IRR, and payback period values in the fish cracker processing business

Description	NPV	Net B/C ratio	IRR	Payback period
VALUE	76.133.000	3.66	52%	1.54

The values of NPV, IRR, B/C ratio, and payback period depend on the income and expenses generated from the fish cracker processing business. A large NPV value, high IRR, a substantial net B/C ratio, and a quick payback period indicate significant returns. Conversely, if the NPV value is small, IRR is low, B/C ratio is minimal, and returns take longer. Interest rates, expenses, and income greatly influence the IRR value. The IRR value is also small when profits are small, whereas large profits result in a higher IRR value. The net B/C ratio is tied to income and expenses; lower expenses and higher income yield a greater net B/C ratio, and vice versa. The speed of capital return depends on the income and expenses. Higher-income and lower expenses lead to a faster return on capital, while lower income prolongs the return on capital.

**a. Net present value (NPV)**

Net present value is the difference between income and expenditure with a more than zero present value. This method uses a discount rate of 10% under the current microcredit interest rate. Based on the results of calculating the NPV value of the fish cracker processing business of Rp. 76,133,000,- this revenue value is more than 0, hence the business is said to be feasible and profitable. This is in accordance with **Primyastanto (2011)**, who states that if the present value of net cash receipts in the future is > than the present value of the investment, then the project is said to be profitable and is accepted. In contrast, if it is smaller (negative NPV), the project is rejected since it is considered unprofitable.

**b. Net B/C ratio**

The net B/C ratio analysis technique measures the feasibility of a business by comparing the net benefits from the concerned years with the net costs in the year that have been given the present value. The net value B/C ratio of the fish cracker processing business is 3.66. The business is feasible since the net B/C ratio value is greater than 1. This is in accordance with **Primyastanto et al. (2019)**; if the net B/C ratio value is greater than 1, then the project is considered profitable or feasible. However, the project is declared unfeasible if the net B/C ratio value is less than 1.

**c. Internal rate of return (IRR)**

The internal rate of return shows a business's ability to generate returns or its profit level. The internal rate of return for the fish cracker processing business is 52%. This calculation assumes a return on investment value per rupiah in one business year. The business remains profitable if the interest rate is below 52%. An investment is deemed profitable if its value exceeds the relevant interest rate. Based on the calculation results, the fish cracker processing business is profitable and feasible since the IRR value exceeds the required interest rate of 10%. According to **Husnan and Suwasono (1994)**, the internal rate of return (IRR) method calculates the interest rate that equates the present value of the investment with the present value of net cash receipts in the future. If

this interest rate is greater than the relevant interest rate (the implied profit rate), then the investment is profitable; if it is lower, it is considered detrimental.

#### d. Payback period

The payback period for investing in a fish cracker processing business is 1.54 years, which equates to 1 year, 5 months, and 4 days. The return on capital is categorized as 'fast' since it falls within the range of less than 3 years. According to **Kasmir and Jakfar (2014)**, a payback period value of less than 3 years categorizes the return on business capital as 'fast'.

### 3. SWOT analysis

SWOT analysis has been praised for its simplicity and used since the 1960s. However, in practice, it may not always yield efficient results and can sometimes lead to errors in decision-making. This is due to the traditional approach to SWOT analysis is based on qualitative analysis, where SWOT factors are often the manager's subjective view or the planner's assessment. Additionally, SWOT factors cannot be measured or ranked based on their significance to organizational performance. Furthermore, SWOT analysis should be evaluated by considering the customer perspective rather than solely focusing on organizational viewpoints (**Phadermrod *et al.*, 2016**). The strength and weaknesses of the internal factor analysis strategy is presented in Tables (8, 9). External factor analysis strategy (EFAS) opportunities and threats are also presented in Tables (10, 11).

**Table 8.** Strength of internal factor analysis strategy (IFAS)

No	Strength	Bobot (1-5)	Relative weight	Rating (1-4)	Score (Br x R)
1.	Has a PIRT certificate and is halal	4.125	0.058	2.57	0.17
2.	UPI UMKM products have their packaging and labels	4.5	0.063	2.375	0.15
3.	Existing for more than 3 years	4.25	0.060	2.125	0.13
4.	Grant equipment is available from the local government	3.5	0.049	1.875	0.09
5.	Business analysis is worth continuing	3.875	0.054	3.50	0.19
6.	Labor is relatively cheap	3.75	0.053	3.25	0.17
7.	Get support from the local community	4.25	0.060	3.50	0.21
8.	Affordable product prices	4.375	0.061	3.88	0.24
9.	Has a lower segment product market network	4.5	0.063	3.75	0.24
	<b>Amount</b>		<b>0.521</b>		<b>1.59</b>

