



**ANALYSIS OF DETERMINING PRODUCTION COST USING THE
ACTIVITY-BASED COSTING (ABC) METHOD AT PUTRA MANDIRI
MEBEL**

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Abstract

This study aims to analyze the determination of production cost using the *Activity-Based Costing* (ABC) method at Putra Mandiri Mebel. The *Activity-Based Costing* method was chosen because it is capable of calculating costs more accurately in manufacturing companies by allocating costs based on the activities consumed in the production process—from the beginning through to the finished goods stage—in a more specific manner compared to conventional methods. With this method, the cost of goods manufactured can be calculated more precisely based on the activities consumed by the product. This study employs a qualitative descriptive approach using data collection techniques such as document analysis and interviews. The results of this study indicate a difference in calculations between the conventional method and the *Activity-Based Costing* (ABC) method. For sofa products, *overcosting* occurred, where the conventional method estimated the COGS for the sofa at Rp 32,285,105, and the COGS for teak chairs at Rp 40,583,731. Meanwhile, the estimated COGS for products using the ABC strategy at Putra Mandiri Mebel resulted in Rp 26,865,102 for sofas and Rp 35,807,447 for teak chairs. This study recommends that the company adopt *Activity-Based Costing* (ABC) to review its cost calculation methods when determining COGS.

Keywords: Cost of Goods Sold, Activity-Based Costing (ABC) Method



INTRODUCTION

Every company has its own perspective and management approach in conducting its business (Alfarisi & Boediono, 2021). Companies often neglect the calculation of production costs, leading to inaccuracies in the calculation of cost of goods sold (Safitri, 2021). A key factor determining a business entity's revenue is the volume of products sold. When products are sold in large quantities, the business entity typically generates high revenue. Sales volume is significantly influenced by the product's selling price (Gina et al., 2024). Optimizing and efficiently utilizing potential can help keep the company's expenses relatively low (Andini et al., 2021). To achieve the company's goal of increasing profits, the company must pay closer attention to cost expenditures during production and the determination of sales prices (Prasetyo et al., 2020). The determination of product sales prices is a crucial aspect in establishing the base cost for production (Faizin et al., 2024).

Establishing the primary costs of production is the most crucial factor for a business entity to achieve its targets or expected profits (Ismayeni et al., 2020). An inaccurate calculation of production costs can impact business sustainability, leading the business entity to either increase product selling prices or reduce the quantity of products sold (Safitri, 2021). Therefore, companies must take the estimation of their COGS very seriously (Polii et al., 2021). The cost of goods sold is used by businesses as a parameter to analyze the amount of funds spent on the production process (Ayuningtyas et al., 2022).

In the ABC (*Activity-Based Costing*) system, there are several cost drivers used to allocate factory overhead costs to different products. With these cost drivers, business management can allocate activity costs separately to each production run. This makes the allocation of factory overhead costs fairer and provides more accurate information regarding production costs (Baviga & Amriana, 2023). *Activity-Based Costing* (ABC) is a strategy for determining the base costs of production, serving as an improvement over traditional methods such as full costing and variable costing, as these older approaches often result in inaccurate cost allocations relative to the actual activities performed during production (Polii et al., 2021).

Putra Mandiri Mebel is a company operating in the manufacturing sector, specializing in the production of household furniture, including sofas, wardrobes, buffets, and teak chairs, all customized to meet customer needs using teak wood as the primary raw material. This business entity has been in operation since 2005; however, in determining its base costs, the entity still uses a simple cost estimation system. This simple calculation system consists of calculating



expenses for primary raw materials plus expenses for worker wages without accounting for the company's indirect expenses. According to Sari et al. (2024) , such calculations tend to produce inaccurate cost information because they do not account for the diversity of activities occurring at each stage of production.

The ongoing application of inappropriate rates can significantly affect the determination of base costs in production (Polii et al., 2021) . ABC can accurately estimate expenses for each activity to obtain precise results for every product manufactured (Bondon & Purwoko, 2023) . By utilizing the ABC method, businesses can minimize cost losses caused by conventional valuation, ensuring that product costs are accurate and consistent (Putri et al., 2024) . Additionally, ABC helps identify inefficient activities and enables the implementation of optimal corrective measures. By implementing ABC, companies can allocate their resources more wisely, improve operational efficiency, and ultimately increase profitability (Mutia et al., 2024) .

LITERATURE REVIEW

Cost

Waty et al. (2023) explain that cost is the expenditure of resources—such as time, labor, money, or other assets—sacrificed to achieve a specific objective (goods or services). Hansen and Mowen (2017) state that cost is the amount of money or equivalent value spent on items and services that are expected to provide benefits, either now or in the future, to the community. Meanwhile, Mulyadi (2018) explains that cost is an economic asset estimated in financial terms—whether already incurred or likely to be incurred—that is allocated to a specific objective. Cost is the sacrifice of economic resources, measured in monetary units, that has occurred or is likely to occur for a specific purpose. Specifically within an organization or company, costs are commonly used in setting production rates, internal control, and also serve as information for external stakeholders.

