DETERMINING PRODUCTS OR SERVICES PRICING ON MSME USING BREAK EVEN POINT ANALYSIS METHOD

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Abstract: The implementation of community empowerment programs always involves the participation of the community itself, which will later be integrated in a planning, implementation, control, and follow-up of the results of the program implementation such as its use and maintenance. With the development of the UMKM Community, there are problems that must be addressed in order to continue to develop and maximize the desired profit. One of the most important components in the problem of determining Profit is how they can determine the selling price and how to know the break-even point in producing the goods/services they market. Price is the exchange rate of goods or services which is stated in the unit of currency (rupiah). Price is an important marketing mix element in product marketing. MSMEs need to determine the selling price carefully. Setting prices too high will cause sales to decline, while setting prices too low can reduce the profits of MSMEs businesses. In a business, it can be concluded that fixed costs are constant expenses that must continue to be incurred, even though there is no production activity. Conversely, variable costs are only incurred by the business owner when carrying out the production of goods or services. Even though the two types of costs are different in one way or another, they must still be considered in running a business. The calculation of fixed costs and variable costs will help in determining the production costs that must be incurred in developing a business that is being run.

Keywords: Determination of Product / Service Selling Prices, Raw Material Costs, Sales Commission Fees, Distribution Costs

1. Introduction

In a more advanced era like now, community empowerment is very important. With the existence of community empowerment, will change the pattern of thinking to be more advanced. (Pangestu, 2008); (Husein, 1993). Empowerment can change the policies so far that place the village as the back line in the development process to the front line. The quality of human resources is a key factor in the development of a village.

The implementation of community empowerment programs always involves the participation of the community itself which will later be integrated in a planning, implementation, control, and follow-up of the results of the program implementation, such as its use and maintenance. (Kwartono, 2007)
The Covid-19 pandemic has an impact on the sustainability of micro, small and medium enterprises (MSMEs). The existence of the Covid-19 pandemic had an impact on the business world which resulted in a large number of workers who had to be sent home. During the pandemic, there was a change in the pattern of consumption of public goods and services from offline to online. MSME actors must have difficulty achieving targets that must be achieved when the economy is disrupted. (Manurung, 2008) Changes in this pattern should be followed by Micro, Small and Medium Enterprises (MSMEs) players in order to survive and develop so that they are able to face the new normal conditions. (Indonesia, 2015) Entrepreneurship comes from a word in French, which means 'intermediary'. There are several definitions of entrepreneurship, namely: Entrepreneurship is a value that is manifested in behavior which is used as the basis of resources, driving force, goals, strategies, tips, business processes and results. (Sanusi, 2008)

MSMEs that enter the manufacturing sector or processing industry are MSMEs that process raw materials into finished goods, including industrial design and engineering activities (LPPI, 2015). The processing industry was able to contribute 10.59%. Then in terms of employment, the manufacturing sector, including the home industry, contributed 6.41%. On this basis, MSMEs really need a lot of assistance in order to increase their sales volume, especially in the era of a pandemic like now. According to the Decree of the Minister of Cooperatives and Small Entrepreneur Development Number 961 / KEP / M / XI / 1995), small businesses in it contain the spirit, attitude, behavior and abilities of a person in terms of business or activities that lead to efforts to find, create, and implement methods. work, technology and new products by increasing efficiency in order to provide better service and obtain greater profits. With the current situation, MSME actors must have difficulty in achieving the targets that must be achieved. (Suryana, 2013) Changes in this economic pattern should be followed by Micro, Small and Medium Enterprises (MSMEs) in order to survive and develop so that they are able to face the new normal conditions. (Kewirausahaan, 2001); (Muhandri, 2002) One of the things that often becomes the main problem at MSMEs which is actually very simple but does not yet have awareness is how to determine the selling price of their products and services (Tambunan, 2008). Because for some MSMEs, they do not have sufficient knowledge in terms of managing financial management properly. They are not yet able to distinguish which ones are included in costs, assets and capital. The UMKM community involved in this research as partners is the Brebes UMKM KLubanostic Community.

