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Analysis Of Activity Based Costing And Cost Volume Profit To Determine Optimal Profit At The Eka Jaya Opak Factory

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Abstract

Competition in the traditional food industry requires Micro, Small, and Medium Enterprises (MSMEs) to have an accurate costing system to support optimal selling price determination and profit planning. The Eka Jaya Opak Factory, one of the MSMEs processing raw opak in Deli Serdang Regency, still uses conventional costing methods that only calculate raw material and direct labor costs, while factory overhead costs have not been allocated systematically. This condition has the potential to cause cost distortion and inaccuracies in profit planning. This study aims to analyze the application of Activity-Based Costing (ABC) in determining the cost of production and integrate it with Cost-Volume-Profit (CVP) analysis to determine optimal profit. This study uses a qualitative descriptive approach with data collection techniques through observation, interviews, and documentation. Data are analyzed through the stages of data reduction, data presentation, and conclusion drawing. The results show that the cost of production based on the ABC method is Rp 7,050.3/kg, higher than the conventional method of Rp 6,681/kg because overhead costs are allocated based on actual activities that consume resources. The integration of ABC and CVP resulted in an optimal selling price strategy at a 50% markup with a profit of Rp 109,984,664 per month, a Break Even Point of 6,394 kg, and a Margin of Safety of 79.5%. These findings indicate that the integrated ABC and CVP approach can improve the accuracy of cost information and support managerial decision-making in MSME profit planning more effectively and sustainably.

INTRODUCTION

Indonesia's traditional food industry faces significant challenges in an era of increasingly fierce business competition. Small and Medium Enterprises (MSMEs) are required to manage production costs efficiently and effectively to achieve optimal profits. Accurate cost calculations are key to strategic decision-making, particularly in determining product selling prices and appropriate production volumes (Nawa & Hamel, 2025). Research by (Fatmawati et al., 2024) in the context of oil palm plantations shows that fluctuations in selling prices and production directly impact labor income. While the context is different, this reinforces the importance of precise selling price calculations for both businesses and workers. Therefore, pricing must take into account not only profit targets but also the continued well-being of businesses and workers in general

Traditional costing systems in MSMEs are often inaccurate due to improper overhead allocation. Assigning raw material and direct labor costs to manufactured products is accurate and easy because these costs can be allocated directly to the finished product. Conversely, assigning factory overhead costs requires careful allocation methods because these costs cannot be directly identified with the product (Aulia & Anam, 2021). Inaccuracies in overhead cost allocation can cause distortions in product pricing and impact company profitability (firmansyah, 2020).

Theoretically, manual costing methods can still be used in small-scale businesses with simple production processes and relatively homogeneous activities. Under these conditions, the number

of products produced is still limited, activity variation is low, and the proportion of overhead costs is not too large. According to (Saeed et al., 2023), a simple costing system is considered adequate to provide an overview of total production costs when the cost structure is not yet complex and managerial information needs are still limited. Furthermore, manual methods are also easier for MSMEs to implement because they do not require complex activity grouping and cost tracking. However, modern cost accounting theory explains that the complexity of production activities is determined not only by the number of product types, but also by the number of activities and the proportion of overhead costs incurred. (Baviga & Amriana, 2023) emphasize that as overhead costs increase and production activities become more diverse, manual systems become less relevant because they are unable to accurately reflect resource consumption. As a result, the resulting cost information does not reflect actual resource usage, potentially leading to errors in pricing and profit planning..