Cost of Goods Manufactured

Hansen and Mowen (2017) define cost of goods manufactured as the expenses incurred from producing something, including direct materials, direct labor, and overhead. Another definition is provided by Mulyadi (2018) , who states that COGM consists of the costs incurred in processing raw materials into a finished product. Meanwhile, according to Andini et al. (2021) , COGS refers to the detailed expenses that a business entity must bear within a specific period.



This includes costs for acquiring raw materials, production equipment, and production support materials, among others.

COGS calculation is performed to identify the total expenses required to produce a product. Typically, these expenses include costs for raw materials, direct labor, and factory overhead. Mulyadi (2018) explains that the method of calculating COGS is influenced by the production method, specifically job-order costing and process costing.

Activity-Based Costing

Faizin et al. (2024) explain that ABC is an accounting method that focuses on the activities carried out to produce goods or services. Hansen and Mowen (2017), explain that ABC is a cost allocation method that first identifies costs by activity, then by material. The underlying assumption is that activities consume assets, while materials generally consume activities. *Activity-Based Costing* recognizes activities, activity costs, and the causes of activities at varying *levels of aggregation* within a production area. The levels of *Activity-Based Costing* are as follows:

1. **Unit level:** This refers to costs that clearly increase when one unit is produced. These are costs that can be accurately allocated based on the unit level. An example is electricity costs.
2. **Batch level:** This refers to expenses associated with the total batch produced and sold. Examples include costs for preparation and certain raw material processing activities.
3. **Product-level costs:** These are expenses incurred to support the production of various dissimilar products. These costs are not affected by the production or marketing of an additional unit or batch. Examples of such costs include product design costs, product development costs, prototype development costs, and engineering costs associated with the production process.
4. **Plant-level costs:** *Plant-level costs* are the costs of maintaining production capacity at the facility. Examples include rent, depreciation, property taxes, and factory building insurance.

RESEARCH METHOD

The research method used is a quantitative descriptive study. Data collection was conducted using documentation and interviews.

In this study, qualitative descriptive data analysis techniques were used; specifically, identifying companies and analyzing company profiles through interviews, then analyzing the findings in this case, restating the findings consistent with the scope of the research, followed by applying data analysis



techniques using *activity-based costing* through two stages: tracing costs to activities and tracing activity costs to each product that incurs those costs.

RESULTS AND DISCUSSION

Descriptive Statistical Test

Toko Putra Mandiri Meubel is a manufacturing business that provides a wide variety of home furniture with a strong commitment to quality and customer satisfaction. Established in 2005, the company has grown to become a trusted and popular furniture provider. It offers a wide range of furniture products, including sofas, beds, plastic and wooden cabinets, mattresses, and teak chairs, all produced using high-quality materials and crafted by professional workers.

The company utilizes social media as its primary channel for product marketing with the aim of expanding its market reach. Regarding the determination of sales prices for the items produced by , Putra Mandiri Mebel still employs a conventional strategy. The company calculates prices by summing the costs of raw materials and direct labor, factoring in a portion of the factory's overhead expenses—not the full amount—at each production stage, and then adding the desired profit margin.

Table 1.
Production Data for the 2025 Period

Product	Units Produced / Year	Selling Price / Unit	Total Cost
Sofa	475	Rp 4.000.000	Rp 1.900.000.000
Teak Chair	518	Rp 4.500.000	Rp 2.331.000.000
Quantity	993	Rp 8.500.000	Rp 4.231.000.000

Table 2.
Raw Material Cost Usage in 2025

Product	Total Products Produced	Raw Material Costs
Sofa	475 Sets	Rp 552.603.125
Teak Chair	518 Sets	Rp 951.566.000
Total Raw Materials	993 Sets	Rp 1.504.169.125



Table 3.
Breakdown of Raw Material Costs in 2025

	Raw Materials	Quantity	Unit Price	
Sofa	Wood	2494 Board	Rp 71.500	Rp 178.303.125
	4cm foam: 2m x 2m	950 Sheets	Rp 120.000	Rp 114.000.000
	2cm foam: 2m x 2m	475 Sheets	Rp 72.000	Rp 34.200.000
	1 cm foam: 2 m x 2 m	475 Sheets	Rp 36.000	Rp 17.100.000
	Upholstery Fabric	9,500 Meters	Rp 22.000	Rp 209.000.000
	Total Sofa Raw Materials			Rp 552.603.125
Kursi jati	Teak wood	518 Set	Rp 1.333.000	Rp 690.494.000
	4cm foam: 2m x 2m	1,036 Sheets	Rp 120.000	Rp 124.320.000
	Upholstery Fabric	6,216 Meters	Rp 22.000	Rp 136.752.000
	Total Raw Materials for Teak Chairs			Rp 951.566.000