Klubanostic was initiated and founded on November 11, 2018, which originated from KLUBAN (Banjaratna UMKM Family). Banjaratna is a village from Bulakamba District, Brebes Regency. This initiation was carried out by several people who had a strong desire to be able to enter and sell in the Rest Area 260 B Banjaratna. Along with the many responses from the community, this community group was founded in 11 sub-districts in Brebes Regency (Bulakamba, Wanasari, Lorayon, Ketanggungan, Kersana, Banjarharjo, Songgom, Losari Salem and Ketunjungan) so that this community was called Klubanostic. This community has been incorporated since April 2020.

During its development, these MSMEs still have not been able to maximize the desired profit. (Agus, 2010) These MSMEs have not been able to determine the selling price and do not yet know the break-even point in producing goods/services. Price is the exchange rate of goods or services which is stated in the unit of currency (rupiah). Price is an important marketing mix
element in product marketing. MSMEs need to determine the selling price carefully. (Suryo. A, 2007) Setting prices too high will cause sales to decline, while setting prices too low can reduce the profits of MSMEs businesses. (Kreatif, 2014) MSMEs set the selling price with several objectives, including: (Nainggolan, 2013)

   a. Make a profit; a certain selling price that is set on a product is expected to get optimal profit.
   b. Maintain profit margins at a certain level; of the specified selling price, it is expected to get profit that has been planned and can be maintained. As well as covering operational costs, such as employee salaries / wages, electricity, water bills, purchase of raw materials, transportation costs and others.
   c. Meets the Return on Investment (ROI); careful selling price fixing can accelerate your return on capital (ROI).
   d. Control and maintain market share; setting a competitive selling price can divert the interest of consumers who used to use competitive products in the market. This can increase market share. The existing market share can be maintained by careful and competitive pricing.

   The breakeven point condition in a business is known through a method known as Breakeven Analysis. (Sugiri, 1999); (Soemarso, 1990) Break-even analysis is a method of analysis by studying the relationship between fixed expenses, variable expenses, profit and volume of activity (production / sales). Thus, in this analysis, there are at least three elements that must be considered, namely expenses, volume of activities, and profits. With regard to loads, break-even analysis requires that loads be divided into two, namely variable loads and fixed loads. (Roberto & Jaka, 2018) By knowing fixed expenses and variable expenses, MSME actors can find out and estimate the amount of production or the amount of sales that will generate a certain amount of profit. They can determine the levels of production and sales that will break even or will make a profit that can only cover their fixed expenses. (Purnomo, 2016) With a break-even analysis, MSME players will know and estimate the expenses and level of sales so that they can avoid losses.

   In general, with a break-even analysis, MSME entrepreneurs can find out the following things:

   a. Contribution Margin on the unit or quantity of product to be sold.
   b. The minimum number of units that must be sold in order to break even, is that the expenses incurred are the same as the sales generated.
   c. The selling price of a product that can cover total expenses, both fixed and variable expenses.

   From the description above, the Faculty of Economics and Business, Pancasakti University (UPS) Tegal is interested in holding community service programs in collaboration with the Cooperatives and UMKM Offices; namely appropriate training to develop existing residents' businesses, especially in the Klubanostic UMKM Community. We call this training "Determining the selling price of products / services for MSMEs with the Breakeven Point Analysis Method".
2. Research Method

In general, MSMEs can set the selling price for their products using two approaches, namely the market approach and the expense approach.

a. Market Approach
In this approach, the selling price setting process can be done in two ways:
1. Prices are set after an agreement is made between the seller and the buyer. This price agreement is of course preceded by a bargaining process. The seller will lower the offered price, while the buyer will lower the asking price. This bargaining process will continue until finally the price desired by the two parties meets in the form of an agreement price (equilibrium).
2. The product price is determined after considering the variables that affect the price and the market. These variables include political, social, cultural conditions, competition and others. At the time of approaching Eid al-Fitr, for example, the price of garment products skyrocketed compared to normal days. The increase in fuel prices will be followed by an increase in transportation rates and other products.

For MSMEs that set the selling price using a market approach, it is necessary to know what the minimum cost of the product being offered is. By knowing this price, MSMEs will be able to make the right decisions, that is, if they agree on a price with the buyer, they will not suffer losses. (Ikatan Akuntan Indonesia, 2008)

b. Expense Approach
In this approach, the selling price is determined by calculating the expenses incurred plus the desired profit. This profit can be stated in the form of ‘rupiah’ amount or in the form of a percentage (%) of the profit. There are several approaches that can be used to determine the selling price using the expense approach, including: the cost-plus pricing approach and the time & material pricing approach.
1. The Cost-Plus Pricing Approach

The cost-plus pricing approach is often used in trade and industrial businesses. In this approach, the selling price is calculated as an expense plus a mark-up of a certain percentage of the expense. Expenses used as the basis for calculating the selling price can be in the form of full costing, full costing, variable production costing and variable costing.

