

Implementation Of Cost Volume Profit (CVP) Analysis For Micro, Small, And Medium Enterprises (MSMEs) (Case Study at Bandung Tawar Bread Factory)

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Abstract: This study aims to determine the target of breaking even bread sales, sales targets with an increase in profit of 23% from the previous year, and sales margin of safety in 2022. The analysis used is Cost Volume Profit Analysis.

The data used in this analysis are the 2021 income statement, product selling prices, 2021 sales volume, and costs during the production process. The analytical technique used is descriptive qualitative analysis. The steps taken to carry out this analysis are collecting data, classifying costs based on behavior, separating semi-variable costs, calculating contribution margins, multi-product break even, planning sales and profits, and calculating the margin of safety.

The results of this study indicate that the level of sales that must be achieved to be in a break-even condition is Rp. 309.345.206 or 51.116 units of bread. For Tawar bread of Rp. 187,047,557 (37,410 units), Toast of Rp. 102,421,248 (11,380 units), Bagelen of Rp. 3,312,357 (662 units), Burger Bread of Rp. 7,824,386 (869 units), and Hotdog bread for Rp 8,739,658 (795 units). Sales plan with an increase in profit of 23% or Rp. 252,495,648 from sales in 2021, which is Rp. 991,253,251 or 163,794 units of bread. For plain bread of Rp. 599,367,617 (119,874 units), Toast of Rp. 328,194,500 (36,466 units), Bagelen bread of Rp. 10,613,984 (2,123 units), Burger Bread of Rp. 25,072,146 (2,786 units), and Hotdog bread is Rp. 28.005.005 (2,546 units). The margin of safety that must be achieved by the Bandung Tawar Bread Factory in 2022 is 68.8%.

Keywords: cost volume profit analysis, profit planning, break-even, the margin of safety

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Introduction

The competition in the business world is getting tougher. The advancement of the times and technology encourages the emergence of new companies. Based on data from the Cooperatives Office, Small and Medium Enterprises of Denpasar City recorded an increase in the number of MSMEs by 4.82% from 2017 - 2021 (Denpasar City Cooperatives and MSMEs Office). The number of emerging competing companies demands that companies must improve the quality and quantity of their business to be able to maintain the continuity of the company so as not to be excluded from the business competition. There needs to be a balance of handling and good management. One of the main goals of the company both short-term and long-term is to get an optimal profit. However, to achieve this goal, there is a challenge faced by the company, which is to be able to minimize costs and increase sales.

Cost, volume, and profit are key instruments in maintaining business continuity and developing the company's activities. Cost Volume Profit analysis is an analytical tool used to obtain information related to the relationship between cost, profit, product mix, and sales. This analysis was carried out at the pia Latief Kediri company using secondary data and semi-variable cost separation of the highest point and lowest point methods. Then calculate the break-even, contribution margin, and margin of safety (Winarko, 2018). In the next study at the Roti Prima Donuts Kediri company, a cost volume profit analysis was also carried out using the same data and separation method (Sussana, 2017). The research produced information for companies about breakeven conditions and the safe limits of decline in sales.

In one of the MSMEs in Denpasar City, namely the Bandung Tawar Bread Factory, the average can produce up to 10,000 packets of bread and for a year the company's total production reaches 135,878 packs. However, the amount of product produced is not in line with the profit obtained by the company. Based on the results of interviews and preliminary observations at the Bandung Tawar Bread Factory, information was obtained that in running its business, the company did not have adequate profit planning. This is because the company does not know about

the minimum number of products that must be sold to be in a break-even condition. The condition is when the company does not get profit or loss from the proceeds of its sales. So management hesitates in making a decision. Therefore, in the current research, the company is planning sales with a target of increasing profits by 23% of its 2021 profit. This is done as a form of company motivation to maximize profits through good management so that it will make the company more profitable and financially and financially healthy and able to compete. The purpose of this study is to find out what the break-even conditions are, the sales that must be planned for the following year, and the safe limit of sales decline for the company.

