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Case Study on Determination of Selling Prices Based on Production Prices at A Medical Supplier in Makassar, Indonesia

Abstract

This study aims to examine the accuracy of cost classification in the computation of ¹the cost of goods manufactured and to determine the selling prices of Vipalbumin and Heparmin products at a medical supply company in Makassar. The research investigates whether the company's method for calculating the cost of production is accurate enough to set appropriate selling prices. A descriptive quantitative research method is employed for this analysis.

The findings indicate that there exists a significant discrepancy in the calculation of production costs, which impacts the determination of selling prices. The recalculated cost of goods manufactured performed by the researcher is higher than the company's initial computation. This analysis reveals notable differences in production costs for the Vipalbumin and Heparmin products between the researcher and the company. Additionally, the results show a variance in selling price calculations made by the researcher and the company's figures. The analysis highlights that there is an incorrect classification of costs, particularly regarding packaging expenses—these costs are not accounted for in indirect costs but are mistakenly classified as marketing expenses. The implications of this research suggest that the company should refine its cost classification practices to ensure more accurate pricing strategies and improve overall financial decision-making.

Keywords: Cost of Goods Manufactured, Selling Price, Packaging Costs.

INTRODUCTION

Most companies aim to achieve optimum profitability. ⁶In this context, it is crucial to understand that profit is not merely a figure on financial statements; it reflects a company's health and sustainability. For manufacturing firms, the calculation of production costs and pricing strategies plays a pivotal role in attaining optimum profit. This is closely tied to competitive pricing against similar companies. In the dynamic business environment, where each decision can lead to success or failure, a deep understanding of these elements becomes essential. The calculation of production costs is a foundational step in determining a product's selling price. Production costs encompass all expenses related to producing goods, including raw materials, labor, and manufacturing overhead (Datar & Rajan, 2021). For instance, a shoe manufacturing company must account for the cost of leather, stitching, factory rent, and employee salaries. If the company fails to meticulously calculate all these cost components, it might inadvertently set a selling price that is too low, jeopardizing its long-term profitability.

Furthermore, analyzing pricing strategies is equally important. Research by Aman (2022) indicates that effective pricing strategies can provide significant competitive advantages. For example, a penetration pricing strategy allows a company to set an initial low price to attract new customers, subsequently increasing the price once a substantial market share has been

obtained. While this strategy carries inherent risks, it can yield greater profits in the long run if executed correctly. Ultimately, understanding and implementing accurate production cost calculations and robust pricing strategies are vital for companies striving to secure their place in the market and enhance their profitability sustainably. On the other hand, Chakraborty et al. (2021) demonstrate that ⁵ in the context of remanufacturing, pricing decisions are significantly influenced by environmental factors and sustainability considerations. Companies that can integrate eco-friendly practices into their production processes not only reduce costs but also attract environmentally conscious customers. This indicates that the calculation of production costs should not solely focus on numerical values but also on the value proposition offered to consumers.

One of the challenges faced by manufacturing companies is overcoming barriers to adopting new technologies, as discussed by Choudhary et al. (2021). In the healthcare sector, for instance, the implementation of additive manufacturing technology can enhance efficiency and reduce production costs. Effective management of supply chain controls and operational performance also plays a critical role in determining production costs. Nartey et al. (2022) highlight that during public health emergencies, such as a pandemic, ⁴ effective management can help companies maintain strong operational performance. By optimizing the supply chain, companies can reduce costs and improve efficiency, ultimately contributing to more competitive pricing.

These insights reflect the evolving nature of cost management and pricing strategies within manufacturing, emphasizing the need for companies to consider a holistic approach that embraces environmental sustainability and technological advancement. By doing so, they can not only achieve better financial outcomes but also align themselves with modern consumer values, ensuring long-term success in a rapidly changing market. Mpelangwa et al. (2022) ⁸ emphasize the importance of understanding the product value chain. In the context of herbal plants in Tanzania, for instance, the role of formulators in creating value-added products is crucial. This highlights that companies must not only focus on production costs but also consider how they can enhance product value through innovation and differentiation. By doing so, companies can command higher prices without sacrificing competitiveness in the market.