As for determining the amount of mark-up, one method used is to use the Return on Investment (ROI). ROI is the multiplication of the ratio of net income to sales and the ratio of sales to average assets. ROI can be described as follows:

\[
\text{ROI} = \frac{\text{Net Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average Operating Assets}}
\]

Example 1
During 2018 ANTERO's business is targeting production and sales of 1,000,000 units using assets valued at IDR 75,000,000. The expected ROI rate is 30%. The expenses incurred are as follows:
ANTERO Business wants to determine the selling price using two alternatives: a) full production costs and b) variable production costs.

If ANTERO Business bases on full production costs, the expenses used to calculate the selling price are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Load</td>
<td>Rp. 15,000,000</td>
<td>Rp. 15</td>
</tr>
<tr>
<td>Labor Wages</td>
<td>Rp. 12,000,000</td>
<td>12</td>
</tr>
<tr>
<td>Variable Other Production Expenses</td>
<td>Rp. 12,000,000</td>
<td>12</td>
</tr>
<tr>
<td>Other Production Expenses Fixed</td>
<td>Rp. 21,000,000</td>
<td>21</td>
</tr>
<tr>
<td>Variable Selling and Administrative Expenses</td>
<td>Rp. 6,000,000</td>
<td>6</td>
</tr>
<tr>
<td>Fixed Selling and Administrative Expenses</td>
<td>Rp. 3,000,000</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Rp. 69,000,000</td>
<td>Rp. 69</td>
</tr>
</tbody>
</table>

Mark-Up is calculated by the formula:

\[ \% \ Mark-Up = \frac{(ROI \times \text{Fixed assets}) + (\text{Expenses other than Full Production Expenses})}{(\text{Volume in Unit}) \times (\text{Full Production Load / Unit})} \]

\[ = \frac{(0.30 \times Rp75,000,000) + 9,000,000)}{1,000,000 \text{-unit} \times Rp60} \]

\[ = \frac{Rp31,500,000}{Rp60,000,000} \]

\[ = 52.5 \% \]

Based on full production expenses and the mark-up percentage (%) above, ANTERO's Business then determines the selling price as follows:

- Full production load per unit: Rp. 60
- Mark-up (52.5% x Rp. 60): Rp. 31.5
- Selling price: Rp. 91.5

If ANTERO's business is able to sell all of its products (1,000,000 units) at a price of Rp. 91.5, then an income statement can be made as follows:
ANTERO BUSINESS

Income statement

Period Ended on December 31, 2018

Sales (1,000,000 x Rp. 91.5) Rp. 91,500,000
Cost of goods sold (COGS) 60,000,000
Gross profit 31,500,000
General Selling and administrative expenses 9,000,000
Net profit Rp. 22,500,000

Description:
1. HPP of Rp. 60,000,000 consists of: elements of material load of Rp. 15,000,000, wages of labor of Rp. 12,000,000, production expenses of fixed variables and others, respectively Rp. 12,000,000 and Rp. 21,000,000.
2. General selling and administrative expenses Rp. 9,000,000; consisting of general variable selling and administration expenses amounting to Rp. 6,000,000, and selling and general administration and selling expenses still amounting to Rp. 3,000,000.

ROI of 30% can be proven as follows:

\[
\text{ROI} = \frac{\text{Net Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average Operating Assets}}
\]

\[
= \frac{22,500,000}{91,500,000} \times \frac{91,500,000}{75,000,000}
\]

\[
= 24.5\% \times 1.22
\]

\[
= 30\%
\]

If ANTERO BUSINESS bases on variable production expenses, the expenses used to calculate the selling price are:

- Material load per unit Rp. 15
- Unit labor wages 12
- Other production expenses per unit variable 12

\[
\text{Mark-Up} = \frac{(\text{ROI} \times \text{Fixed assets}) + (\text{Expenses other than Full Production Expenses})}{(\text{Volume in Unit}) \times (\text{Full Production Load / Unit})}
\]

\[
= \frac{(30\% \times \text{Rp. 75,000,000}) + 30,000,000}{1,000,000-\text{unit} \times \text{Rp. 39}}
\]
Based on the variable production expenses and the Mark-Up percentage, ANTERO Enterprises calculates the selling price as follows:

\[
\text{Per unit variable production expense} = \text{Rp. 39} \\
\text{Mark-Up (135\% \times \text{Rp. 39})} = 52.6 \\
\text{Selling price} = \text{Rp. 91.6} \\
\]

If ANTERO's business is able to sell all of its products (1,000,000 units) at a price of Rp. 91.6 then an income statement can be made as follows:

**ANTERO BUSINESS**

Income statement  
Period Ended on December 31, 2018

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales (1,000,000 x Rp. 91.6)</td>
<td>Rp. 91.600.000</td>
</tr>
<tr>
<td>Cost of goods sold (COGS)</td>
<td>Rp. 60.000.000</td>
</tr>
<tr>
<td>Gross profit</td>
<td>Rp. 31.600.000</td>
</tr>
<tr>
<td>Sales, administration and general expenses</td>
<td>Rp. 9.000.000</td>
</tr>
<tr>
<td>Net profit</td>
<td>Rp. 22.600.000</td>
</tr>
</tbody>
</table>

From example number 1, it can be concluded as follows; if ANTERO's business targets production and sales of Rp. 1,000,000 units using assets of IDR 75,000,000 and expecting an ROI of 30%, then the number of units of the product must be sold at a price of IDR 91.5 per unit (with the full production load approach) or IDR 91.6 per unit (with the variable production expense approach)

**Example 2**

Mr. Tumon intends to set up a meatball stall with a 25% profit. Several types of expenses to be issued are estimated as follows:

<table>
<thead>
<tr>
<th>No.</th>
<th>Material Type</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Raw Material Expenses (beef, flour, noodles, etc.)</td>
<td>Rp 2.000.000</td>
</tr>
<tr>
<td>2.</td>
<td>Helping Expenses (sauce, soy sauce, crackers, dumplings, etc.)</td>
<td>300.000</td>
</tr>
<tr>
<td>3.</td>
<td>Fixed Expenses (employee wages, rent, electricity, etc.)</td>
<td>175.000</td>
</tr>
<tr>
<td><strong>Total Expenses</strong></td>
<td><strong>Rp 2,475,000</strong></td>
<td></td>
</tr>
</tbody>
</table>

If it is estimated that 1 day of selling 450 bowls, the selling price determined by the bowl can be calculated as follows:
In trading MSMEs, production costs which include material costs, labor wages, and other production costs (fixed and variable) are replaced by the purchase value. The purchase value can be calculated per unit and is a variable expense. For example, Mr. Ahmad owns a shop that sells various snacks and morning cakes. These snacks and cakes are purchased from suppliers at an average price of IDR 2,000 per cake. If Mr. Ahmad wants a profit of Rp. 500 per cake, so he has to sell the perch for Rp. 2,500. Even so, the selling price of Rp. 2,500 only resulted in gross profit (gross profit) because it did not take into account fixed expenses such as employee wages, shop rent, food, drinking and others.

2. Time and material pricing approach

Determining selling prices using the time and material pricing approach is often used in service businesses such as workshops, printing, professional services: accounting, doctors, and other service businesses. (Kieso et al., 2016) This approach uses two rates.

- The first rate is based on the time of direct labor, namely the hourly rate of direct labor. This rate is calculated from the following three elements of expenses: (1) direct labor costs (wages) including salaries and other additional benefits; (2) selling and administrative expenses; (3) desired profit.

- The second rate is based on ingredients (components). Included in the material component includes the purchase price of the material, the expenses incurred until it is ready to be utilized and the desired profit.

