

Break Even Point Analysis for Amplang Business Profit Planning

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Abstract— The aim of this research is to find out how much sales volume must be achieved in producing and selling 2 products so that this business is in Break Even Point (BEP) condition. The first research stage is to separate fixed costs and variable costs; second, classifying fixed costs and variable costs and determining production and sales volumes; third, is to carry out analysis and calculations using the BEP formula. This business can increase its production to obtain planned profits in the future. The results of the research show that: (1) Break Even Point in 2022 is IDR 20,369,132.00 with sales of 412 units consisting of 230 Milkfish Amplang and 182 Units of Tenggiri Fish Amplang, (2) Margin of Safety is 90% (3) and the estimated profit the company wants to increase by 10% or Rp. 12,856,700.00 in 2023, then the company must be able to sell a total of 791 units or Rp. 39,092,219.00.

Keywords— Break Even Point, Fixed Costs, Variable Costs, Profit Planning

I. INTRODUCTION

The business world in Indonesia is developing very rapidly and this has resulted in increasing purchasing power. This has a big impact on business actors, especially Micro, Small and Medium Enterprises (MSMEs). Micro, Small and Medium Enterprises (MSMEs) generally refer to productive economic enterprises owned by individuals or business entities.

All businesses, including MSMEs, have the aim of making a profit from sales. The profits obtained are often a measure of the success or failure of a business. Therefore, it is very important for a business to have a plan, because planning affects the profits and success of a business in the future. Profits obtained from business activities can be increased by increasing sales volume or selling price and reducing costs.

Efforts to increase profits cannot be separated from sales. The role of sales is also important in business activities because sales act as a source of profit, therefore the selling price of the product, product volume and costs related to each other are factors that influence the profit generation of business activities.

Analysis to determine the relationship between costs, volume and profit in sales planning can be carried out using the Break Even Point analysis technique or break even point. Break Even Point can be interpreted as a condition in business operations, namely that the business does not suffer losses or profits (Revenue = total costs). A business can be said to be in a break-even condition when the sales proceeds obtained by the company are equal to the total costs incurred by the business.

Break Even Point analysis applies to all business fields with the aim of knowing profits or gains. The author took the research object as Amplang Iwan Bukuan's business, which

operates in the culinary sector, producing and selling traditional Samarinda snacks. Amplang Iwan Bukuan's business has only been running for approximately four years starting from 2019. Amplang Iwan Bukuan's business has been running very well. Therefore, it is hoped that the Break Even Point analysis calculation can make profit planning for the Amplang Iwan Bukuan business better so that it can produce optimal profits.

II. LITERATURE REVIEW

Accounting

Accounting is often referred to as bookkeeping/bookkeeping or note taking. This understanding is not completely wrong, in simple terms accounting is a process that begins with recording transactions accompanied by proof of transactions so that in the end it will provide information for parties who need it (Rahmi, 2021:1). Furthermore, Sujarweni in (Daud, 2019), accounting comes from English, namely "to account" which means to calculate or account for something related to the management of the financial sector of a company to its owner based on the trust that has been given to the manager to carry out activities. company. Accounting is identifying, recording, classifying, summarizing and reporting transactions in such a way and systematically.

Management Accounting

Management accounting is an aspect that plays an important role in a company, because to achieve the company's goals it must be able to create and implement management well.

Management Accounting is the process of identifying, measuring, accumulating, analyzing, preparing, interpreting and communicating financial information used by management for planning, evaluating, controlling and returning decisions (National Associations of Accountants). Furthermore, Manurung (2022:2) Management accounting is a field of accounting science that provides financial information to internal parties of an entity in decision making. The resulting financial information is not published to the public. Management accounting initially only focused on determining costs and maximizing profits, but as it developed, management accounting was required to make various adjustments to business practices. Meanwhile, Rahmi (2021:2) Management Accounting is accounting information that provides information to internal decision makers of a company or organization.

Cost Accounting

Cost accounting is part of management accounting which is a special field of accounting that emphasizes determining and controlling costs. This field is mainly related to the costs of producing an item, until now there are still many people who think that cost accounting can only be applied to the manufacturing sector. Although in reality, almost every type of business can benefit from cost accounting. Currently, cost accounting has been applied to various fields of non-manufacturing or service activities (World, 2019:4). Cost Accounting is measuring, analyzing and reporting financial and non-financial information related to the costs of acquiring or using company resources (Dewi, 2019:12).

