



**ANALYSIS OF PRODUCTION COST DETERMINATION USING FULL
COSTING AND VARIABLE COSTING METHODS AS A BASIS FOR
SELLING PRICE DETERMINATION (CASE STUDY OF SANTI
KARAWANG CAKE SME)**

Rodiah Salsabillah Pakaya¹

Universitas Negeri Gorontalo, Gorontalo, Indonesia

pakayarodiah@gmail.com

Usman²

Universitas Negeri Gorontalo, Gorontalo, Indonesia

usmandaming@ung.ac.id

Ayu Rakhma Wuryandini³

Universitas Negeri Gorontalo, Gorontalo, Indonesia

ayurakhma@ung.ac.id

Abstract

This study aims to compare the full costing and variable costing methods in determining the cost of goods manufactured for selling prices (a case study of the Santi Karawang Cake SME). This study employed a quantitative descriptive method, utilizing primary and secondary data as sources of information. Secondary data included information on Krawang Cake production, raw material inventory, and Krawang Cake production at the Santi Karawang Cake SME. The data analysis techniques used in this study were the full costing and variable costing methods. These methods are considered relevant in calculating total costs incurred during the production process, which include direct material costs, direct labor costs, and factory overhead costs. The results showed that calculating the cost of goods manufactured using the full costing method yielded higher results than using variable costing. Furthermore, the calculation using the variable costing method resulted in a lower COGS because it only included variable costs, namely raw material costs, direct labor costs, and variable factory overhead costs.

Keywords: Cost of Goods Sold, Full Costing Method, Variable Costing, Determination of Selling Price



INTRODUCTION

Increasingly fierce industrial competition in Indonesia requires businesses, including micro, small, and medium enterprises (MSMEs), to improve efficiency and accuracy in managerial decision-making, particularly regarding product pricing. One of the main problems frequently faced by MSMEs is inaccurate selling price determination due to inaccurate cost of goods manufactured (COGS) calculations (Susana, 2019). This situation is exacerbated by limited managerial skills, rudimentary cost recording, and a lack of understanding of appropriate cost accounting methods (Suci et al., 2017).

In the context of the era of globalization and free markets, including the implementation of the ASEAN Economic Community (AEC), MSMEs are required to compete not only in terms of product quality but also in terms of cost efficiency and pricing strategies (Wuryandini & Pakaya, 2021). Setting the right selling price is a key factor in maintaining business sustainability, increasing profitability, and strengthening competitiveness, particularly in the food industry, which is highly sensitive to changes in prices and production costs (Anggreani & Adnyana, 2020).

Product selling prices are essentially determined through various considerations, such as production costs, operational costs, profit targets, consumer purchasing power, and competitor prices. However, production costs are often used as the primary basis for setting selling prices (Fatmala, 2019; Faradela et al., 2022). Therefore, selecting the appropriate COGS calculation method is crucial. The full costing method calculates all production costs, both fixed and variable, while the variable costing method only includes variable costs in the COGS, resulting in different cost and profitability information (Febrianti & Rahmadani, 2022; Aziziyah & Mardiana, 2021).

This research focuses on the Kue Krawang Santi cookie industry, an MSME that has been operating since 2000 and offers a diverse range of products. Despite its relatively stable market, this business still uses a simple method of recording production costs and tends to rely on the owner's experience in determining COGS. This practice has the potential to lead to inaccuracies in cost calculations, which can ultimately impact selling prices, profitability, and strategic decision-making. As the following table:



Full Costing HPP Recapitulation Table

Full Costing HPP Recap per Unit (1 kg / 2 Jars)

Types of Cakes	BBB (Rp)	BTKL (Rp)	Variable BOP (2 jars) (Rp)	Fixed BOP (2 jars) (Rp)	Non-production costs (Rp)	Full Costing Cost of Goods Sold (Rp)
Tulip Chocolate Krawang	444,970	87,500	6,623	6,835	2,000	547,928
Krawang Nescafe	432,500	87,500	6,623	6,835	2,000	535,458
Vanilla Cream Krawang	452,000	95,000	6,623	6,835	2,000	562,458
Mocha Krawang	440,000	87,500	6,623	6,835	2,000	542,958
Krawang Strawberry	448,000	87,500	6,623	6,835	2,000	550,958
Combination Openwork	445,000	87,500	6,623	6,835	2,000	547,958
Tosca	452,000	87,500	6,623	6,835	2,000	554,958
Snow Princess	460,000	87,500	6,623	6,835	2,000	562,958
Cashew nuts	455,000	87,500	6,623	6,835	2,000	557,958