This perspective reinforces the idea that effective price determination is rooted in a comprehensive understanding of both production efficiency and product enhancement strategies. When businesses invest in innovation to elevate the perceived value of their offerings, they can leverage this increased value to justify higher pricing strategies. This not only supports sustainable profitability but also positions the company as a leader in quality and differentiation within its industry. Therefore, integrating value enhancement practices alongside meticulous cost management will empower companies to create a robust pricing strategy that resonates with customers, ultimately driving growth while maintaining a competitive edge. This approach serves as a reminder that in today's dynamic marketplace, merely minimizing costs is no longer sufficient; companies must also innovate to thrive.

Production activities require the sacrifice of economic resources in the form of various costs to generate products for the market. These costs serve as ² the foundation for determining the

Cost of Goods Manufactured (COGM). The elements that comprise COGM can be categorized into three major groups: Direct Materials, Direct Labor, and Manufacturing Overhead. (Warren, Jones & Tayler, 2020) All three types of costs must be accurately recorded and classified according to their nature and characteristics. This meticulous classification is essential for the company to understand the actual expenses incurred in producing a product, which is referred to as its cost of production.

In manufacturing companies, the cost of goods manufactured constitutes a substantial portion of overall expenditures. Therefore, it is crucial for companies to be precise and detailed in preparing financial reports, especially those related to production costs, to prevent discrepancies and avoid waste during production processes. Accurate information on the cost of goods manufactured can serve as a starting point for determining appropriate selling prices for consumers, ensuring profitability for the company while safeguarding its sustainability. The interplay between meticulous cost management and strategic pricing is vital to maintaining a competitive edge in the marketplace and achieving long-term success.

In the bustling landscape of the medical supply industry, one particular company stood out, having established itself as a reputable supplier since its inception in 2008. This company prided itself on innovation, combining cutting-edge technology with a skilled research and development team to deliver high-quality pharmaceutical products. Among their offerings were Vipalbumin and Heparmin, products crafted through meticulous processes beginning with raw materials and culminating in finished goods. Despite its strengths, the company faced challenges with its costing system. It had implemented a computerized method for calculating production costs, but this system was not without its flaws. Specifically, the use of process costing did not fully account for all manufacturing overheads, particularly the costs associated with packaging. These essential expenses had been categorized as marketing costs, leading to significant discrepancies in their production cost calculations.

This oversight had far-reaching implications for the company: by excluding packaging costs from the overhead calculation, they unintentionally lowered their reported costs of goods manufactured. Consequently, this miscalculation influenced their pricing strategy, resulting in selling prices that were too low, ultimately impacting their profitability. Recognizing the critical nature of this issue, the need arose for a thorough examination of their costing practices. This investigation aimed not only to rectify the cost classification error but also to help the company establish a pricing strategy that accurately reflected the true costs of production. Through diligent analysis, the company could enhance its financial performance and secure its position in the competitive market landscape.

RESEARCH METHODS

The type of data used in this research is quantitative, specifically focusing on information related to the company's financial aspects. The quantitative data obtained includes details about the costs incurred in producing finished goods ready for sale. The sources of data comprise primary data, which is directly collected from the research location through field studies, and secondary data, which consists of existing information within the company.

Primary data is gathered through interviews, which involve face-to-face question-and-answer sessions with relevant stakeholders in the company. Two key informants from the organization provide insights crucial to the research. Additionally, secondary data encompasses the costs of raw materials, labor, and manufacturing overhead that are already available in the company's records.

The data collection methods employed include interviews to obtain direct responses from company personnel associated with the research issues and documentation that involves collecting relevant documents or company archives related to production cost budgeting. The research methodology adopted for this thesis is descriptive quantitative analysis. This analysis aims to recommend the appropriate calculation of the cost of goods manufactured, expressed in numerical values. Through this approach, the study identifies and categorizes production cost components, calculates production costs per unit, determines selling prices per unit, and compares the production cost estimates between the researcher and the company, as well as the selling price calculations from both perspectives.

RESULT AND DISCUSSION

The company operates with a single production department, which means that the costs of raw materials, labor, and manufacturing overhead are accumulated only once. This streamlined approach allows for a more straightforward analysis of production costs, focusing on the overall expenses incurred in the manufacturing process.

Below is Table 1, which presents a comparative analysis of the cost calculations for the products Vipalbumin and Heparmin. This table summarizes the individual components of production costs, allowing for an assessment of the total cost of goods manufactured for both products, facilitating better decision-making regarding pricing and profitability.

