# AN ANALYSIS OF THE CRISPY MUSHROOM BUSINESS FOR SMALL AND MEDIUM-SIZED ENTERPRISES (SMES) IN INDONESIA

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Untuk Memperoleh Gelar Sarjana Teknik Pada
Program Studi Teknik Industri

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**ANALISIS KELAYAKAN USAHA JAMUR TIRAM CRISPY DI KOTA PEKANBARU**
**(Studi Kasus: Jamur Crispy Maknyus)**

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# An Analysis of the Crispy Mushroom Business For Small And Medium-Sized Enterprises (SMEs) In Indonesia

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## Abstract

The purpose of this study was to determine the income and financial viability of the Crispy mushroom industry in Indonesia for Small and Medium-Sized Enterprises (SMEs). As indicators, four techniques are used: revenue/cost (R/C), benefit cost (B/C), return on investment (ROI), and break event point (BEP). Investment appraisal is used to establish whether a financial part of the transaction is possible, based on measurements against stated criteria. The evaluation technique offers several advantages and downsides. As a result, it is preferable to employ multiple methodologies simultaneously when evaluating a business to acquire the best results. It begins by calculating the entire revenue, which comes to 1.64. The total income and total manufacturing expenses exceed zero, resulting in a profit of Rp. 64. Return on Investment (ROI) can be defined as the ratio of net profit to costs in each business, which in this example is 64%. Break Event Point has two searches, one in rupiah and one in number of productions, and in this study, the results of the Break Event Point are 36 pcs, which means that if the Crispy Mushroom produces less than that amount from the total quantity of production, the business will be concerned about cost loss.

## Keywords
Business Analysis, Investment, SMEs, Feasibility Study.

## 1. Introduction
Indonesia is an agrarian country, where most of the people from all walks of life still make a living as farmers (Nurilla et al, 2013). The agro-industry sector is a big business opportunity currently in the Indonesian agricultural sector, one of which is quite popular is mushroom products (Fatria, 2017). This business opportunity in the agroindustry with mushroom products is a promising business, so there are not many business sectors for processed mushroom products, especially in the city of Pekanbaru. This research was conducted in one of the SMEs named Crispy Mushroom Business which is located on Jl. HR. Soebrantas, Panam, Km 15. Table 1. Sales Data for Crispy Mushrooms.

Table 1. Sales dan Revenue

| Period | Sales | Revenue (Rp) |
|---|---|---|
| January | 320 | 3.200.000 |
| February | 370 | 3.700.000 |
| March | 350 | 3.500.000 |
| April | 280 | 2.800.000 |
| May | 400 | 4.000.000 |
| June | 450 | 4.500.000 |
| July | 400 | 4.000.000 |
| August | 640 | 6.400.000 |
| September | 640 | 6.400.000 |

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Sales data for 9 months in the Crispy Mushroom business has fluctuate from month to month because the business of this mushroom product is starting to be in great demand, especially in Pekanbaru and the prospects are quite good, it is necessary to analyze the business feasibility of Crispy Mushroom to see whether the business is feasible or not to be developed in the future. Various aspects are seen to analyze the feasibility of this business, but the researcher chooses a business feasibility analysis from the financial aspect by using the Revenue/Cost (R/C) method to compare income with capital, then there is Benefit/Cost (B/C) to compare income with expenses. , Return of Investment (ROI) to see net profit, and finally there is a Break Event Point (BEP), which is to see the break-even point or return on capital from a business from Crispy Mushroom. The purpose of this study was to analyze the income and financial feasibility of the Crispy mushroom business For Small and Medium-Sized Enterprises (SMEs) in Pekanbaru City. Four methods are used as indicators, namely Revenue/Cost (R/C), Benefit Cost (B/C), Return of Investment (ROI) and Break Event Point (BEP). The limitation of the problem in this research is the use of data from January 2021 to September 2021 whose scope of research is in the Pekanbaru City area. The research was conducted at one of the Crispy Mushroom SMEs in Pekanbaru City. This research only focuses on discussing financial aspects, does not discuss marketing aspects or other aspects.

## 2. Literature Review

Indonesia is an agrarian country, where part of the community is still a livelihood as a farmer (Nurilla et al. 2013). One of the agro-industry sectors that is quite popular today is oyster mushroom products (Permana et al. 2019). Mushrooms that grow, especially in Indonesian forest areas, include quite a lot of kinds, according to (Anggraini et all. 2015). According to Abdisobar et al. (2014), in his research said that initially oyster mushrooms were only to cover human needs, along with the development of science, oyster mushrooms can be cultivated through planting media, namely sawdust. In the following years, mushroom processing increased slowly (Angkasa et al. 2020).