Source: Processed Data (2025)

Several previous studies have shown that the choice of cost of goods manufactured (COGS) calculation method significantly influences selling price determination and business profit calculation. Angelica and Hadi (2024) found that the full costing method produces a higher COGS than variable costing because it includes all production costs. As the following table:

Recapitulation of Cost of Goods Sold Variable Costing

The following is a recap of the variable costing method HPP for all main cake types (per 1 kilogram / 2 jars):

A recap of the variable costing method of HPP

No	Types of Cakes	Raw Material Cost (Rp)	Direct Labor Cost (Rp)	Variable BOP (Rp)	COGS Variable Costing (Rp)
1	Tulip Chocolate Krawang	444,970	87,500	6,623	539,093
2	Krawang Nescafe	432,500	87,500	6,623	526,623
3	Vanilla Cream Krawang	452,000	95,000	6,623	553,623



4	Mocha Krawang	440,000	87,500	6,623	534,123
5	Krawang Strawberry	448,000	87,500	6,623	542,123
6	Combination Openwork	445,000	87,500	6,623	539,123
7	Tosca	452,000	87,500	6,623	546,123
8	Snow Princess	460,000	87,500	6,623	554,123
9	Cashew nuts	455,000	87,500	6,623	549,123

Source: Processed Data (2025)

While variable costing is considered to better reflect the costs actually incurred in the production process and can be an alternative in pricing decisions. Similar results were also presented by Nafisah et al. (2021), who stated that the difference in COGS between the full costing and variable costing methods is due to the treatment of fixed costs, where full costing produces a higher COGS value because it accommodates all variable and fixed costs. Furthermore, Faradela et al. (2022) emphasized that incomplete recording of overhead costs in business practices causes differences between COGS and full costing calculations, which directly impacts the profit margin. These findings indicate the importance of implementing a systematic and comprehensive COGS calculation method for accurate and sustainable selling price determination, particularly for small and medium-sized businesses in the food sector.

Based on these conditions, this study aims to analyze and compare the calculation of the cost of goods sold using the full costing method and the variable costing method for Kue Krawang Santi. The results are expected to provide recommendations for a more accurate and relevant COGS calculation method for MSMEs in the food industry, to support cost efficiency, appropriate pricing, and increase business competitiveness.

LITERATURE REVIEW

Cost Accounting and Cost Classification

Cost accounting plays a critical role in providing relevant information for managerial decision-making, particularly in cost control, pricing, and performance evaluation. It is defined as a systematic process of recording, classifying, analyzing, and reporting costs associated with production and service activities to support managerial planning and control (Purwaji & Wibowo, 2023; Rozein et al., 2024). The primary objective of cost accounting is to assist management in allocating resources efficiently, controlling production costs, and making strategic decisions based on accurate cost information (Mulyadi, 2016; Suratmaningsih, 2024).



Costs are commonly classified based on their nature, behavior, and period of allocation. Based on their nature, production costs consist of direct material costs, direct labor costs, and manufacturing overhead costs (Harahap, 2020). In terms of behavior, costs are categorized into variable and fixed costs, which respond differently to changes in production volume. Understanding cost behavior is essential for selecting appropriate costing methods and for managerial decision-making, especially in small and medium-sized enterprises (SMEs).

Cost of Production

Cost of production refers to the total costs incurred to transform raw materials into finished goods ready for sale, including direct materials, direct labor, and manufacturing overhead, both fixed and variable (Sahla, 2020). Accurate calculation of the cost of production is crucial as it serves as the basis for pricing decisions, cost efficiency evaluation, inventory valuation, and profit planning (Hamidah et al., 2022; Muliati et al., 2024). Inaccurate cost calculations may lead to inappropriate pricing strategies and reduced competitiveness.

Full Costing and Variable Costing Methods

Two widely used approaches in calculating the cost of production are full costing and variable costing. The full costing method allocates all production costs—both fixed and variable—to products, providing a comprehensive view of total production costs and supporting long-term pricing decisions (Mulyadi, 2016). In contrast, the variable costing method includes only variable production costs, making it more suitable for short-term decision-making such as special orders and pricing strategies under competitive market conditions (Aziziyah & Mardiana, 2021).

Previous empirical studies consistently show differences in cost and pricing outcomes between these two methods. Research indicates that full costing generally results in higher production costs than variable costing due to the inclusion of fixed overhead costs (Nafisah et al., 2021; Febrianti & Rahmadani, 2022). However, full costing is considered more accurate for determining selling prices that ensure long-term business sustainability, particularly in SMEs that often overlook indirect costs (Faradela et al., 2022).