Similar problems were also encountered at the Eka Jaya Opak Factory, a small and medium-sized enterprise (SME) engaged in the raw opak (rice crackers) industry. It has been operating for 25 years and employs 20 permanent employees. The company produces raw opak, which is resold to MSMEs in North Sumatra and beyond. The rapid growth of the opak industry has created intense competition, necessitating a thorough calculation of the cost of goods sold (COGS) to determine an accurate and precise cost of goods sold. Currently, the company sets a selling price of Rp 8,686 per kilogram with a profit target of 30% of the cost of goods sold. Interviews revealed that production cost calculations at this factory are still performed manually using a simple approach. The business owner only calculates the costs of raw materials and direct labor, while factory overhead costs, such as indirect materials, utilities, and machine depreciation, have not been allocated in detail based on production activity. Consequently, the COGS used as the basis for determining selling prices do not reflect actual operational conditions, resulting in fluctuating and difficult-to-predict profits for each production period. This situation indicates inaccuracies in production cost calculations due to overhead cost allocations that do not reflect actual activity consumption, resulting in suboptimal selling price determination and profit planning. Therefore, this study applies the Activity-Based Costing (ABC) method to generate a more accurate cost of goods manufactured. This method is then analyzed using the Cost-Volume-Profit (CVP) approach to determine the break-even point and optimal profit at the Eka Jaya Opak Factory.

Previous studies have demonstrated the effectiveness of implementing the ABC method in various industries. Research by (Nurhidayah et al., 2021) In his research entitled "Comparative Analysis of Inpatient Service Rates Using the Traditional Costing System and the Activity-Based Costing System (Case Study at Mitra Medika Amplas General Hospital, Medan)," he compared the traditional costing and Activity-Based Costing methods in determining service costs in the healthcare sector. The study aimed to determine the accuracy of the cost calculations produced by each method. The results showed that the Activity-Based Costing method was able to reduce cost distortion and produce more accurate calculations. However, this study focused only on cost calculations, without linking the results to profit analysis or profit planning. Furthermore, (Ningtias, 2022) In his research entitled "Analysis of Quality Costs in "Ramayana" Apple Chips Products Using the Activity Based Costing Method," he examined the application of Activity-Based Costing in analyzing quality costs in the apple chip agro-industry. This research aims to identify and control quality costs to improve production efficiency. The results of the study indicate that the ABC method is able to provide more detailed quality cost information. However, this research does not discuss profit planning or analysis of the relationship between costs, volume,

and profits, so the benefits of the ABC method in determining optimal profits have not been described. Furthermore, (Safitri, 2022) and (Nawa & Hamel, 2025) In his research entitled "Cost-Volume-Profit Analysis as a Profit Planning Tool at CV. Obor Inti Boga Jember," he examined the use of Cost-Volume-Profit analysis as a profit planning tool in manufacturing companies. The focus of this research was to determine the break-even point and profit target based on changes in sales volume. The results showed that CVP analysis is effective as a profit planning tool. However, this research still uses cost data calculated using traditional methods, so the accuracy of the profit planning results is highly dependent on the potentially inaccurate cost calculation system. Then, (Digjaya et al., 2024) and (Purwoko et al., 2022) In his research entitled "Activity-Based Costing Analysis for Used Goods Sales," this study aims to obtain a more accurate calculation of the cost of goods manufactured through activity-based overhead cost allocation. The results of the study indicate that the ABC method provides more accurate cost information. However, this study has not integrated the results of the cost calculation with the Cost-Volume-Profit analysis, so the implications for profit planning have not been analyzed in depth. In addition, (Purba et al., 2024) In his research, entitled "Activity-Based Costing (ABC) and Time-Driven Activity-Based Costing (TDABC) in Determining Selling Prices," he compared the Activity-Based Costing and Time-Driven Activity-Based Costing methods in the food processing industry. The focus of this research was to assess the efficiency and advantages of each method in calculating production costs. The results showed that both methods have advantages in improving cost accuracy. However, this study did not examine the use of cost calculation results for profit planning and had not specifically applied them to traditional food industry MSMEs with simple cost recording systems.

Based on this description, it can be concluded that previous research has focused on the separate application of the ABC or CVP methods. Furthermore, most research has been conducted in large-scale companies or the modern industrial sector. Therefore, research integrating the ABC and CVP methods simultaneously in traditional food industry MSMEs based on observations of actual production activities is still very limited. This situation indicates a research gap that needs to be filled.

The novelty of this research lies in the simultaneous application of an integrated approach between the Activity-Based Costing and Cost-Volume-Profit methods in traditional food industry MSMEs. This study not only calculates the cost of goods manufactured using the Activity-Based Costing method to obtain a more accurate allocation of overhead costs, but also uses the results of these calculations as the basis for a Cost-Volume-Profit analysis to determine optimal profit, the break-even point, and the sales safety margin.