**Table 9.** Weaknesses of internal factor analysis Sstrategy (IFAS)

No	Weakness	Bobot (1-5)	Relative weight	Rating (1-4)	Score (Br x R)
1.	The production house is integrated with the residence	4.625	0.065	2.625	0.17
2.	Raw material quality and availability	4.5	0.063	2.375	0.15
3.	Limited access to business capital	4.25	0.060	2.125	0.13
4.	Production facilities and technology are still simple	3.5	0.049	1.875	0.09
5.	Transport or transportation facilities are still limited	4.625	0.065	2.375	0.15
6.	Production hygiene sanitation	4.375	0.061	2	0.12
7.	Negotiation and export business skills are still low	4	0.056	2.125	0.12
8.	Financial bookkeeping is still done simply	4.5	0.063	2.125	0.13
	<b>Amount</b>		<b>0.482</b>		<b>1.06</b>
	<b>Total IFAS</b>		<b>1.000</b>		

**Table 10.** External factor analysis strategy (EFAS) opportunities

No	Opportunity	Bobot (1-5)	Relative weight	Rating (1-4)	Score (Br x R)
1.	Availability of raw materials at low prices	4.25	0.074	3.125	0.23
2.	The large population accounts for the share of consumers of processed products	4.25	0.074	3.375	0.25
3.	The export market is open because it is close to Malaysia	4.5	0.078	3	0.23
4.	The feasibility of a fish processing business is promising	3.875	0.067	3.25	0.22
5.	Value-added products and product diversification vary	4.5	0.078	3.375	0.26
6.	Riau provincial government support	4.125	0.072	3.125	0.22
7.	The sentiment of the majority of Muslims regarding halal and halal-certified products	4.25	0.074	3.125	0.23
8.	All ages can consume the product	4.375	0.076	3.5	0.27
	<b>Amount</b>		<b>0.593</b>		<b>1.91</b>

**Table 11.** External factor analysis strategy (EFAS) threat

No	Threat	Bobot (1-5)	Bobot relative	Rating (1-4)	Score (Br x R)
1.	Licensing and certification involve many agencies	4	0.070	2.125	0.15
2.	Fluctuations in raw material prices	3.625	0.063	2.875	0.18
3.	The quality of raw materials is threatened by the use of illegal chemicals	4.25	0.074	2.5	0.18
4.	Large company products dominate the market	4.125	0.072	3.125	0.22
5.	Level of competition with similar business actors	3.875	0.067	2.5	0.17
6.	Competitor products that are more contemporary/keep up with the times	3.5	0.061	2.375	0.14
	<b>Amount</b>		<b>0.407</b>		<b>1.04</b>
	<b>Total EFAS</b>		<b>1.000</b>		

### C. SWOT matrix and diagram

Based on the analysis of internal and external factors that can influence the business, business development strategies can be identified by looking at the issues, opportunities and threats that influence the SWOT matrix analysis and alternative development strategies (Table 12).

**Table 12.** SWOT matrix analysis

	<b>Strengths</b>	<b>Weaknesses</b>
	Has a PIRT certificate and is halal	The production house is integrated with the residence
	UPI UMKM products have their packaging and labels	Raw material quality and availability
	Existing for more than 3 years	Limited access to business capital
	Grant equipment is available from the local government.	Production facilities and technology are still simple.
	Business analysis is worth continuing.	Transport or transportation facilities are still limited
	Labor is relatively cheap	Production hygiene sanitation
	Get support from the local community	Negotiation and export business skills are still low
	Affordable product prices	

	Has a lower segment product market network	Financial bookkeeping is still simple
<b>Opportunities</b>	<b>S-O strategy</b>	<b>W-O strategy</b>
<p>Availability of raw materials at low prices</p> <p>The large population accounts for the share of consumers of processed products</p> <p>The export market is open because it is close to Malaysia.</p> <p>The feasibility of a fish processing business is promising.</p> <p>Value-added products and product diversification vary</p> <p>Riau Provincial government support</p> <p>The sentiment of the majority of Muslims regarding halal and halal-certified products</p> <p>The product can be consumed by all ages</p>	<p>Commitment to implement system consistently Management (ISO 22000, ISO 9001:2015; HACCP, GMP, sanitation and HALAL)</p> <p>Commitment and consistency in improving the quality and competency of human resources</p> <p>Improving the quality of the network distribution, and partnerships</p>	<p>Improvement of production facilities according to PIRT standards and technology so that fish processing production will increase</p> <p>Increasing product marketing information through promotions with coordination between related agencies in developing the market for processed fish products.</p>