Pricing Decisions

Pricing decisions are closely linked to the accuracy of production cost calculations. Cost-based pricing, particularly cost-plus pricing, remains a common approach among SMEs, where selling prices are determined by adding a profit margin to the cost of production (Horngren et al., 2015). Studies reveal that many small businesses rely on intuitive pricing based on market conditions



or experience, which often leads to pricing inefficiencies and profit distortions (Taroreh et al., 2021). Therefore, applying systematic costing methods such as full costing and variable costing is essential to enhance pricing accuracy and competitiveness.

Previous studies consistently emphasize the importance of accurate cost of production calculation as a basis for pricing decisions, particularly in small and medium-sized enterprises (SMEs) within the food industry. Research comparing full costing and variable costing methods generally finds that full costing produces higher cost figures due to the inclusion of fixed manufacturing overhead, whereas variable costing reflects only costs directly related to production volume (Nafisah et al., 2021; Angelica & Hadi, 2024).

Several empirical studies demonstrate that many SMEs do not comprehensively allocate overhead costs, resulting in underestimation of production costs and suboptimal pricing decisions (Thenu et al., 2021; Faradela et al., 2022). Studies by Bandi et al. (2023) and Febrianti and Rahmadani (2022) further confirm that neglecting indirect costs such as electricity and equipment depreciation leads to distorted cost structures and reduced profitability. Conversely, the application of full costing provides more detailed and accurate cost information, which supports sustainable pricing strategies and long-term business performance.

Other studies highlight that pricing decisions based solely on market intuition or experience, rather than systematic cost calculations, often create price disparities and profit inefficiencies (Taroreh et al., 2021; Astri & Sukabumi, 2021). The adoption of cost-based pricing approaches, particularly cost plus pricing combined with full costing, has been shown to improve pricing accuracy and managerial control over production costs (Fahriani & Rohmah, 2023).

Despite the growing body of literature, empirical evidence focusing on traditional food SMEs, particularly small-scale bakery and confectionery businesses, remains limited. This study addresses this gap by comparing full costing and variable costing methods in determining the cost of production and selling price of Kue Karawang in Gorontalo.

Framework of Thinking

This study is grounded in the premise that accurate pricing decisions depend on precise calculation of production costs. The conceptual framework begins with the identification of production cost components, including direct material costs, direct labor costs, and manufacturing overhead costs. These cost components are then calculated using two alternative costing approaches: full



costing, which includes both variable and fixed costs, and variable costing, which considers only variable production costs.

The calculated cost of production serves as the basis for determining the selling price through a cost-plus pricing approach, where a predetermined profit margin is added to the production cost. By comparing the results of full costing and variable costing, the study evaluates which method provides more accurate and relevant cost information for pricing decisions. Ultimately, this framework aims to support SMEs in establishing optimal selling prices that cover all production costs, ensure reasonable profit margins, and enhance competitiveness in the market.

RESEARCH METHOD

This study employs a quantitative descriptive approach with a case study design, focusing on a single business entity. The research aims to analyze and compare the calculation of the cost of production as the basis for pricing decisions. A descriptive quantitative method is appropriate because it enables systematic measurement and numerical analysis of production cost components to generate objective and interpretable findings (Sugiyono, 2019). The results of this study are context-specific and apply solely to the selected research object.

Research Site and Period

The research was conducted at Kue Krawang Bu Santi, located in Donggala, Hulonthalagi District, Gorontalo City, Indonesia. Data collection was carried out from August to November 2025.

Research Subject and Object

The research subject consists of the individual responsible for the financial and production cost records at Kue Krawang Bu Santi. The research object is the business operation of Kue Krawang Bu Santi, with a specific focus on production cost calculation and pricing determination.

Types and Sources of Data

This study utilizes both primary and secondary data. Primary data were obtained through direct interviews with the business owner to gather detailed information regarding production processes and cost structures. Secondary data were collected from internal business records, including raw material purchases, labor costs, overhead expenses, and production output documentation (Sugiyono, 2019).

Data Collection Techniques

Data were collected using three techniques:



1. Interviews, conducted directly with the business owner to obtain in-depth information related to production activities and pricing practices.
2. Observation, involving direct examination of the production process, cost recording procedures, and pricing determination methods.
3. Documentation, including financial records, cost reports, and production data relevant to the calculation of cost of production.

Data Analysis Technique

Data analysis was conducted using full costing and variable costing methods to calculate the cost of production. The full costing method includes all production costs—direct materials, direct labor, and both fixed and variable manufacturing overhead—into the cost of goods produced (Mulyadi, 2016). In contrast, the variable costing method allocates only variable production costs, excluding fixed overhead, to the cost of production (Mulyadi, 2016).