For example, a motorcycle repair shop pays direct labor of IDR 10,000 per hour plus an allowance of IDR 1,000 per hour. The workshop business incurs several monthly expenses as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor salary</td>
<td>Rp. 850,000</td>
</tr>
<tr>
<td>Supplies materials</td>
<td>350,000</td>
</tr>
<tr>
<td>Depreciation of fixed assets</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Types of administrative and sales expenses</td>
<td>1,500,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3,700,000</strong></td>
</tr>
</tbody>
</table>

On average, direct workers work 2,000 hours per month with a desired profit of IDR 1,000 per hour. The cost of installing motor components (spare-parts) is estimated at 25% of the component's invoice price, while the desired profit is 20%. If a customer spends 2 hours of repair service and requires components (spare-parts) with a purchase price of IDR 30,000; then the hourly rates, material rates, and prices charged to customers are as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hourly labor</td>
<td>Rp. 5,000</td>
</tr>
<tr>
<td>Material rate</td>
<td>Rp. 7,500</td>
</tr>
<tr>
<td><strong>Total price charged to customer</strong></td>
<td><strong>12,500</strong></td>
</tr>
</tbody>
</table>
Hourly rates are calculated as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total hourly wages</td>
<td>Rp. 11,000</td>
</tr>
<tr>
<td>Other expenses per hour (Rp. 3,700,000: 2,000)</td>
<td>1,850</td>
</tr>
<tr>
<td>Desired profit</td>
<td>1,000</td>
</tr>
<tr>
<td><strong>Hourly rate</strong></td>
<td><strong>Rp. 13,850</strong></td>
</tr>
</tbody>
</table>

Material rates are calculated as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials (components) used</td>
<td>Rp. 30,000</td>
</tr>
<tr>
<td>Other expenses relating to components (25% x 30,000)</td>
<td>7,500</td>
</tr>
<tr>
<td>Desired profit (20% x 30,000)</td>
<td>6,000</td>
</tr>
<tr>
<td><strong>Material rates</strong></td>
<td><strong>Rp. 43,500</strong></td>
</tr>
</tbody>
</table>

The selling price charged to customers is as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of hours worked (2 x Rp. 13,850)</td>
<td>Rp. 27,700</td>
</tr>
<tr>
<td>Total material load</td>
<td>43,500</td>
</tr>
<tr>
<td><strong>Selling price</strong></td>
<td><strong>Rp. 71,200</strong></td>
</tr>
</tbody>
</table>

3. Results and Discussion

3.1. Definition of Break-even Analysis

The breakeven condition of MSMEs is known through a method known as Breakeven Analysis. Break-even analysis is sometimes defined in terms of: principal return analysis, break even analysis, or load-volume-profit. Break-even analysis is a method of analysis by studying the relationship between fixed expenses, variable expenses, profit and volume of activity (production / sales). Thus, in this analysis, there are at least three elements that must be considered, namely expenses, volume of activities, and profits.

With regard to loads, break-even analysis requires that loads be divided into two: variable loads and fixed loads. The explanation of variable and fixed expenses has been discussed in the chapter "operating expense management". By knowing fixed expenses and variable expenses, MSME actors can find out and estimate the amount of production or the amount of sales that will generate a certain amount of profit. They can determine the levels of production and sales that will break even or will make a profit that can only cover their fixed expenses. With a break-even analysis, MSME players will know and estimate the expenses and level of sales so that they can avoid losses.

In general, with a break-even analysis, MSME entrepreneurs can find out the following things:

- Contribution Margin on the unit or quantity of product to be sold.
- The minimum number of units that must be sold in order to break even, i.e. the expenses incurred are the same as the sales generated.
- Product selling price that can cover total expenses, both fixed and variable expenses.

For example: to make furniture, the Furniture UMKM employs 6 masons to make the frame and 3 people for the finishing part. For every 1 set of furniture frames, wood raw materials are needed, valued at Rp. 200,000, a builder's wages of Rp. 100,000, and other production costs...
of IDR 50,000. The fixed monthly expenses computed include electricity and telephone charges of Rp.350,000 and equipment depreciation of Rp.150,000. Every 1 set of furniture frames is sold at a price of IDR 400,000. These calculations can be summarized as follows:

<table>
<thead>
<tr>
<th>The selling price of the furniture Prestel (frame)</th>
<th>Rp. 400,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable load (Prestel):</td>
<td></td>
</tr>
<tr>
<td>Wood raw material</td>
<td>200,000</td>
</tr>
<tr>
<td>Labor wages</td>
<td>100,000</td>
</tr>
<tr>
<td>Other production expenses</td>
<td>50,000</td>
</tr>
<tr>
<td><strong>Total variable load</strong></td>
<td><strong>Rp. 350,000</strong></td>
</tr>
<tr>
<td>Fixed load:</td>
<td></td>
</tr>
<tr>
<td>Electricity, telephone and other expenses</td>
<td>350,000</td>
</tr>
<tr>
<td>Equipment depreciation expense</td>
<td>150,000</td>
</tr>
<tr>
<td><strong>Total fixed expenses</strong></td>
<td><strong>Rp. 500,000</strong></td>
</tr>
</tbody>
</table>

CONTRIBUTION MARGIN

Contribution margin is the difference between sales proceeds and total variable costs. This can be seen in Figure 1 below:

![Figure 1. Contribution Margin](image1.png)

A positive contribution margin means that the sales proceeds are able to cover variable expenses and part of its fixed expenses. If the contribution margin exceeds fixed expenses, the excess is profit.

If it is related to units of goods sold, MSME entrepreneurs can calculate the contribution margin per unit, which is the total rupiah contribution margin divided by the total units. This can be seen in Figure 2 below:

![Figure 2. Contribution Margin per Unit](image2.png)

For example, if it is known that the contribution margin per unit is Rp150, it means that each unit of goods sold contributes Rp150 to cover fixed expenses. By knowing the contribution margin per unit, MSME entrepreneurs can quickly find out how many units of goods must be sold so that the entire burden is covered.

For example, based on the MSME FURNITURE case above, if in March of the current year 20 sets of products can be sold, the contribution margin can be calculated as follows:
The results of the above calculations explain that:

- The total contribution margin is Rp1,000,000, while fixed expenses are Rp. 500,000 so that the net profit is Rp. 500,000.
- The contribution margin per unit is IDR 50,000. It can be interpreted that each unit of goods sold contributes Rp.50,000 to cover its fixed expenses.

DETERMINATION OF BREAK-EVEN POINT (VALUE)

Another benefit of a breakeven analysis is that it can determine the number of units and minimum sales in order to achieve a break-even condition, which is a condition in which a business does not experience a profit or loss. The value that results in a break-even condition in terms of quantity or amount of 'rupiah' can be calculated using the following formula:

Break-even Value (in Units) = \( \frac{\text{Fixed Expenses}}{\text{Contribution Margin per Unit}} \)

Break-even Value (in Rp.) = \( \frac{\text{Fixed Expenses}}{\text{Contribution Margin Ratio}} \)

The contribution margin ratio is the ratio between the contribution margin and sales. This ratio shows that there is a percentage (%) of IDR from IDR 1 sales that can be used to cover fixed expenses and profits.

Based on the MSME FURNITURE example above, the break-even value in units and in rupiah can be calculated as follows:

\[
\text{Break-even Value (in Units)} = \frac{\text{Fixed Expenses}}{\text{Contribution Margin per Unit}}
\]

\[
= \frac{\text{Rp. 500,000}}{\text{Rp. 50.000}}
\]

\[
= 10 \text{ Unit}
\]

\[
\text{Break-even Value (in Rp.)} = \frac{\text{Fixed Expenses}}{\text{Contribution Margin Ratio}}
\]

\[
= \frac{\text{Fixed Expenses}}{2622 - 4771}
\]

\[
= \frac{\text{Rp. 500,000}}{2614 - 1280}
\]

\[
= 10 \text{ Unit}
\]
These results explain that the MSME FURNITURE must at least sell its product (frame) of IDR 4,000,000 or 10 units a month in order to break even (no profit and no loss).

**DETERMINATION OF SALES WITH CERTAIN INCOME**

Break-even analysis can also be used to plan profit. If the UMKM entrepreneur has calculated and planned the desired profit, then the entrepreneur can plan the level of sales that can generate that profit with the formula:

\[
\text{Sales (unit)} = \frac{\text{Fixed Expenses} + \text{Target Profit}}{\text{Contribution Margin per Unit}}
\]

Based on the MSME FURNITURE case above, if the company targets a profit of IDR 500,000, the number of units (frames) that should be sold is:

\[
\begin{align*}
\text{Sales (unit)} & = \frac{\text{Fixed Expenses} + \text{Target Profit}}{\text{Contribution Margin per Unit}} \\
& = \frac{\text{Rp. 500,000} + \text{Rp. 500,000}}{\text{Rp. 50.000}} \\
& = \text{20 Unit}
\end{align*}
\]

With a price per unit of Rp. 400,000 (see example of MSME FURNITURE), then the MSME must sell 20 units or IDR 8,000,000, which is IDR 400,000 x 20 units in order to generate a profit of IDR 500,000.