#### D. SWOT diagram

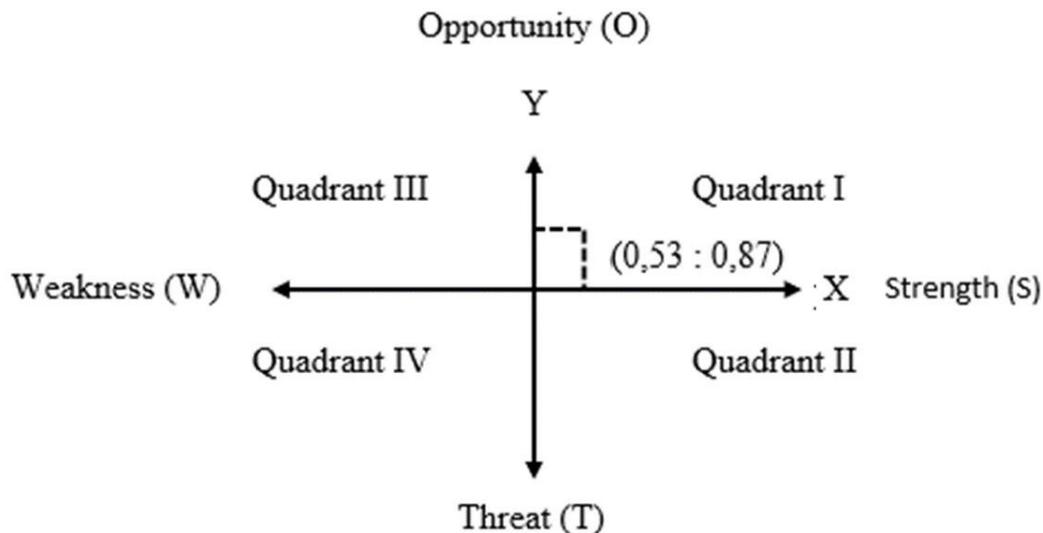
From the results of data processing on internal factors and external factors from the perceptions of UPI UMKM respondents, the scores for each factor were obtained as follows:

- 1) Score for strength factor : 1.59
- 2) Score for weakness factor : 1.06
- 3) Score for chance factor : 1.91
- 4) Score for threat factor : 1.04

➤ The horizontal axis (x) as an internal factor consisting of strengths and weaknesses obtained the coordinate value  $X = 1.59 - 1.06 = 0.53$

- Sumbu vertical (y) sebagai faktor eksternal yang terdiri dari peluang dan ancaman diperoleh hasil nilai koordinat  $Y = 1.91 - 1.04 = 0,87$

The results of the calculations for these axes obtained a value for the horizontal axis (x) of 0.53 and for the axis (y) of 0.87. The SWOT diagram image can be seen in Fig. (2).



**Fig. 2.** SWOT analysis diagram

The SWOT analysis diagram shows that based on the scoring results for internal and external factors, the coordinate value obtained is located in quadrant I (0.53; 0.87). This indicates support for aggressive growth policies using the SO (Strength-Opportunities) strategy. Referring to the factors in IFAS EFAS, the primary development strategies that can be implemented include enhancing commitment to implementing food management systems, such as GMP, HACCP, ISO 22000, and Halal; fostering entrepreneurial spirit and enhancing HR competency; improving distribution networks and partnerships; and enhancing collaboration with the community around UPI UMKM.

There were some limitations in this research. After the SWOT analysis was carried out, it should be continued with the AHP analysis to get the best decision from the alternatives arranged based on the criteria with the aim of the most appropriate strategy that will be obtained. In this study, the results of the business feasibility analysis, such as short-term and long-term analysis, were obtained. Therefore, it can be concluded whether UPI's fish cracker processing business is feasible or not to continue. UPI needs strategies to increase added value and be competitive based on the strengths, weaknesses, threats, and opportunities of UPI business.

## CONCLUSION

The average profit of fish cracker processing companies in Bengkalis regency is IDR 205,196,400 per year or IDR 17,099,400 per month. The NPV value in the fish cracker business analysis for Bengkalis Regency is IDR 76,133,000, with a net price ratio of 3.66, an IRR value of 52%, and a payback period of 1.54. Fish cracker processing is deemed feasible with a quick return on investment. The development of UPI in Bengkalis will present new challenges related to appropriate marketing strategies and analysis to determine business feasibility. UPI's position is in quadrant I (Progressive), signifying that the business is worthy of development.

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