Cost

One of the management information is the costs that must be incurred by a company in running and developing its business. With this cost information, it will be used as a basis for anticipating costs in getting the profit that has been planned by the company.

Costs is a result of the company's business activities in order to generate income (Rahmi, 2021:10). Furthermore, costs are exchange rates, expenses, or sacrifices made to obtain benefits (Dewi, 2019:17). Costs are often equated with expenses, so they need to be differentiated, where costs are a sacrifice of economic resources measured in units of money, to obtain goods or services that are expected to provide benefits both now and in the future. Costs discusses how costs change when activities change, which is very important for planning, controlling and decision making (Manurung, 2022:38). For example, budgeting, deciding to maintain or discontinue a product line, and evaluating segment performance all depend on understanding costs

Costs can be divided into 3 groups, namely fixed costs, variable costs and semi-variable costs. Fixed costs are costs whose total amount is constant (fixed) within the relevant range when the level of output increases or decreases. Variable costs are costs whose total changes proportionally to changes in the output of the activity driver, while the cost per unit remains within certain relevant limits. Semi-variable costs are costs that partly contain fixed costs and variable costs. Semi-variable costs are costs whose total changes, but are not proportional to changes in the output of the activity driver and changes in cost per unit also change inversely with changes in the output of the activity driver (Putri, 2020: 100).

Cost classification in relation to products is divided into two, namely raw material costs and labor costs. Direct raw material costs are all raw material costs from finished products and are included in the product cost calculation. Labor costs are labor that carries out the process and is directly related to the product by converting raw materials directly into finished products.

Sales

Sales are activities carried out by sellers in selling goods or services with the hope of making a profit from these transactions and sales can be interpreted as transferring or transferring ownership rights to goods or services from the seller to the buyer (Mulyadi in Marnoto, 2019). Sales is a

process of exchanging goods or services between sellers and buyers (Daulay, 2023:577). Meanwhile, according to Simamora in Endaryono (2021), sales are all costs incurred to obtain customer orders and deliver products or services to customers.

Sales Volume is the sales that a company has achieved or wants to achieve within a certain period of time (Kamelia in Daulay, 2023). Sales volume is a way to implement strategies that can increase sales every day so that this goal can be achieved (Gaho 2022:200). Furthermore, sales volume is the number of products or brands a company sells in a period (Pass and Lowes as translated by Santoso in Marnoto, 2019).

Sales Mix

The sales mix is a tool that will determine the level of sales success for the company and tries to overcome challenges aggressively by implementing different strategies in each aspect, namely product, price, promotion and distribution. The aim is to maintain the position with all the capabilities possessed and to achieve the expected results, namely increasing company growth, gaining profits and controlling market share.

The sales mix is a set of tools that marketers can use to form the characteristics of the services offered to customers (Fandy Tjiptono in Bisri 2018). The sales mix is a series of marketing tools used by a company to achieve company goals in the target market (Kotler and Armstrong, 2012: 62).

Profit and Loss

Profit generation is an important factor in assessing the success of a business. This can motivate management to achieve optimal profits and ensure employee welfare. Apart from that, profit is also the final result of the business goals carried out by the business owner. Earning profits must be the focus in carrying out business operational activities in order to maintain the continuity of the business.

Profit is an indicator of a company's success, which is one of the company's main goals, so that the company can survive and develop further. The company's profits are handed over to the business owner. Thus, owners who create a business have a strong incentive to ensure that the business is successful, because they directly benefit from the business (Endaryono, 2021:125). Profit is an increase in capital (net assets) originating from side transactions or transactions that rarely occur from a business entity and from all other transactions or events that affect the business entity during a period, except those included in the owner's income or investments (Henry in Jawad, 2016).

Loss is a decrease in equity (net assets) of an entity resulting from peripheral transactions (transactions outside the company's main operations or central operations) or transactions that occur infrequently and from all other transactions and other events and circumstances that affect the entity, excluding which originates as a burden or distribution to the owner (Hery, 2014:39). Loss is a decrease in capital (net assets) from side transactions or transactions that rarely occur from a business entity and from all other transactions or events that affect the business entity during a period except those

arising from costs or distributions to owners (Baridwan, 2019:5).