Method

This research is a type of qualitative research using a descriptive approach. Research is carried out on operational activities directly on product sales, production processes, and costs incurred in the production process. Location of Bandung Tawar Bread Factory on Jalan Yudistira No.27, Daging Puri Kauh, North Denpasar District, Denpasar City, Bali. The time required to conduct this study for 6 months starts from February to July 2022. The data sources used in this study are primary data and secondary data (Sugiyono, 2019). Primary data is obtained through interviews with the production department, marketing department, and finance department. Secondary data in this study are the income statement, cost of goods sold, the price list of each product in 2021, the sales volume in 2021, and the list of costs every month. The data collection techniques and instruments used are observation, interviews, and documentation (Sugiyono, 2020). Tests of the credibility and validity of the data are carried out using time triangulation, techniques triangulation, and source triangulation

Data analysis used to answer the research objectives is a qualitative descriptive analysis technique to describe profit planning by applying cost volume profit analysis at the Bandung Tawar Bread Factory. The steps used are:

1. Classification of costs based on cost behavior

Cost behavior is a relationship between total and changes in the volume of activity at an enterprise. Generally, this behavior has 3 types of changes in the volume of cost activities, such as fixed costs, semi-variable costs, and also variable costs. This classification is carried out to maintain the success rate of profit planning (Mulyadi, 2015).

2. Semi-variable cost separation

Semivariable costs are classified into fixed costs and variable costs. The separation method used is the least squared method. This method of separation was chosen because the results obtained are more accurate. The formula used is:

$$b = \frac{n \sum xy - \sum x \sum y}{n \sum x^2 - (\sum x)^2} \qquad a = \frac{\sum y - b \sum x}{n}$$

3. Cost Volume Profit (CVP)

Cost Volume Profit analysis provides information on the number of variable costs that must be sacrificed to achieve the expected profit and how many fixed costs must be absorbed (Wiyasha, 2014).

a. Contribution Margin

The contribution margin is the difference in sales revenue after deducting variable costs. The difference earned is used to cover fixed costs and add to the profit in the later period (Kholmi, 2015).

$$\text{Contribution Margin (CM) Ratio} = 1 - \frac{\text{Variabel Cost}}{\text{Sales}}$$

b. Break Even

Break-even is a condition when the company does not get a profit or does not experience losses (Kamarudin, 2017).

$$BE (\text{Multi Product}) = \frac{\text{Fixed Cost}}{(MK_A \times Prop_A) + (MK_B \times Prop_B) + \dots + (MK_N \times Prop_N)}$$

c. Profit Planning

Profit planning is a work plan that can be carefully calculated so that financial relations are expressed in the form of calculations of profit and loss, balance sheet, cash, and working capital for the long-term and short term (Romanda, 2016).

$$\text{Sales (unit)} = \frac{(\text{Fixed Cost} + \text{Expected Profit})}{\text{CM(unit)}}$$

d. Margin of Safety

The margin of safety is the difference between budgeted sales and break-even sales that produce information about the amount of sales volume that may fall, but not to the point of loss (Munawir, 2019).

$$\text{MoS} = \frac{\text{Actual sales} - \text{Break even Sales}}{\text{Actual sales}}$$

Result and Discussion

1. Description of Research Results
 - a. Cost classification and semi-variable cost separation

Table 1
Fixed Cost and Variable Cost

Cost	Fixed Cost	Variable Cost
Raw Material Costs		277.670.961
Direct Labor Costs		144.000.000
Cost of Auxiliary Materials		27.090.220
Maintenance Cost of Machinery and Equipment Factory	1.870.525	2.268.475
Electricity Costs	248.413	26.239.040
Gas Fees		21.600.000
Water Costs		3.047.000
Salary Cost	38.400.000	
Office Supplies Cost	3.600.000	
Phone and Internet Charges	3.360.000	
Depreciation Costs of Fixed Assets	59.139.351	
Building Maintenance Costs	5.525.481	569.519
Administrative and General Expenses	2.400.000	
Total Cost	114.543.770	502.485.216

Source: Secondary data processed, in 2022

- b. Contribution Margin

Table 2
Contribution Margin (CM)

CM	Value
CM (Rp)	Rp 319.824.784
CM (Ratio)	0,3889

Source: Secondary data processed, in 2022

Based on these calculations, it can be seen that sales at the Bandung Tawar Bread Factory contributed a margin of 38.89%, or RP 319,824,784 to the company.

c. Break Even

Table 3
Multi Product Break Even Calculation Results

Types of Bread	BE (Unit)	BE (Rp)
Tawar Bread	37.410	187.047.557
Toast Bread	11.380	102.421.248
Bagelen Bread	662	3.312.357
Burger Bun	869	7.824.386
Hotdog Bread	795	8.739.658
Total	51.116	309.345.206

Source: Secondary data processed, in 2022

Based on Table 3, it is known that the break-even state of each product sold by the company, namely, for Roti Tawar amounted to Rp. 187,047,557 with a sales level of 37,410 packs, Toast Bread of Rp. 102,421,248 with a sales level of 11,380 packs, Bagelen Bread of Rp. 3,312,357 with a sales level of 662 packs, Burger Buns of Rp. 7,824,386 with a sales level of 869 packs, and Roti Hotdog of Rp 8,739,658 with a sales rate of 795 packs.