A business or business feasibility study is a work carried out as a precursor to establishing, developing, and expanding a business (Asnidar and Asrida 2017). A business feasibility study is research that includes various aspects, namely from aspects. market and marketing, aspect. law, social and cultural aspects, economic and financial aspects, technical and technological aspects, and management aspects (Sulastri, 2016). The broad meaning of a feasibility study is a very in-depth study of whether a business plan is successful and profitable (not only economic or financial benefits) but tends to look at broader benefits for the area or location where the business will be carried out. (Sucipto 2011).

The various benefits that arise from conducting a feasibility study, one of which is to reduce the risk of business losses (Pamungkas 2020). In order to conduct a feasibility study to reduce the threat of loss owned by business owners (Kasmir and Jakfar 2003). Determination of the feasibility of a business can be seen from several aspects. Determination of whether a business is feasible or not is done by providing an assessment of each aspect (Hamali, 2016). Various aspects are seen, one of which is the financial aspect (Risfan 2021). The financial aspect itself relates to funds, capital in a business. The financial aspect can also be said as the basis for the implementation of a desired investment. In the financial aspect, there are things that must be considered, namely cash flow (Cash Flow) and cash outflow (Cash Outflow) (Fitriani 2010). We can evaluate earnings better. This is based on the fact that the amount of profit and the certainty of its achievement are important information, which leads to the successful management of the company (Potkany and Krajcirova 2015).

Investment can also be interpreted as investment in an activity that has a relatively long period of time in various businesses (Sobana 2018). Investment appraisal is carried out to determine whether the financial aspect is feasible or not, based on measurements against the specified criteria. The criteria used by the company depend on the needs and the methods used. The assessment method has advantages and disadvantages. Therefore, in the assessment of a business, it is better to use several methods at once, so that the results obtained are better. Criteria. or techniques that can be used to determine the feasibility of a business, namely Revenue/Cost (R/C), Benefit/Cost (B/C), Return of Investment (ROI), and Break Event Point (BEP) (Asnidar and Asrida 2017).

1. *Revenue/Cost* (R/C)

   Revenue/Cost is a method used to determine whether a business is feasible or not, by comparing the level of income earned with the capital that must be issued. Usually calculated by the standard R/C Ratio 1 (Sajari et al, 2011):

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$$\text{R/C Ratio} = \frac{\text{Income}}{\text{Cost}} \tag{2.1}$$

Then the feasibility analysis of the R/C ratio is (Sucipto, 2011):

a. R/C > 1 = Worth/Profit.

b. R/C = 1 = BEP.

c. R/C < 1 = Not Worth / Loss.

2. *Benefit/Cost* (B/C)

Benefit/Cost (B/C) is the ratio between the gross income (benefit) that has been reduced with the overall cost that has been discounted. The formula used is (Sucipto, 2011):

$$\text{B/C} = \frac{\sum_{i=1}^{n} B_i\,(1+r)^n}{\sum_{i=1}^{n} C_i\,(1+r)^n} \tag{2.2}$$

According to Johan (2011) the assessment criteria for the internal rate of return are (Durry et al, 2016):

a. *Gross* B/C > 0, In conclusion, the investment proposal is considered safe.

b. *Gross* B/C < 0, In conclusion, the investment proposal is considered unsafe.

3. *Return Of Investment* (ROI)

According to Soekartawi (2002) Return Of Investment (ROI), is the method used to calculate the ratio of net profits to costs. The formula for calculating ROI is:

$$\text{ROI} = \frac{\text{Profit}}{\text{Cost}} \times 100\% \tag{2.3}$$

4. *Break Event Point* (BEP)

Break event point is a method used to determine the break-even point (sales that do not generate profits but also do not cause losses). The formula used is (Yadi et al, 2015):

$$\text{BEP}_{(\text{Rupiah})} = \frac{a}{1-\frac{b}{p}} \tag{2.6}$$

$$\text{BEP}_{(\text{Unit})} = \frac{a}{p-b} \tag{2.7}$$

BEP assessment criteria:
If the production of Crispy mushrooms exceeds the break-even point, the conclusion is that the business is profitable.