Break Even Point

Break Event Point (BEP) is a condition where a company in its business does not make a profit or suffers a loss (V. Wiranata Sujarweni in Maulidia, 2020). In other words, in that situation the profit or loss is equal to zero." Furthermore, according to Siregar in (Maulidia, 2020) Break Even Point or break-even point is the amount of income received by an entity that is assessed as equal to the amount of costs incurred by an entity. The break-even point here can be formulated using two approaches, namely the break-even point in the number of units and in the amount of sales rupiah. Then according to Manuho, (2021:21) Break Even Point is a condition that can occur in a company, namely a condition where the company in its operations does not make a profit and also does not suffer a loss. In other words, income and costs are in the same condition, so the company's profit is zero (revenue = total costs).

Margin of Safety

The margin of safety is the excess of budgeted or realized sales above the break-even point, the results of the calculation can show how much sales can fall to reach the break-even point (Samryn, 2012: 24). Furthermore, according to Rachmina and Sari (2017:12), margin of safety (MOS) is the excess amount of budgeted sales above the sales volume break-even point and how much the sales volume can decrease before losses start to occur.

III. RESEARCH METHOD

This research was conducted at the Amplang Iwan Bukuan Business, Palaran District, East Kalimantan. The research data collected is in the form of product data produced, cost data, production data and sales data.

Research data was collected through observation and interviews. Direct observation of the research object which aims to see the actual situation that occurs at the Amplang Iwan Bukuan Business. See directly the process of producing Amplang from start to end of the process and see firsthand the materials used by Iwan Bukuan's Amplang Business in producing Amplang. Interviews were conducted to obtain or obtain information directly from the owner of the Amplang Iwan Bukuan business by making an effort to answer verbally with the owner to obtain information such as when the Amplang Iwan Bukuan business was founded, what products were sold, the prices of the products sold, the materials used in producing products, as well as the costs incurred during the production process.

The analytical tools used use profit planning formulas, break-even analysis, margin of safety analysis, and break-even point sales mix.

IV. RESEARCH RESULT

Research Data

Data is one of the most important things in preparing reports. The following are details of the data obtained by the author while conducting research.

Amplang Iwan Bukuan's business produces and sells 4,200 with a selling price of Rp 45,000.00 and Rp 55,000.00 per pack. Production data per unit per month for the Amplang Business during 2022 can be seen in the Table I and Table II.

TABLE I. Data on Production and Sales Volume of Milkfish Amplang for 2022

| Month | Quantity Sold | Selling Price per Pack (Rp) | Total Sales (Rp) |
|-----------|---------------|-----------------------------|------------------|
| January | 210 | 45,000 | 9,450,000 |
| February | 200 | 45,000 | 9,000,000 |
| March | 190 | 45,000 | 8,550,000 |
| April | 180 | 45,000 | 8,100,000 |
| May | 200 | 45,000 | 9,000,000 |
| June | 195 | 45,000 | 8,775,000 |
| July | 190 | 45,000 | 8,550,000 |
| August | 210 | 45,000 | 9,450,000 |
| September | 200 | 45,000 | 9,000,000 |
| October | 190 | 45,000 | 8,550,000 |
| November | 180 | 45,000 | 8,100,000 |
| December | 195 | 45,000 | 8,775,000 |
| Total | 2,340 | 540,000 | 105,300,000 |

TABLE II. Data on Production and Sales Volume of Tenggiri Amplang for 2022

| Month | Quantity Sold | Selling Price per Pack (Rp) | Total Sales (Rp) |
|-----------|---------------|-----------------------------|------------------|
| January | 155 | 55,000 | 8,525,000 |
| February | 150 | 55,000 | 8,250,000 |
| March | 165 | 55,000 | 9,075,000 |
| April | 155 | 55,000 | 8,525,000 |
| May | 155 | 55,000 | 8,525,000 |
| June | 150 | 55,000 | 8,250,000 |
| July | 160 | 55,000 | 8,800,000 |
| August | 155 | 55,000 | 8,525,000 |
| September | 150 | 55,000 | 8,250,000 |
| October | 160 | 55,000 | 8,800,000 |
| November | 150 | 55,000 | 8,250,000 |
| December | 155 | 55,000 | 8,525,000 |
| Total | 1,860 | 660,000 | 102,300,000 |

Cost Classification

Cost classification is carried out to map what costs are included in fixed costs and variable costs. For this reason, it is necessary to classify costs using operational data. The following is summary data on operational costs.