Therefore, this study aims to analyze the application of Activity-Based Costing (ABC) in determining the cost of goods manufactured and optimal profit, as well as to conduct a Cost-Volume-Profit (CVP) analysis to determine optimal profit. It is hoped that the results of this study will provide more accurate cost information and support managerial decision-making related to selling price determination and profit planning at the Eka Jaya Opak Factory.

METHODS

The research method used in this study is a descriptive qualitative method, which aims to provide a systematic and factual description of the application of Activity Based Costing and Cost Volume Profit Analysis in determining optimal profit at the Eka Jaya Opak Factory, located in Salam Tani, Pancur Batu District, Aman Abadi Tuntungan 1, Deli Serdang Regency, North Sumatra. The descriptive qualitative approach allows researchers to explore phenomena in depth in a real context, emphasizing the meaning, process, and in-depth understanding of cost management practices in the factory environment. The research data consists of primary and secondary data. Primary data refers to information obtained through direct observation and direct interviews with business owners (Afifah et al., 2020). Meanwhile, secondary data is information taken from company documents at the research location (Yunita et al., 2024). The research subjects were the Eka Jaya Opak Factory and purposively selected informants, namely those knowledgeable about calculating production costs and implementing cost accounting. The data analysis technique used was qualitative descriptive analysis, with several stages: data reduction, data presentation, and conclusion drawing. The resulting conclusions were then systematically compiled to provide implications and suggestions for further research (Salimah et al., 2024).

RESULTS AND DISCUSSION

Findings of the Costing System Used by the Factory

Based on observations and interviews, it was discovered that the Opak Eka Jaya Factory still applies a simple production costing method. In practice, the business owner only considers the costs of raw materials and direct labor as the basis for determining selling prices, while factory overhead costs such as auxiliary materials, electricity usage, fuel, loading costs, and machine depreciation have not been allocated systematically and in detail. The factory owner revealed that cost calculations have been carried out based on estimates without comprehensive record-keeping, resulting in several cost components often not being recorded consistently. This condition causes the cost information used to not fully reflect the actual consumption of resources in the production process. As a result, the company experiences difficulty in determining the actual net profit for each period and potentially produces inaccurate calculations of the cost of goods manufactured because not all production costs are adequately accumulated. Based on these conditions, this study then identifies actual production and cost data as the basis for further analysis.

Table 1. Direct Labor Costs

No	Job Section	Amount	Individual Wage	Daily Wage Earnings	Total Per Month
1	Sweet potato peeler 125 silver/kg	10 people	Rp.50.000	Rp. 500.000	Rp.13.000.000
2	Making opak	4 men	Rp.100.000	Rp. 960.000	Rp.24.960.000
		7 women	Rp. 80.000		
3	Workers drying opak	7 people	Rp. 80.000	Rp. 350.000	Rp. 9.100.000
4	Opak sifting worker	2 people	Rp. 40.000	Rp. 160.000	Rp. 4.160.000
Total Direct Labor Cost					**Rp.51.220.000**

Source: Eka Jaya Opak Factory

Table 2. Indirect Labor Costs

No	Job Section	Amount	Individual Wage	Daily Wage Earnings	Total Per Month
1	Opak loading costs	4	Rp.86.000	Rp. 344.000	Rp. 8.944.000
Total Indirect Labor Costs					Rp. 8.944.000

Source: Eka Jaya Opak Factory

Table 3. Cost of Auxiliary Materials

No	Information	One Day Production	One Month of Production	Price	Amount
1	Plastic rope	1 kg	26kg	Rp. 22.000	Rp. 572.000
2	Glass plastic	4 m	104 m	Rp. 12.000	Rp. 1.248.000
3	Jute	140	3.64	Rp. 2.500	Rp. 9.100.000
4	Solar	8 liter	206 liter	Rp. 6.800	Rp. 1.400.800
5	Wood	Half a truck	13 truck	Rp. 250.000	Rp. 6.500.000
Total Cost of Auxiliary Materials					**Rp. 18.820.800**