Table 4.
Direct Labor Cost Usage in 2025

Position	Number of Employees	Monthly Salary	Annual Salary	Number
Assembly	8	Rp 1.750.000	Rp 21.000.000	Rp 168.000.000
Engraving	3	Rp 1.500.000	Rp 18.000.000	Rp 54.000.000
Finishing	4	Rp 1.500.000	Rp 18.000.000	Rp 72.000.000
Total BTKL	15	Rp 4.750.000	Rp 57.000.000	Rp 294.000.000

Table 5.
Factory Overhead Labor Cost Usage in 2025

Type of BOP	Total
Auxiliary Material Costs	Rp 547.783.750
Electricity Costs	Rp 18.000.000
Transportation Costs	Rp 92.204.000



Sewing costs	Rp 3.735.000
Machine Maintenance Costs	Rp 1.800.000
Machine Maintenance Cost	Rp 24.000.000
Total	Rp 687.522.750

Table 6.
Consumption of Auxiliary Materials in 2025

Product	Quantity	Unit Price	Total Cost
Wood paint	1,036 kg	Rp 97.000	Rp 100.492.000
Thinner	2,590 liters	Rp 30.000	Rp 77.700.000
Sandpaper	5,180 Meters	Rp 10.000	Rp 51.800.000
Button thread	993 Rolls	Rp 11.000	Rp 10.923.000
Buttons	34,755 Pieces	Rp 250	Rp 8.688.750
Clear Glass	475 Sheets	Rp 100.000	Rp 47.500.000
Wood glue	1,986 kg	Rp 40.000	Rp 79.440.000
Springs	14,250 Pieces	Rp 1.500	Rp 21.375.000
Staples	993 Boxes	Rp 35.000	Rp 34.755.000
Rubber	1986 Bundles	Rp 35.000	Rp 69.510.000
Sofa legs	5,700 pieces	Rp 8.000	Rp 45.600.000
Total			Rp 547.783.750

Calculation of Cost of Goods Sold Using the Conventional Method

a. Calculation of Cost of Goods Sold for a Sofa

COGS : BBB + BTKL + BOP

: Rp 552,602,125 + Rp 120,000,000 + Rp 547,783,750

: Rp 1,220,386,875

COGS/Furniture : Total Cost of Goods Sold / Total Production Capacity

: IDR 1,220,386,875 / 475 Sets

: Rp 3,569,236

b. Calculation of Cost of Goods Sold for Teak Chairs

COGS : Direct Materials + Indirect Materials + Overhead

: Rp 915,566,000 + Rp 174,000,000 + Rp 547,783,750

: Rp 1,673,349,750

COGS/Furniture : Total Cost of Goods Sold / Total Production Capacity

: Rp 1,673,349,750 / 518 Sets

: Rp 3,230,405



Calculating the Cost of Goods Manufactured Using the *Activity-Based Costing* (ABC) Method

- a. Classification of activities and categorization of activity costs

Table 7.

Factory Overhead Costs Based on Cost Classification by Activity at Putra Mandiri Furniture in 2025

Activity Level	COGS Components	Amount
Activity Level Unit	Auxiliary Material Costs	Rp 547.783.750
	Electricity Costs	Rp 18.000.000
	Sewing Costs	Rp 3.735.000
	Machine Depreciation Cost	Rp 1.800.000
Batch-Level Activities	Transportation Costs	Rp 92.204.000
	Machine Maintenance Costs	Rp 24.000.000
Total		Rp 687.522.750

- b. Determining the appropriate *cost drivers* for each activity

Once the activities have been classified by level, the next step is to identify *the cost drivers* for each of the identified costs. The scope of *cost drivers* for each product is as follows:

Table 8.

List of Cost Drivers for Putra Mandiri Furniture

Description	Sofa	Teak Chair	Quantity
Number of Units	475	518	993 Units
Total kWh	1164,5	2244,76	3,409 kWh
Number of Deliveries	2493,75	540	3,034 Deliveries
Number of Inspections	2.225	4.952	7,177 Hours

- c. Determination of *Pool Rates*

A *pool rate* is the allocation of a division's manufacturing overhead costs to a group of activities. To calculate this rate, the total manufacturing *overhead* costs for a specific activity classification are divided by the estimated base for that group of activities.

Table 9.