d. Profit Planning

Table 4
Individual Product Plans
The year 2022
(23% increase in profit)

Types of Bread	Profit Targets (Unit)	Profit Targets (Rp)
Tawar Bread	119.874	599.367.617
Toast Bread	36.466	328.194.500
Bagelen Bread	2.123	10.613.984
Burger Bun	2.786	25.072.146
Hotdog Bread	2.546	28.005.005
Total	163.794	991.253.251

Source: Secondary data processed, in 2022

Based on Table 4, shows the sales of each type of bread in a year that must be sold by the company to achieve the profit target of Rp 252,495,648 in units and rupiah.

e. Margin of Safety

Table 5
The Margin of Safety Calculation Results

Margin of Safety	Total
Sales Budget	991.253.251
Sales Break Even	309.345.206
The Margin of Safety (Rp)	681.908.045
The Margin of Safety (Unit)	112.678
The Margin of Safety (%)	68,8%

Source: Secondary data processed, in 2022

Based on the data in Table 5, if the company wants an increase in profit of 23%, then the margin of safety level in 2022 will be 68.8%. So that the maximum sales reduction limit is Rp 681,908,045 or as

many as 112,678 packs of total sales. Companies that have high margins of safety are said to be likely to suffer low losses, due to the large tolerable range of sales declines.

2. Discussion

- a. The separation of semi-variable costs into fixed costs and variable costs is carried out so that the cost charges carried out by the Bandung Tawar Bread Factory are following their cost behavior to make it easier for companies to control the costs incurred. Semi-variable cost separation is done by the Least Square Method. The results obtained from this calculation are for the cost of maintaining machinery and factory equipment, the total fixed costs are Rp 1,870,525 and variable costs are Rp 2,268,475, electricity costs are obtained for fixed costs of Rp 248,475 and variable costs of Rp 26,239,040, and for building maintenance costs obtained the results of fixed costs of Rp 5,525,481 and variable costs of Rp 569,519.
- b. The calculation of Contribution Margin and Contribution Margin Ratio aims to determine the amount of the company's profit contribution. The amount of profit contribution greatly affects the amount of profit obtained after the company breaks even. After the break-even condition, each unit sold can be multiplied by the contribution of profit that brings the total operating profit of the enterprise. The amount of Contribution Margin obtained is Rp. 319,824,784 and the amount Contribution Margin Ratio obtained is 38.89%.
- c. The next stage in the Cost Volume Profit Analysis is to calculate the Break Even or breakeven condition. The break-even calculation aims to provide information, namely the minimum limit on the number of products produced by the company without losses and not experiencing profits. The amount of break-even of each type of bread is Rp 187,047,557 with a sales rate of 37,410 packs, Toast Bread of Rp 102,421,248 with a sales level of 11,380 packs, Bagelen Bread of Rp 3,312,357 with a sales rate of 662 packs, Burger Buns of Rp 7,824,386 with a sales rate of 869 packs, and Hotdog Bread of Rp 8,739,658 with a sales rate of 795 packs.
- d. The company plans to increase profits. The company plans a 23% increase in profits for 2022. Based on this plan, with the Cost Volume Profit Analysis, the sales results that must be achieved by the company amounted to Rp 991,253,251 with a sales level of 163,794 packs.
- e. Margin of Safety is used to provide additional information to improve the supervision of the company's operations. In addition, the margin of safety aims to find out how much the planned decline in sales may decrease but the company does not suffer losses. Based on the calculations carried out, the amount of margin of safety is 68.8%. This shows that the company may experience a decrease of no more than 68.8% because the company will experience losses. Conversely, if the decline in sales is less than 68.8%, the company will make a profit.

Conclusion

Based on the results of the analysis carried out, it can be concluded that: 1) The sales target that must be achieved by the Bandung Tawar Bread Factory in 2021 in a break-even condition is Rp 309,345,206 or 51,116 units of bread, 2) The Bandung Tawar Bread Factory wants a 23% increase in profit or an increase of Rp 252,495,648 from sales in 2021. So that the level of sales that must be achieved by the company is Rp 991,253,251 or 163,794 units of bread, 3) The margin of safety level that must be achieved by the Bandung Tawar Bread Factory in 2022 is 68.8%. In sales units, the maximum decrease in sales was 112,678 units or Rp 681,908,045.

This research can provide implications to the Bandung Tawar Bread Factory regarding profit planning related to steps to plan profits and increase product sales using cost volume profit analysis. Through the application of this analysis, companies can find out about the types of costs and how to group them. In addition, companies can also prevent sales losses by conducting break-even and margin of safety analyses.

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