Source: Eka Jaya Opak Factory

Table 4. Electricity and Water Costs

No	Information	Monthly Fee
1	Electricity and Water	Rp. 50.000
Total Cost		**Rp. 50.000**

Source: Eka Jaya Opak Factory

Table 5. Depreciation Costs for Machinery and Equipment

No	Information	Unit	Purchase price	Residual value	Economic Life	Depreciation Expense per month	Amount
1	Cormorant	3	Rp. 3.500.000	Rp. 500.000	2	Rp. 125.000	Rp. 375.000
2	Sweet potato storage box	3	Rp. 1.000.000	Rp. 200.000	10	Rp. 6.667	Rp. 20.001
3	Sweet potato grinder	1	Rp. 3.500.000	Rp. 750.000	10	Rp. 29.160	Rp. 29.160
4	Press printing machine	1	Rp. 6.000.000	Rp. 1.000.000	10	Rp. 41.666	Rp. 41.666
5	Opaque printing	1	Rp. 3.500.000	Rp. 750.000	10	Rp. 22.916	Rp. 22.916
6	Dompling machine	1	Rp. 7.000.000	Rp. 1.500.000	10	Rp. 45.833	Rp. 45.833
Total Depreciation Cost of Machinery and Equipment at Eka Jaya Opak Factory							**Rp. 534.576**

Source: Eka Jaya Opak Factory

Implementation of the Activity-Based Costing (ABC) Method

To overcome the limitations of traditional methods used by factories, researchers implemented the Activity-Based Costing (ABC) method with the following stages:

1. **Identify Overhead Costs and Activities**

In the initial stage, all overhead costs incurred in the opak production process were identified. These costs were then linked to specific activities within the Eka Jaya Opak Factory's production process.

Table 6. Identification of Overhead Costs and Activities

No	Types of Overhead Costs	Mark (Rp)	Related Activities
1	Auxiliary Materials	Rp. 18.820.800	Use of production support materials
2	Electricity and Water Costs	Rp. 50.000	Operation of machines and facilities
3	Indirect Labor (Loading Costs)	Rp. 8.944.000	Product packaging and transportation
4	Depreciation of Machinery and Equipment	Rp. 534.576	Use of production equipment
Total Overhead Costs		**28.349.376**	

Source: Data processed by researchers (2025)

2. **Classification of Overhead Costs into Activity Levels**

Each previously identified overhead cost is grouped into a specific activity level. This classification is important for determining the most appropriate cost driver, allowing for more accurate cost allocation to products. The following is a grouping based on activity level:

Table 7. Classification of Overhead Costs by Activity Level

Overhead Cost Identification	Activity Level
Auxiliary Material Costs	Unit Level
Electricity and Water Costs	Unit Level
Indirect Labor Costs (loading costs)	Facility Level
Depreciation Cost of Machinery and Equipment	Facility Level

Source: Data processed by researchers (2025)

3. **Determining Cost Drivers and Pool Rates**

The next step is to determine the cost driver and pool rate, which are the factors that cause costs to arise for each previously grouped activity. This determination is essential for accurately allocating overhead costs to products.

The rate per cost driver (pool rate) is calculated using the following formula:

$$Pool\ rate = \frac{\text{Total Overhead Costs}}{\text{Volume Cost Driver}}$$

Table 8. Determining Cost Drivers and Pool Rates

No	Type of Fee	Total cost (Rp)	Cost Driver	Volume Driver	Pool Rate (Rp)
1	Auxiliary Materials	18.820.800	Production Kg	31.200	603,9/kg
2	Electricity and Water	50.000	Production Kg	31.200	1,60/kg
3	Indirect Labor	8.944.000	Batch Number	26	344.000/batch
4	Depreciation	534.576	Machine Hours	104 jam	5.140,15/ Hour

Source: Data processed by researchers (2025)

Based on production data, the Eka Jaya Opak Factory is capable of producing 1,200 kilograms of opak per day, so that in one month the total production reaches 31,200 kilograms. With this capacity, the production process is divided into 26 batches per month (31,200 kg ÷ 1,200 kg per batch). Each batch is estimated to require 4 hours of production time, so the total estimated machine usage hours in one month is 104 hours. This is used as the basis for calculating the allocation of overhead costs, especially for activities related to machine usage and the scale of production batches in the Activity-Based Costing (ABC) method.