## 3. Methods

This research was conducted at the SMEs Crispy Mushroom which is located at Jl. HR. Soebrantas, Panam, Km 15. The flowchart from the initial to the final stages carried out during the research can be seen in the image below in figure 1:

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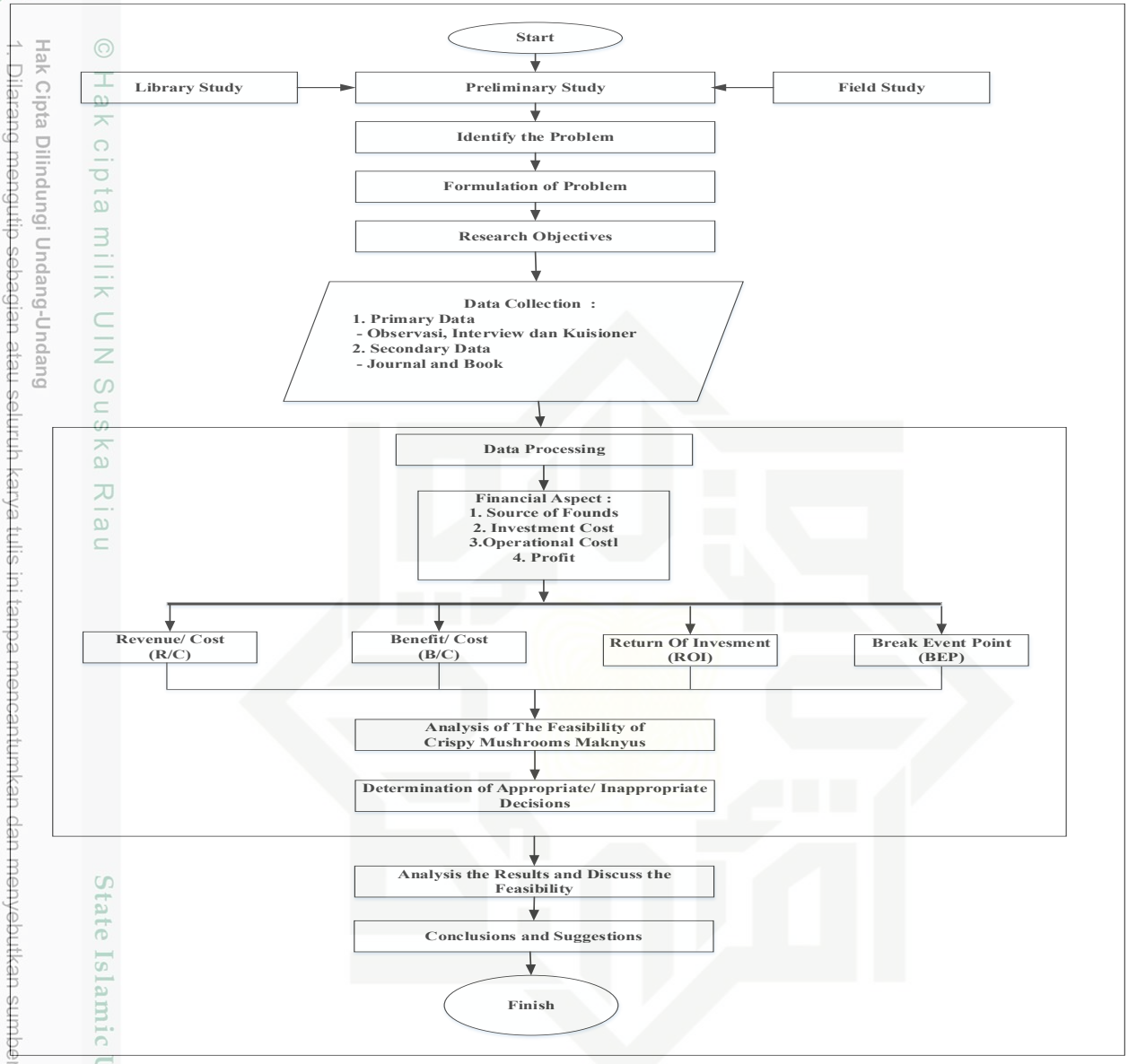


Figure 1. Flowchart Research

The explanation of picture 1 is as follows:

1. Doing a preliminary study. This study is divided into two, namely a field study conducted directly through interviews so that sales data for the last 9 months (January 2021-September 2021) in Crispy Mushrooms are obtained and a library study seeks and collects theories from journals and books as a basis for solve research problems.
2. Identifying the Problems with Crispy Mushrooms.
3. Determining the formulation of the problem as the scope of research.
4. Setting research objectives so that all research problems can be answered.
5. Collecting various data needed to conduct research. The data obtained are types of primary and secondary data.
6. Processing the data that has been obtained. The data obtained from the financial aspect is then calculated using 4 methods, namely Revenue/Cost, Benefit/Cost, Return of Investment and Break Event Point. The results of the data that have been processed will be analyzed and then determined whether the business decision is feasible or not.
7. Doing analysis, the results and discuss the feasibility of the Crispy Mushroom business.