TABLE III. Cost Classification of Year 2022

| Type of Cost | Fixed Cost (Rp) | Variable Cost (Rp) |
|-------------------------------|-------------------|--------------------|
| Raw Material Cost: | | |
| Milkfish Amplang | | 28,236,000 |
| Tenggiri Fish Amplang | | 32,916,000 |
| Labor Cost: | | |
| Sales Department | 12,000,000 | |
| Factory Overhead Cost: | | |
| LPG gas 3 kg | | 1,248,000 |
| Electricity cost | | 660,000 |
| Water Costs | | 186,000 |
| Plastic Costs | | 1,800,000 |
| Cost of Depreciation: | | |
| Vehicle Depreciation Costs | 1,250,000 | |
| Equipment Depreciation Costs | 737,000 | |
| TOTAL | 13,987,000 | 65,046,000 |

Budget Allocation of Fixed Costs and Variable Costs for Each Production

The percentage based on the products produced by Amplang Iwan Bukuan Business in 2022 is as follows:

1. Milkfish Amplang = $45,000/100,000 \times 100\% = 45\%$
2. Tenggiri Fish Amplang = $55,000/100,000 \times 100\% = 55\%$

Based on calculations, it is known that the percentage of fixed costs for milkfish amplang products is 45% and mackerel fish amplang is 55%. On the Table IV and Table V shows the allocation of fixed costs and variable costs for each product in the Amplang Iwan Bukuan Business during 2022.

TABLE IV. Fixed Cost Budget Allocation Data for Each Product

| Amplang | Fixed Cost Amount (Rp) | % | The amount of costs (Rp) |
|-----------------------|------------------------|-----|--------------------------|
| Milkfish Amplang | 13,987,000 | 45% | 6,294,150 |
| Tenggiri Fish Amplang | 13,987,000 | 55% | 7,692,850 |
| Total | | | 13,987,000 |

Based on Table IV, the total annual fixed cost charges for products amount to Rp 13,987,000.00 consisting of milkfish amplang amounting to Rp 6,294,150.00 and Tenggiri fish amplang amounting to Rp 7,692,850.00.

TABLE V. Variable Cost Data for Year 2022

| Variable Costs | Milkfish Amplang (Rp) | Tenggiri Fish Amplang (Rp) | Amount (Rp) |
|------------------------|-----------------------|----------------------------|-------------|
| Raw Material Costs | 28,236,000 | 32,916,000 | 61,152,000 |
| Lpg gas 3 kg | 624,000 | 624,000 | 1,248,000 |
| Electricity cost | 330,000 | 330,000 | 660,000 |
| Water Costs | 93,000 | 93,000 | 186,000 |
| Plastic Costs | 900,000 | 900,000 | 1,800,000 |
| Total | 30,183,000 | 34,863,000 | 65,046,000 |
| Variable Cost Per Unit | 12,899 | 18,744 | 31,642 |

Based on table V, the variable costs for milkfish amplang products are Rp 30,183,000.00 or Rp 12,899.00 per unit and tenggiri fish amplang is Rp 34,863,000.00 or Rp 18,744.00 per unit. So the total variable costs are Rp 65,046,000.00 or per unit Rp 31,642.00.

Break Even Point Analysis

The break even point for the Amplang Iwan Bukuan business for 2022 can be found as follows:

TABLE VI. Sales Data and Profit Earnings per Product for Year 2022

| | Milkfish Amplang (Rp) | Tenggiri Fish Amplang (Rp) | Amount (Rp) |
|---------------|-----------------------|----------------------------|-------------|
| Sales | 105,300,000 | 102,300,000 | 207,600,000 |
| | 2,340 pack | 1,860 pack | 4,200 pack |
| Variable Cost | 30,183,000 | 34,863,000 | 65,046,000 |
| Fixed Cost | 6,294,150 | 7,692,850 | 13,987,000 |
| Total Costs | 36,477,150 | 42,555,850 | 79,033,000 |
| Profit / Loss | 68,822,850 | 59,744,150 | 128,567,000 |

TABLE VII. Sales Break Even Point per Product for Year 2022

| | Milkfish Amplang (Rp) | Tenggiri Fish Amplang (Rp) | Amount (Rp) |
|---------------|-----------------------|----------------------------|-------------|
| Sales | 10,331,742 | 10,037,390 | 20,369,132 |
| | 230 pack | 182 pack | 412 pack |
| Variable Cost | 46% | 54% | 100% |
| | 2,961,472 | 3,420,660 | 6,382,132 |
| Fixed Cost | 6,294,150 | 7,692,850 | 13,987,000 |
| Total Costs | 9,255,622 | 11,113,510 | 20,369,132 |
| Profit / Loss | 1,076,120 | (1,076,120) | - |

The margin of safety for the Amplang Iwan Bukuan Business in 2022 can be determined as follows:

$$\begin{aligned} \text{MoS (Rp)} &= \text{Sales} - \text{Break Even Sales} \\ &= \text{Rp } 207,600,000.00 - \text{Rp } 20,369,132.00 \\ &= \text{Rp } 187,230,868.00 \end{aligned}$$

Based on the results of calculating the margin of safety in rupiah and in percentage, the results show that the target or (sales budget) could decrease by IDR 187,230,868.00 from the initial sales target of IDR 207,600,000.00. Where if the reduction in sales targets actually occurs then it will not cause the company to experience losses or means the company is still in a safe condition.