4. Homogeneous Cost Grouping (Cost Pool)

Overhead costs that have similar activities and cost drivers are grouped into cost pools to facilitate the calculation of cost rates per activity (pool rate).

Table 9. Grouping of Homogeneous Costs

Cost Pool	Types of Overhead Costs	Cost Driver	Activity Level
Cost Pool 1	Indirect Material Costs	Number of kg produced	Unit Level
Cost Pool 2	Electricity and Water Costs	Number of kg produced	Unit Level
Cost Pool 3	Indirect Labor Costs	Number of production batches	Facility Level
Cost Pool 4	Machinery Depreciation Costs	Machine hours	Facility Level

Source: Data processed by researchers (2025)

5. Activity-Based Overhead Cost Assignment to Products

Activity-based overhead costs are allocated to products by multiplying the activity pool rate by the actual volume of each cost driver. Each activity, such as the use of auxiliary materials, electricity and water, loading costs, and machine depreciation, has its own cost driver that reflects actual resource consumption. This approach allows overhead costs to be allocated proportionally to each product unit, resulting in a more accurate calculation of the cost of goods manufactured and reflecting actual production conditions.

Table 10. Calculation of Overhead Costs Charged to Products

Activity Level	Cost Pool	Types of Overhead Costs	Pool Rate (Rp)	Volume Driver	Total cost (Rp)
Unit	Cost Pool 1	Auxiliary Materials	603,9 / kg	31.200 kg	18.820.800
Unit	Cost Pool 2	Electricity and Water	1,6 / kg	31.200 kg	50.000
Facility	Cost Pool 3	Indirect Labor	344.000/ batch	26 batch	8.944.000

Facility	Cost Pool 4	Depreciation of Machinery & Equipment	5.140,15/ hour	104 hour	534.576
Total Overhead (ABC) =					**Rp 28.349.376**

Source: Data processed by researchers (2025)

6. Calculation of Cost of Goods Sold Based on ABC

Cost of goods manufactured is calculated by adding all production cost components, including raw materials, direct labor, and factory overhead, allocated based on actual activity using the Activity-Based Costing (ABC) method. With this approach, each cost component reflects the actual resource consumption during the production process. The results of this calculation serve as the basis for determining product selling prices and more accurately analyzing company profitability.

Table 11. Calculation of Cost of Goods Sold Based on ABC

Production Cost Components	Amount (Rp)	Per kg (Rp)
Raw Material Cost	140.400.000	4.500,00
Direct Labor Cost	51.220.000	1.641,67
Overhead Cost (ABC)	28.349.376	908,63
Total Production Cost	**219.969.376**	**7.050,3**

Source: Data processed by researchers (2025)

Once the total production costs are known, the cost of goods sold per kilogram is calculated by dividing the total production costs by the number of units produced during a month. The calculation is as follows:

$$HPP\ per\ kg\ = \frac{\text{Rp } 219{,}969{,}376}{31{,}200} = \text{Rp } 7.050{,}3$$

From the calculations in Table 11, it is known that the total production cost for one month was Rp 219,969,376, consisting of raw material costs, direct labor, and overhead based on the Activity-Based Costing (ABC) approach. With a total production of 31,200 kg of opak, the cost of goods sold per kilogram was calculated at Rp 7,050.3.

Analysis of Selling Price Determination and Optimal Profit

The selling price per unit is determined using two markup percentages, namely 40% and 50%, as a comparison to determine a more optimal strategy.