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8. Making conclusions and suggestions from the results of research that has been done.

## 4. Data Collection

Data was collected to analyze the business feasibility of Crispy Mushroom.

### 4.1 Fixed Cost

Fixed costs are costs that must be incurred by the Crispy Mushroom business, whose use will not run out in one production but last a long time (Table 2).

Table 2. Fixed Cost and Depreciation Equipment for Crispy Mushrooms

| No | Equipment | Total (Unit) | Economic age (Year) | Price (Rp/Unit) | Total Price (Rp) | Depreciation Value (Rp/Month) |
|---|---|---|---|---|---|---|
| 1 | Outlet | 1 | 4 | 4.000.000 | 1x4.000.000 = 4.000.000 | 4.000.000/4/12 = 83.333 |
| 2 | Stove | 1 | 4 | 85.000 | 85.000 | 1.770 |
| 3 | Gas | 2 | 5 | 100.000 | 200.000 | 3.333 |
| 4 | Frying pan | 1 | 3 | 57.000 | 57.000 | 1.583 |
| 5 | Spatula | 1 | 2 | 81.000 | 81.000 | 3.375 |
| 6 | Strainer | 1 | 2 | 20.000 | 20.000 | 833 |
| 7 | Display window | 1 | 4 | 700.000 | 700.000 | 14.583 |
| 8 | Jar | 9 | 2 | 4000 | 36.000 | 1.500 |
| 9 | Scales | 1 | 4 | 110.000 | 110.000 | 2.291 |
| 10 | Basin | 1 | 2 | 30.000 | 30.000 | 1.250 |
| 11 | Sieve | 1 | 2 | 25.000 | 25.000 | 1.041 |
| 12 | Knife | 1 | 2 | 25.000 | 25.000 | 1.041 |
| Total | | | | 5.237.000 | 5.369.000 | 115.933 |

### 4.2 Raw Material Cost

The cost of raw materials is the cost used to buy raw materials and produce new snacks for the Crispy Mushroom business (table 3).

Table 3. Total Cost of Raw Materials

| No | Raw Material | Production (day) | Price (Rp) | Score (Rp/pcs) | Total (Rp/Month) |
|---|---|---|---|---|---|
| 1 | Mushroom | 5 kg | 22.000 | 110.000 | 3.300.000 |
| 2 | Flour | 4 kg | 10.000 | 40.000 | 1.200.000 |
| 3 | Micin | 1 package | 5.500 | 5.500 | 165.000 |
| 4 | Roico | 2 packages | 1.000 | 2.000 | 60.000 |
| 5 | Salt | 1 package | 5.000 | 5.000 | 150.000 |
| 6 | Turmeric | 1 pcs | 1.000 | 1.000 | 30.000 |
| 7 | Pepper powder | 1 package | 1.500 | 1.500 | 45.000 |
| 8 | Cooking oil | 1 liter | 14.000 | 14.000 | 420.000 |
| Total | | | | 179.000 | 5.370.000 |

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### 4.3 Packaging Cost

This packaging cost is the cost used to buy packaging for the packaging of crispy mushroom snack products (table 4).

Table 4. Total Cost of Packaging

| No | Packaging | Total (Day) | Price (Rp/Pcs) | Score (Rp/Pcs) | Total (Rp/Month) |
|---|---|---|---|---|---|
| 1 | Paperback Label | 1 kg | 15.000 | 15.000 | 450.000 |
| 2 | Plastic | 0.5 kg | 5.000 | 5.000 | 150.000 |
| Total | | | | 20.000 | 600.000 |

### 4.4 Labor Cost

The labor cost for Crispy Mushrooms is 4 person who covers all fields of work starting from washing herbal raw materials, then seasoning, then frying and packaging with the help of the business owner (Table 5).