Table 1. Calculation of Production Costs for Vipalbumin and Heparmin

Cost of Goods Production of Vipalbumin			
Company		Researcher	
Raw Material Costs	Rp 19,924,770,653	Raw Material Costs	Rp 19,924,770,653
Direct Labor Costs	Rp 557,737,992	Direct Labor Costs	Rp 557,737,992
Overhead Costs		Overhead Costs	
- Indirect labor	Rp 41,941,060	- Indirect labor	Rp 41,941,060
- Electricity, water & gas	Rp 126,200,008	- Electricity, water & gas	Rp 126,200,008
- Consumables	Rp 39,806,865	- Consumables	Rp 39,806,865
- Factory depreciation	Rp 88,646,243	- Factory depreciation	Rp 88,646,243
- Machine depreciation	Rp 129,524,296	- Machine depreciation	Rp 129,524,296
- Packaging		- Packaging	Rp 861,441,707
Total Production Costs	Rp 20,908,627,110	Total Production Costs	Rp 21,770,068,820
Cost of Goods Production of Heparmin			
Company		Researcher	
Raw Material Costs	Rp 406.627.973	Raw Material Costs	Rp 406.627.973
Direct Labor Costs	Rp 11.382.408	Direct Labor Costs	Rp 11.382.408
Overhead Costs		Overhead Costs	
- Indirect labor	Rp 855,940	- Indirect labor	Rp 855,940
- Electricity, water & gas	Rp 2,575,510	- Electricity, water & gas	Rp 2,575,510
- Consumables	Rp 812,385	- Consumables	Rp 812,385
- Factory depreciation	Rp 1,809,107	- Factory depreciation	Rp 1,809,107
- Machine depreciation	Rp 2,643,353	- Machine depreciation	Rp 2,643,353
- Packaging		- Packaging	Rp 17,580,443
Total Production Costs	Rp 426,706,676	Total Production Costs	Rp 444.287.119

In the world of pharmaceutical production, understanding cost management is crucial for maintaining profitability and competitive pricing. At one such medical supply company, the process of calculating the production cost per unit and determining the selling price for their products, Vipalbumin and Heparmin, stands as a testament to the importance of meticulous financial practices. For each bottle containing 30 capsules, the company initially established the production costs at Rp 100,000 for Vipalbumin and Rp 90,000 for Heparmin based on their conventional accounting methods. However, a closer examination and reclassification of manufacturing overhead revealed more precise production costs, raising the figures to Rp 103,200 and Rp 92,700, respectively.

To ensure sustainability and profitability, the company employs a strategic pricing mechanism, implementing a markup of 25% on their production costs. This means that Vipalbumin, under the original pricing method, would be sold for Rp 125,000 per unit, while after the overhead reclassification, the selling price adjusts to Rp 129,000. Similarly, Heparmin's pricing showcases the same adjustment strategy, with initial selling prices of Rp 112,500 shifting to Rp 115,875 following the revised calculations.

These thoughtful calculations not only help the company navigate the complexities of pricing strategy but also highlight the significant impact that accurate cost classification has on overall profitability.

Tabel 2 Comparison of production costs and selling prices per unit

Comparison of production costs per unit				
No	Types of products	Company production costs/Unit	Researchers' production costs/Unit	Difference
1	Vipalbumin	Rp 80.000	Rp 82.500	Rp 2.500
2	Heparmin	Rp 72.000	Rp 74.100	Rp 2.100
Comparison of selling prices per unit				
No	Types of products	Company selling prices/Unit	Researchers' selling prices/Unit	Difference
1	Vipalbumin	Rp 100.000	Rp 103.200	Rp 3.200
2	Heparmin	Rp 90.000	Rp 92.700	Rp 2.700

The accuracy of calculating the cost of production is crucial for any company, as it directly influences the establishment of a competitive selling price. To achieve an accurate assessment of production costs, it is essential to thoroughly identify the cost components that contribute to the final price. The cost of production comprises three primary elements: direct materials costs, direct labor costs, and manufacturing overhead costs.

Direct materials costs refer to the expenses incurred by the company to acquire the raw materials that become integral parts of the finished product. Direct labor costs represent the wages paid to workers who are directly involved in transforming raw materials into finished goods. The final component, manufacturing overhead, encompasses all production expenses that are not classified as direct materials or direct labor. One significant challenge encountered by companies in calculating the cost of production lies in the allocation of manufacturing overhead. Errors in this allocation can lead to inaccurate calculations of the cost of production. Consequently, these inaccuracies can result in incorrect pricing decisions and misinform management during decision-making processes.