1. Calculation of Selling Price:

Selling Price/Unit markup 40% = HPP + Markup
= 7.050,3+ (7.050,3×0,40)
= Rp. 9.870,42

Selling Price/Unit markup 50% = HPP + Markup
= 7.050,3+(7.050,3×0,50)

= Rp10.575,45

2. **Calculation of Profit per Unit:**

Profit per Unit = Selling Price − Cost of Goods Sold

Profit per unit with a 40% markup = Rp 9.870,42 − Rp 7.050,3
= Rp 2.820,12 per kg
Profit per unit with 50% markup = Rp 10.575,45 − Rp 7.050,3
= Rp 3.525,15 per kg

3. **Total Profit Calculation:**

Total Profit = Profit per Unit × Production Volume

Total profit with 40% markup = Rp 2.820,12 × 31.200
= Rp. 87,987,744 per month
Total profit with 50% markup = Rp 3.525,15 × 31.200
= Rp 109.984.664 per month

Based on the calculation results, a profit percentage of 50% produces a greater profit compared to a profit percentage of 40%. Therefore, a profit of Rp 109,984,664 per month at a 50% markup can be categorized as optimal profit based on the calculation of the cost of goods manufactured using the Activity-Based Costing method, because it provides maximum profit while still considering the actual production cost structure. The optimal profit obtained based on the calculation of the cost of goods manufactured using the Activity-Based Costing method is then analyzed using the Cost-Volume-Profit (CVP) approach to assess the relationship between costs, sales volume, and the level of profit security.

Cost-Volume-Profit (CVP) Analysis

To support Cost-Volume-Profit (CVP) analysis, all production cost components are classified into fixed and variable costs. This classification is important because it forms the basis for calculating the break-even point and margin of safety. Fixed costs remain constant despite changes in production volume, while variable costs change proportionally to the number of units produced. Based on one month's opak production data, the following is a summary of the classification of fixed and variable costs, as well as the calculation of variable costs per unit:

Table 12. Fixed and variable costs of the Eka Jaya Opak Factory

Product	Fixed Costs (Rp)	Variable Costs (Rp)	Variable Cost/Unit (Rp/kg)
Opak	28.349.376	191.620.000	6.141,67

Source: Data processed by researchers (2025)

The table above shows that the variable cost per kilogram of opaque product is Rp 6,141.67, which comes from the accumulated costs of raw materials and direct labor. Meanwhile, the fixed cost of Rp 28,349,376 comes from production overhead based on the Activity-Based Costing (ABC) approach. This information will form the basis for calculating the BEP and margin of safety analysis in the following sections.

Break Even Point (BEP) Analysis

Break Even Point (BEP) analysis aims to determine the minimum number of units that must be sold to avoid a loss, namely when total revenue equals total costs. The formula used is:

$$BEP = \frac{Fixed\ Costs}{\text{Selling price per unit} - \text{Variable cost per unit}}$$

1. BEP at 40% Markup

$$BEP = \frac{28.349.376}{9.870{,}42 - 6.141{,}67} = 7.603 \text{ kg}$$

2. BEP at 50% Markup

$$BEP = \frac{28.349.376}{10{,}575.45 - 6.141{,}67} = 6.394 \text{ kg}$$

The break-even point at a 50% markup is lower than at a 40% markup. This means that by setting a higher selling price (50% markup), the company only needs to sell fewer products to cover its total fixed and variable costs. This indicates that the 50% markup strategy is more profitable and safer, as it lowers the minimum sales threshold required to avoid losses. This strategy also provides more room for profit after the break-even point is reached.

Margin of Safety (MOS) Analysis

Margin of Safety (MOS) measures how much of a sales decline a company can tolerate before experiencing a loss. The formula used is:

$$MOS = \frac{\text{Total Sales} - \text{Break Even Point Sales}}{Total\ Sales} \times 100\%$$

1. MOS Markup 40%

$$MOS = \frac{307{,}957{,}104 - 75{,}043{,}982}{307{,}957{,}104} \times 100\% = 75.6\%$$

2. MOS Markup 50%

$$MOS = \frac{329{,}954{,}040 - 67{,}619{,}681}{329{,}954{,}040} \times 100\% = 79.5\%$$

The calculation results show that the Margin of Safety at a 40% markup is 75.6%, while at a 50% markup it is 79.5%. This means that at a 50% markup, the company has a higher level of safety against declining sales before experiencing losses, making this pricing strategy more advisable.