Table 5. Total Cost of Employment of Manpower

| No | Activity | Manpower | Wage (Rp/Day) | Total (Rp/Day) | Total (Rp/Month) |
|---|---|---|---|---|---|
| 1 | Mushroom Wash | 1 | 5.000 | 5.000 | 150.000 |
| 2 | Seasoning | 1 | 5.000 | 5.000 | 150.000 |
| 3 | Frying | 1 | 5.000 | 5.000 | 150.000 |
| 4 | Packaging | 1 | 5.000 | 5.000 | 150.000 |
| Total | | | | 20.000 | 300.000 |

### 4.5 Total Variable Cost

The total variable cost is the total cost incurred by the Crispy Mushroom SMEs for a month (table 6).

Table 6. Total Variable Cost

| No | Description | Total (Rp/Month) |
|---|---|---|
| 1 | Raw Material Cost | 5.370.000 |
| 2 | Packaging Cost | 600.000 |
| 3 | Labor Cost | 300.000 |
| Total Cost | | 6.270.000 |

### 4.6 Total Production Cost

Production costs are the total costs used to produce crispy mushrooms (Table 7).

Table 7. Total Production Cost

| No | Description | Total Cost (Rp) |
|---|---|---|
| 1 | Total Fixed Cost | 115.933 |
| 2 | Total Variable Cost | 6.270.000 |
| Total Cost | | 6.385. 000 |

### 4.7 Revenue Analysis

Revenue analysis serves to measure the success or failure of a business. Income is the total production value of the business in a certain time multiplied by the selling price, while in 1 kg of raw mushrooms, you get 7 packs of mushrooms (table 8).

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Table 8. Product Value for Crispy Mushrooms/Month

| No | Description | Total Production (Kg/Day) | Packaging (Day) | Price (Rp/ package) | Product Score (Rp/Day) | Product Value (Rp/Month) |
|---|---|---|---|---|---|---|
| 1 | Crispy Mushrooms | 5 Kg | 35 | 10.000 | 350.000 | 10.500.000 |
| Total | | | | | 350.000 | 10.500.000 |

### 4.8 Profit Analysis

This profit analysis is a business activity that reduces some of the costs incurred with the sales results obtained. (Table 9)

Table 9. Profit Estimation per month

| No | Description | Total (Rp/Month) |
|---|---|---|
| 1 | Total Revenue | 10.500.000 |
| 2 | Total Cost | 6.385.000 |
| Profit | | 4.115.000 |

### 4.9 Business Feasibility Analysis

The analysis of this business is to determine whether a business, in this case, is the size of the Crispy Mushroom. Starting with analyzing Revenue/cost (R/C), then benefit/cost (B/C), then Return Of Investment (ROI), finally Break Event Point (BEP).

#### 4.9.1 Revenue/ Cost (R/C) Ratio

This revenue cost is to show the amount of value, which shows the comparison between business revenues and total costs. The calculation is as follows:

$$\frac{R}{C} = \frac{10.500.000}{6.385.000}$$

$$\frac{R}{C} = 1,64$$

The comparison of total costs shows that the calculation of the R/C ratio for the Crispy Mushroom is profitable because the value of the R/C ratio is Rp. 1.64 > 1. This means that every Rp. 100, -, giving receipts of Rp. 164, then the Crispy Mushroom is worthy to be used as a line of business.

#### 4.9.2 Benefit/ Cost (B/C) Ratio

The comparison of total costs shows that the calculation of the R/C ratio for the Crispy Mushroom is profitable because the value of the R/C ratio is Rp. 1.64 > 1. This means that every Rp. 100, -, giving receipts of Rp. 164, then the Crispy Mushroom is worthy to be used as a line of business.:

$$\frac{B}{C} = \frac{4.115.000}{6.385.000}$$

$$\frac{B}{C} = 0,64$$

This means that each production cost incurred is Rp. 100, -, it will get a profit of Rp. 64, this shows that the Crispy Mushroom SMEs can be said to be feasible (profitable) to be used as a business sector. This is reinforced by the comparison of total revenue with total production costs which are greater than 0.64 > 0.

#### 4.9.3 Return Of Investment (ROI)

Return Of Investment is a form of probability ratio which is intended to measure the ability of a business, with the total funds invested in a business for a business operation that generates profits. The search (ROI) is as follows:

$$ROI = \frac{4.115.000}{6.385.000} \times 100\ \%$$

$$ROI = 0,64 \times 100\ \%$$

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ROI = 64 %

Based on the comparison of profit and production capital, the ROI value is 64%, this means (ROI) the amount of profit obtained compared to the investment invested is good. This means that each capital of Rp. 100, it will get a profit of Rp. 64.