The findings from the research indicate a notable discrepancy in the per-unit production costs and selling prices between the company's calculations and the revised assessments made by the researcher. This highlights the importance of meticulous cost allocation practices to ensure precise pricing strategies and informed managerial decisions, ultimately safeguarding the company's profitability and competitive positioning in the market.

The analysis reveals that the company's calculation of production costs per unit is notably lower than the reassessment conducted by the researcher. For the product Vipalbumin, the company reports a production cost of Rp 80,000 per unit, whereas the researcher calculates it at Rp 82,500 per unit, resulting in a discrepancy of Rp 2,500 per unit. Similarly, for the product Heparmin, the company's calculated production cost is Rp 72,000 per unit, compared to Rp 74,100 per unit according to the researcher, creating a difference of Rp 2,100 per unit.

These differences in production cost calculations are critical, as they directly inform the determination of selling prices. The company's selling price for Vipalbumin is set at Rp 100,000 per unit, while the researcher's adjusted calculation sets the price at Rp 103,200 per unit,

leading to a variance of Rp 3,200. For Heparmin, the company's selling price stands at Rp 90,000, whereas the researcher suggests a price of Rp 92,700, resulting in a difference of Rp 2,700. These discrepancies arise from the company's failure to include certain costs that should be considered in the production cost calculations. Specifically, the packaging cost has been excluded; the company categorizes this expense as a marketing cost rather than accounting for it as part of manufacturing overhead. This misclassification underscores the importance of accurately identifying all relevant costs in production calculations to ensure appropriate pricing strategies, ultimately affecting profitability and operational efficiency. By addressing these cost allocation issues, the company can create a more reliable financial framework that supports informed decision-making.

7 The findings of this research underscore the critical importance of meticulous calculations in determining the cost of production. As noted in existing literature, companies must exercise caution in their pricing strategies. Misclassifications and inaccuracies in cost collection can misrepresent the actual production costs, leading to significantly lower reported figures. This ultimately results in misleading information that is inadequate for making informed decisions.

For example, El Mokrini and Aouam (2022) emphasize the need for accurate cost allocation, stating that proper overhead management is essential for generating precise production cost figures. Similarly, Mattos et al. (2021) highlight the significance of pricing research, asserting that inaccuracies can create barriers to successful pricing models, adversely affecting decision-making within organizations. Furthermore, Piotrowicz et al. (2023) argue that the successful implementation of lean principles in managing overhead costs is critical for achieving efficiency and effectiveness in production processes, reinforcing the importance of precise calculations. Additionally, Zairbani and Jaya Prakash (2023) point out that competitive strategies rely heavily on accurate cost assessments and pricing decisions, further illustrating how improper cost classifications can impede a company's performance.

Therefore, the study emphasizes that manufacturing overhead must be allocated accurately to yield precise production cost calculations. This accuracy not only serves as a foundation for setting appropriate selling prices but also aids management in making decisions that can significantly impact the company's long-term success. By enhancing cost allocation practices, the company can ensure that its financial outcomes reflect true operational performance, positioning itself more favorably in the competitive market landscape.

CONCLUSION

In conclusion, this research highlights a critical gap in the company's determination of the cost of production, specifically the exclusion of packaging costs, which is an integral component of manufacturing overhead. The company's rationale for categorizing these costs as marketing expenses reflects a misunderstanding of cost classifications, resulting in an understated production cost. Consequently, this miscalculation fails to provide a realistic estimate of the cost of production and adversely affects pricing decisions, leading to selling prices that are potentially too low.

While the company aims to achieve a 25% markup on production costs to enhance profitability, the inaccuracies in cost allocation compromise this goal. The reliance on management's subjective judgment rather than a data-driven approach to classify and gather production costs further diminishes the reliability of the cost information presented.

The study does have its limitations, particularly in its scope. For example, the research focuses solely on two products and does not consider other variables that may influence overall production costs, such as variations in labor efficiency or changes in raw material prices. Additionally, a more extensive analysis encompassing multiple periods or a broader product range could yield more comprehensive insights.

Future research should emphasize the necessity for companies to incorporate all relevant cost components, particularly those categorized as overhead. It is essential for organizations to adopt a thorough cost classification and collection methodology, ensuring all expenses, including packaging, are reflected accurately in production costs. This adjustment will not only enhance the precision of the cost of production calculations but also bolster management's decision-making processes and contribute to the company's enduring success in a competitive marketplace.

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