Cost-Volume-Profit (CVP) Analysis to Determine Optimal Profit

CVP analysis is used to evaluate the effectiveness of a selling price strategy based on COGS data from the ABC method. The following are the results of the analysis:

Table 13. Cost Volume Profit Analysis Results

Information	Markup 40%	Markup 50%
Selling Price/kg	Rp 9.870,42	Rp 10.575,45
Contribution Margin/kg	Rp 3.728,75	Rp 4.433,78
Break Even Point	7.603 kg	6.394/ kg
MOS (%)	75,6%	79,5%

Source: Data processed by researchers (2025)

Based on the Cost-Volume-Profit (CVP) analysis, a pricing strategy with a 50% markup demonstrated optimal performance. This was demonstrated by a higher contribution margin, a lower Break-Even Point, and a greater Margin of Safety compared to a 40% markup. The company's profit was calculated using the following formula:

Profit = (Contribution Margin × Sales Volume) − Fixed Costs
= (Rp. 4.433,78 × 31.200) − Rp 28.349.376
= Rp 138.334.040 − Rp 28.349.376
= Rp 109.984.664 per month

With actual sales volume far exceeding the break-even point of 6,394 kg, the profit demonstrates optimal performance. The profit of Rp 109,984,664 per month is said to be achieved at a safe sales level due to a high Margin of Safety of 79.5%, indicating a low risk of loss due to declining sales volume. This profit is considered efficient because it is achieved at a sales volume well above the break-even point, allowing fixed costs to be quickly covered, and each additional unit sold contributes directly to profit. Furthermore, this condition reflects business sustainability because the selling price is determined based on the actual cost of production using the Activity-Based Costing method, resulting in a realistic and sustainable profit over the long term.

As a follow-up to the optimal profit calculation results using the Activity-Based Costing method and the Cost-Volume-Profit analysis, an income statement is prepared to comprehensively illustrate the financial performance of the Eka Jaya Opak Factory.

Table 14. Eka Jaya Opak Factory
Profit and Loss Statement
Period of May 2025

Profit Income 50%		Rp. 329.954.040	
Opak Sales		-	
Total Income			Rp. 329.954.040
Burden			
Overhead Costs	Rp. 28.349.376		
Raw Material Costs	Rp.140.400.000		
Labor costs	Rp. 51.220.000		
Total load			Rp. 219.969.376
Profit before Income Tax			Rp 109.984.664

Source: Data processed by researchers (2025)

This income statement demonstrates that the simultaneous application of the ABC method and Cost-Volume-Profit (CVP) analysis can improve cost control efficiency and help the company achieve optimal profits. With a pre-tax profit of IDR 109 million in one month, the Eka Jaya Opak Factory has demonstrated healthy and sustainable financial performance, ready to compete in the market with strategic, data-driven pricing.

The application of the ABC method with CVP results in a more effective pricing and profit strategy than traditional methods. With a higher contribution margin and a lower Break-Equivalent (BEP), the company can achieve profits more quickly and securely. This demonstrates that the activity-based approach is more appropriate for the financial planning of MSMEs like the Eka Jaya Opak Factory.

The results of the study indicate that the application of the Activity-Based Costing (ABC) method at the Eka Jaya Opak Factory provides a more accurate picture of the production cost structure than the traditional method currently used. Based on data obtained from observations and interviews, the cost of goods manufactured using the ABC method reached IDR 7,050.3/kg, higher than the IDR 6,681/kg calculated using the conventional method. This happens because the ABC method takes into account resource usage based on actual activities, such as machine hours and number of production batches, which have been ignored.