### 4.9.4 Break Event Point (BEP)

Break Event Point is the break-even point which refers to the amount of revenue that must be required to cover the total costs that have been incurred within a certain period, be it fixed costs or variable costs. The results of the calculation of the BEP are as follows:

1. Fixed cost a month = 6.270.000
2. Variable cost a pack = 179.000
3. Selling price a pack = 350.000

$$BEP_{(Rp)} = \frac{6.270.000}{1-\frac{179.000}{350.000}}$$

$$BEP_{(Rp)} = \frac{6.270.000}{1-0,5114}$$

$$BEP_{(Rp)} = \frac{6.270.000}{0,4886}$$

$$BEP_{(Rp)} = 12.832.582$$

The rupiah BEP value is Rp. 12.832.582

$$BEP_{(Unit/Bks)} = \frac{6.270.000}{350.000-179.000}$$

$$BEP_{(Unit/Bks)} = \frac{6.270.000}{171.000}$$

$$BEP_{(Unit/Bks)} = 36$$

So for the BEP unit/package value is 36.

From the results of the BEP calculation on the Crispy Mushroom SMEs, it shows that, if this business wants to make a profit every month, it must produce crispy mushrooms above 36 packs/day. If the Crispy Mushrooms produce crispy mushrooms under 36 packs / day, it is feared that they will experience losses.

## 5. Results and Discussion

This study will calculate business feasibility based on R/C, B/C, ROI, BEP as below.

### 5.1 Revenue/ Cost (R/C) Ratio Analysis

Revenue cost is part of the research phase on business feasibility analysis, in which this revenue cost is a search for comparisons between revenues and total costs. In determining whether a business is feasible or not, it starts by looking at the total revenue, namely TR with a value of 10,500,000 divided by the total cost, namely TC with a value of 6,385,000, then the result is 1.64 which from this result the size of Crispy Mushroom can be said to be feasible, because the value of R/C ratio > 1. This calculation also refers to previous research, namely Sajari et al (2017), who also researched feasibility analysis.

### 5.2 Benefit/ Cost (B/C) Ratio Analysis

Benefit cost is a continuation of the search from the feasibility analysis where the benefit cost refers more to the company's profit results, so it can be seen from the profit of the business, or the SMEs of Crispy Mushrooms are feasible or not as a business field. In determining the benefit cost, look at the profit from the sale of a product which is symbolized by B with a value of 4,115,000 divided by the total cost as in the search for Revenue cost with a value of 6,385,000, then the result is 0.64. These results show that the Crispy Mushroom SMEs is very feasible to be used as a business because the total revenue and total production costs are greater than zero or in another sense each capital is Rp. 100 spent eating will get a profit of Rp. 64, this is in line with previous research which states that if B/C > 0 then the business is feasible (Sucipto, 2011).

### 5.3 Return of Investment (ROI) Analysis

Return Of Investment can be interpreted as the ratio of net profit to costs in each business in this case is the Crispy Mushroom, in search of profit from sales with a value of 4,115,000 divided by the total cost of 6,385,000, then multiplied with 100%. So, the results of this search are in the form of a %, which is 64%, and this effort can be said to be feasible to continue.

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### 5.4 Analysis Break Event Point (BEP)

Break Event Point is also included in the series or stages of business feasibility analysis, Break Event Point is a search where a business finds a break-even point. In the search, the Break Event Point has two searches, namely in the form of rupiah and in the form of units, where in this study the results of the Break Event Point in units are 36 units, so if the Crispy Mushroom SMEs produces less than that amount from the total amount of production, the business will worry about losing.

## 6. Conclusion

Based on the results of calculations on the data that has been collected starting from the cost of equipment, then the cost of raw materials, packaging costs and labor costs, into fixed costs and variable costs, the gross income from the crispy mushroom business is Rp. 10,500,000 and a net income of Rp. 4,115,000. When viewed financially, this crispy mushroom business can also be said to be feasible to carry out or continue, because from the results of Revenue/Cost (R/C) the value is 1.64 > 1, then the result of Benefit/Cost (B/C) is obtained the value 0.64 > 0, then the Return Of Investment (ROI) value is 64%, and finally the Break Event Point (BEP) is 36 units.

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