Calculation of the Pool Rate at the Unit Level for Putra Mandiri Furniture in 2025

Cost Pool	BOP Elements	Amount
Cost Pool 1	Auxiliary Material Costs	Rp 547.783.750



	Machinery Depreciation Cost	Rp 1.800.000
	Sewing Costs	Rp 3.735.000
Total Expenses		Rp 553.318.750
Number of Units Produced		993 Units
Pool Rate 1		Rp 557.219
Cost Pool 2	Electricity Cost	Rp 18.000.000
Total Cost		Rp 18.000.000
Total KWH		3409 KWH
Pool Rate 2		Rp 5.280

Table 10.

Calculation of the Pool Rate for the Putra Mandiri Furniture Batch Unit for 2025

Cost Pool	BOP Elements	Total
Cost Pool 3	Transportation Costs	Rp 92.204.000
Total Cost		Rp 92.204.000
Number of Delivery Units		3,034 Deliveries
Pool Rate 3		Rp 30.393
Pool Cost 4	Machine Maintenance Cost	Rp 24.000.000
Total Cost		Rp 24.000.000
Inspection Hours		7,177 Hours
Pool Rate 4		Rp 3.344

d. Calculating the *Pool Rate*

The next step in determining the Cost of Goods Sold based on activities is to allocate group costs based on *Cost Drivers*. Funding for each group of factory *overhead* expenses is reviewed based on various types of goods.

Table 11.

Allocation of Factory Overhead Costs Using Activity-Based Costing (ABC) at Putra Mandiri Furniture in 2025

Total Activities	Cost Driver	Allocation Process	Sofa	Teak Chairs	Quantity
Unit	Product Units	Rp 557.219 x 475	Rp 264.679.160		
		Rp 557.219 x 518		Rp 288.639.590	Rp 553.318.750
	KWH	Rp 5.280 x 1.165	Rp 6.148.255		
		Rp 5.280 x 2.245		Rp 11.851.745	Rp 18.000.000



		Total Unit-Level Activities			Rp 571.318.750
Batch	Delivery	Rp 30.393 x 2.494	Rp 75.791.916		
		Rp 30.393 x 540		Rp 16.412.084	Rp 92.204.000
	Inspection Hours	Rp 3.344 x 2.225	Rp 7.440.435		
		Rp 3.344 x 4.952		Rp 16.559.565	Rp 24.000.000
		Total Batch Level Activity			Rp 116.204.000
		Total BOP	Rp 354.059.766	Rp 333.462.984	Rp 687.522.750

Table 12.

Cost of Goods Sold Using the *Activity-Based Costing* (ABC) Method at Putra Mandiri Mebel in 2025

Description	Sofa	Teak chairs
Raw Material Costs	Rp 552.603.125	Rp 951.566.000
Direct Labor Costs	Rp 120.000.000	Rp 174.000.000
Factory Overhead Costs	Rp 354.059.766	Rp 333.462.984
COGS	Rp 1.026.662.891	Rp 1.459.028.984
Total Cost of Goods Sold		Rp 2.485.691.875
Product Units	475 units	518 units
Cost of Goods Sold per Unit (Rounded)	Rp 2.161.396	Rp 2.816.658

Comparison of the Conventional Method with *Activity-Based Costing* (ABC) in Determining the Cost of Goods Manufactured

Table 13.

Comparison of Conventional and *Activity-Based Costing* (ABC) COGS per Unit at Putra Mandiri Mebel in 2025

Product Type	Conventional System	ABC System	Difference	Value
Sofa	Rp 2.569.236	Rp 2.161.396	Rp 407.840	Overcosting
Teak chair	Rp 3.230.405	Rp 2.816.658	Rp 413.747	Overcosting

Using the conventional strategy, the estimated COGS for the sofa product was Rp 2,569,236, and the estimated COGS for the teak chair was Rp 3,230,405. Meanwhile, the estimated COGS for products using the ABC strategy at Putra Mandiri Mebel resulted in Rp 2,161,396 for sofas and Rp 2,816,658 for teak chairs.

From the comparison of the estimation results above, it can be observed that the comparison shows that all products are subject to *overcosting*; that is, the



cost of goods sold estimated using the conventional strategy is higher than the results of the estimation using the ABC strategy. Therefore, it can be concluded that the implementation of the ABC method is more optimal in terms of generating accurate cost information compared to the conventional system, especially in a production environment with diverse activities and product complexity.

CONCLUSION

Based on the research findings and the analysis conducted by researchers at Putra Mandiri Mebel regarding the determination of cost of goods sold (COGS), the author concludes that the *Activity-Based Costing* (ABC) strategy is considered the most appropriate method for determining COGS. This strategy can yield significantly higher profit estimates compared to the conventional method, as demonstrated. This is because the ABC method estimates each expense with allocations that vary across different activities.

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