Discussion

The research results show that the costing system currently used by the Eka Jaya Opak Factory is still conventional and does not reflect actual resource consumption. The business owner only includes the cost components of raw materials and direct labor, while overhead costs such as auxiliary materials, electricity, loading costs, and machine depreciation have not been systematically allocated. This condition aligns with the findings of the study (Erika et al., 2024) which states that the simple costing system is commonly used in MSMEs, but becomes less relevant when production activities become complex and the proportion of overhead costs increases. At the Eka Jaya Opak Factory, the complexity of production activities is evident in the use of machines, the division of production batches, and various supporting activities that consume significant resources, so traditional methods have the potential to cause cost distortions.

The application of the Activity-Based Costing (ABC) method in this study resulted in a production cost of Rp 7,050.3/kg, which is higher than the conventional method of Rp 6,681/kg. This difference indicates that some overhead costs have not been adequately allocated. This finding supports the theory proposed by (Purwoko et al., 2022) ABC can improve the accuracy of cost calculations by tracing costs based on activities that actually consume resources. By using cost drivers such as production kilograms, batch size, and machine hours, overhead costs can be allocated proportionally to activity consumption levels, so that the resulting cost of goods manufactured reflects actual operational conditions.

The results of this study also align with the findings of (Usnan, Yahratun et al., 2024) and (Nadila et al., 2024) which states that the ABC method can reduce cost distortion and produce more accurate cost information than traditional methods. However, this study makes a broader contribution because it goes beyond calculating the cost of goods manufactured and integrates the results into a Cost-Volume-Profit (CVP) analysis to determine optimal profit. Thus, this study expands the scope of previous studies that separated the application of ABC and CVP.

The integration of ABC and CVP in this study resulted in a more measurable selling price strategy. Setting a 50% markup proved to generate an optimal profit of Rp 109,984,664 per month, with a lower Break Even Point (BEP) (6,394 kg) and a higher Margin of Safety (MOS) (79.5%) compared to a 40% markup. These findings support the theory (Quesado & Silva, 2021) which states that CVP analysis is effective for evaluating the relationship between costs, volume, and profits, and helps companies determine minimum sales levels and safe limits for sales decline. With a higher contribution margin, companies can cover fixed costs more quickly and achieve more stable profits.

From a managerial perspective, these results indicate that implementing ABC not only improves the accuracy of cost calculations but also improves the quality of pricing decisions and profit planning. (Nararya et al., 2024) confirms that activity-based costing information supports strategic decision-making because management can identify value-added and inefficient activities.

This is relevant to the situation at the Eka Jaya Opak Factory, where costs such as indirect materials, loading costs, and machinery depreciation were previously not considered in the selling price. However, after activity-based analysis, these components were shown to contribute significantly to total production costs.

Conceptually, this study strengthens the argument that integrating ABC and CVP methods is a more comprehensive approach to profit planning for MSMEs, particularly in the traditional food industry. This addresses a gap in previous research (Collins et al., 2021); (Sa'adah & Azizah, 2023) and (Digjaya et al., 2024) Those who still use traditional cost data in CVP analysis or implement ABC without linking it to profit planning. Thus, this study provides empirical evidence that using activity-based cost data as input for CVP analysis can produce more realistic, secure, and sustainable profit strategies for MSMEs.

CONCLUSION

This study demonstrates that the application of the Activity-Based Costing (ABC) method produces a more accurate calculation of the cost of goods sold (COGS) than the traditional method at the Eka Jaya Opak Factory. The cost of goods sold (COGS) using the ABC method is Rp 7,050.3 per kilogram, higher than the traditional method of Rp 6,681 per kilogram because overhead costs are allocated based on actual resource-consuming activities. The calculation results were then used in a Cost-Volume-Profit (CVP) analysis, which indicated that a 50% markup pricing strategy was the most optimal alternative, characterized by a Break Even Point (BEP) of 6,394 kilograms and a Margin of Safety (MOS) of 79.5%.

Based on these results, it is recommended that the Eka Jaya Opak Factory continuously implement the Activity-Based Costing method as its production costing system and utilize Cost-Volume-Profit analysis in profit planning and managerial decision-making. Future research is expected to expand the scope of study to similar MSMEs and incorporate external variables, such as raw material price fluctuations and market conditions, to achieve more comprehensive results.

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