Tax Planning

Amplang Iwan Bukuan's business will make a profit of Rp128,567,000.00 for 2022. In the following year, the business owner wants to set a profit target of 10% of the total profit in 2022, namely (Rp 128,567,000 x 10% = Rp 12,856,700.00 + Rp 128,567,000 = Rp 141,423,700.00) for that profit planning by calculating minimum sales as follows:

$$\begin{aligned} \text{Total Sales (Rp)} &= \frac{\text{Fixed Cost} + \text{Profit Target}}{1 - \frac{\text{Variable Cost}}{\text{Sales}}} \\ &= \frac{\text{Rp } 13,987,000.00 + \text{Rp } 12,856,700.00}{1 - \frac{\text{Rp } 65,046,000.00}{\text{Rp } 207,600,000.00}} \\ &= \text{Rp } 39,092,219.00 \end{aligned}$$

The allocation of sales amounts for each product is as follows:

1. Sales of Milkfish Amplang = Rp. 19,828,567.00 or 441 packs
2. Sales of Tenggiri Fish Amplang = Rp. 19,263,651.00 or 350 packs

Meanwhile, the margin of safety (MoS) for the Amplang Iwan Bukuan Business after profit planning is as follows:

$$\begin{aligned} \text{Margin of Safety (\%)} &= \frac{\text{Fixed Cost} - \text{BEP}}{\text{Anggaran Penjualan}} \times 100\% \\ &= \frac{\text{Rp } 39,092,219.00 - \text{Rp } 20,369,132.00}{\text{Rp } 39,092,219.00} \times 100\% \\ &= 48\% \end{aligned}$$

The calculation results show that the sales budget can decrease by 48% or Rp. 18,723,087.00, where if this decrease in sales occurs it will not cause the company to suffer a loss or the company will still be in a safe condition. So from all the analysis and calculations above, information is obtained:

1. The sales volume that must be achieved for Iwan Bukuan's Amplang Business to reach the break-even point (BEP) is IDR 20,369,132.00 and the sales volume is 412 units consisting of 230 units of Milkfish Amplang and 182 units of Mackerel Amplang.
2. The percentage of safety limit or margin of safety results show 90% or IDR 187,230,868.00 of the initial sales target of IDR 207,600,000.00, which means it will not cause the company to experience losses or means the company is still in a safe condition.
3. Mixed sales volume in 2023 in order to achieve the profit target of 10% of the profit earned in 2022, then mixed sales

in 2023 must reach Rp 39,092,219.00 with a total of 791 mixed units with a profit of Rp 141,423,700.00. By planning the profit target, the MoS level is obtained at Rp18,723,087.00 or 48%.

V. CONCLUSION

After the author carried out an analysis of the products and sales of milkfish amplang and tenggiri fish amplang using the break even point (BEP) analysis tool carried out at the Iwan Bukuan Amplang Business, from this the author can draw the conclusion that:

1. Amplang Iwan Bukuan's business is able to reach the break even point or meet costs in 2022. Break Even Point is where the total income is equal to the total costs incurred by the company. Where in 2022 the break even point achieved by the business is Rp 20,369,132.00 and the sales volume is 412 units, with total income or sales of Rp 207,600,000.00 and fixed costs of Rp 13,987,000.00.
2. Margin of Safety shows the distance between planned sales and sales at the break even point. Iwan Bukuan's Amplang business in 2022 will experience an MoS level of 90%. The higher a company's margin of safety is said to be better because the range of sales decline that can be tolerated is greater so the possibility of suffering losses is low. However, on the other hand, if the margin of safety is low, the company is likely to suffer large losses.
3. The profit target expected by Amplang Iwan Bukuan Business for 2023 is 10% of the profit earned in 2022 or worth Rp 12,856,700.00 with total sales of 791 units or

worth Rp 39,092,219.00. The product mix distribution consists of 441 units of Milkfish Amplang and 350 units of Tenggiri Fish Amplang.

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