If the MSME FURNITURE continues to target a profit of IDR 500,000, but by increasing the selling price from IDR 400,000 per unit to IDR 450,000 per unit, the MSME must sell 10 units of its products with the following information:

\[
\begin{align*}
\text{Sales (unit)} & = \frac{\text{Fixed Expenses} + \text{Target Profit}}{\text{Contribution Margin per Unit}} \\
& = \frac{\text{Rp. 500,000} + \text{Rp. 500,000}}{\text{Rp. 100.000}} \\
& = \text{10 Unit}
\end{align*}
\]
Or by selling Rp. 4,500,000, which is selling per unit at a selling price of Rp. 450,000 (Rp. 450,000 x 10 units). The per-unit contribution margin of IDR 100,000 can be found in the following ways:

<table>
<thead>
<tr>
<th>Description</th>
<th>Per Unit (Stel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>Rp. 450,000</td>
</tr>
<tr>
<td>Variable Expenses</td>
<td>350,000 -</td>
</tr>
<tr>
<td>Contribution Margin</td>
<td>Rp. 100,000</td>
</tr>
</tbody>
</table>

**FIXED COST AND VARIABLES COST**

**Fixed Cost**

Fixed costs are costs incurred by a business actor in a fixed amount and do not change, regardless of the output produced in the business, or it can be said that within a certain period of time, these costs do not change and are not influenced by business activities that increase or decrease over time.

**Variable Cost**

Variable costs are costs that depend on the amount of output produced and the presence of other factors. Variable costs will also change when the level of business activity increases or decreases.

**3.2. Discussion**

Here are some points of comparison that can be used as a reference in distinguishing fixed costs and variable costs:

**Assessment**

Fixed costs are assessed based on time, while variable costs are determined based on the volume or quantity of production. The assessment will determine the nominal costs that must be incurred by the business actor when producing goods or services.

**Expenditure Time**

Fixed costs are costs that must be incurred by the business owner, regardless of whether there is production carried out or not. This fee must be paid regularly during a certain period or when it is due.

Meanwhile, variable costs are only incurred when the business actor produces goods and services. When production is not running, no variable costs are required.

**Relationship to Unit Costs**

Fixed costs will change the unit cost or the cost per unit. If unit production increases, the fixed costs that must be incurred will decrease. On the other hand, a decrease in production will make the unit fixed costs higher.

This condition will be different from variable costs. This cost is directly proportional to the unit cost. The more units produced, the higher the variable costs.

**Relation to the Quantity of Units Produced**

Fixed costs will not change in number when the quantity of units produced changes, while the amount of variable costs will vary and adjust to the number of units produced.
Composition of Determination of Cost

Fixed costs are core costs which are a combination of production overhead costs, administrative costs, sales costs, and distribution costs. Meanwhile, variable costs are a combination of costs of production materials, labor, production costs, materials consumed, and variable sales and distribution costs.

Examples of Fixed Costs and Variables Costs

Fixed costs generally include a financing budget that has a clear amount or has been confirmed by the business owner or certain parties related to the business. Some examples of fixed costs are building rental costs, taxes, business insurance, employee salaries, and so on. For example, a home industry that produces handicraft products, rents a warehouse before the goods are distributed. The business owner must continue to pay warehouse rental fees, both when production increases or decreases.

Meanwhile, variable costs depend directly on the production activities of a business, for example, they are related to the costs incurred in these activities. Some of the costs that are categorized as variable costs are raw material costs, sales commissions, packaging costs, distribution costs, and other additional costs required during the production process.

4. Conclusion

In a business, it can be concluded that fixed costs are constant expenses that must continue to be incurred, even though there is no production activity. Conversely, variable costs are only incurred by the business owner when carrying out the production of goods or services. Even though the two types of costs are different in one way or another, they must still be considered in running a business. The calculation of fixed costs and variable costs will help in determining the production costs that must be incurred in developing a business that is being run.

References