The analysis followed these steps: (1) identification and classification of production cost components; (2) calculation of cost of production using full costing and variable costing methods; and (3) comparison of the resulting cost figures to evaluate differences and determine their implications for selling price determination. This comparative analysis aims to identify the most appropriate costing method to support accurate pricing and improve business competitiveness.

RESULTS AND DISCUSSION

Cost Structure of Production

The results indicate that raw material costs constitute the largest proportion of total production costs at Toko Kue Karawang, followed by direct labor costs, while factory overhead costs represent a relatively smaller share. Monthly raw material expenses exceed IDR 21 million, reflecting the intensive use of primary inputs such as flour, butter, eggs, sugar, and packaging materials. This finding confirms that production activities in small-scale bakery businesses are highly sensitive to fluctuations in raw material prices.

Direct labor costs account for IDR 13.5 million per month, with six workers involved in daily production processes. Factory overhead costs, consisting of variable and fixed components, amount to approximately IDR 2.03 million per month. These costs include utilities, supporting materials, and depreciation of production equipment.



Cost of Production Using Full Costing Method

The full costing method incorporates all production-related costs, including raw materials, direct labor, variable overhead, fixed overhead, and non-production costs. The results show that the cost of production per unit (1 kg or two jars) ranges from IDR 535,458 to IDR 562,958 across different cake variants.

Among cost components, raw materials consistently dominate the cost structure, followed by direct labor. Fixed overhead and non-production costs contribute a smaller but constant amount to each unit. The inclusion of fixed and non-production costs results in a higher and more conservative unit cost, reflecting the total economic cost of production.

Cost of Production Using the Variable Costing Method

Under the variable costing approach, only variable costs—raw materials, direct labor, and variable overhead—are included in the unit cost calculation. Fixed overhead and non-production costs are treated as period costs.

The results show that the variable costing-based cost of production per unit ranges from IDR 526,623 to IDR 554,123. Compared to full costing, the unit cost under variable costing is consistently lower for all product variants.

Comparison Between Full Costing and Variable Costing

A consistent cost difference of approximately IDR 8,835 per unit (1 kg) is observed between the two methods. This difference represents the allocation of fixed overhead and non-production costs included only in the full costing method. The uniformity of this difference across products indicates that fixed costs are evenly distributed among production units.

Interpretation of Costing Method Differences

The findings confirm theoretical expectations in cost accounting. The full costing method produces higher unit costs because it allocates all fixed and variable costs to products, thereby providing a comprehensive representation of total production costs. This method is particularly relevant for long-term pricing strategies and profit planning, as it ensures that all costs are fully recovered through sales.

In contrast, the variable costing method yields lower unit costs by excluding fixed and non-production expenses. This approach emphasizes marginal cost behavior and is more suitable for short-term decision-making, such as promotional pricing, special orders, and contribution margin analysis.

Implications for Pricing Strategy

When a markup of 20% is applied, selling prices derived from full costing range between IDR 652,793 and IDR 688,793 per unit, while prices based on



variable costing range between IDR 639,893 and IDR 663,893. Notably, the actual selling price set by Toko Kue Karawang (IDR 750,000–800,000 per unit) exceeds prices calculated using both methods.

This indicates that the current pricing strategy is financially sound, as it not only covers all production costs but also provides a margin above the targeted markup. The excess margin may serve as a buffer against raw material price volatility, production inefficiencies, and market uncertainties.

Managerial Implications

From a managerial perspective, the results suggest that full costing should be used as the primary basis for long-term pricing decisions, financial evaluation, and sustainability planning. It ensures full cost recovery and stable profitability.

Meanwhile, variable costing can serve as a complementary analytical tool for short-term decisions. By focusing on variable costs, management can identify minimum acceptable prices, evaluate contribution margins, and design competitive pricing strategies without jeopardizing operational viability.

Theoretical and Empirical Alignment

The study's findings align with cost accounting theory, which distinguishes the strategic roles of full costing and variable costing. Empirically, the results are consistent with prior studies on small and medium-sized food enterprises, which report higher unit costs under full costing and emphasize the usefulness of variable costing for tactical decision-making.

Overall, the study reinforces the relevance of cost accounting methods in small-scale manufacturing contexts and demonstrates how proper cost classification enhances pricing accuracy, profitability analysis, and managerial decision quality.

CONCLUSION

Based on the research results, it can be concluded that the determination of the cost of goods manufactured at Toko Kue Karawang shows a significant difference between the full costing and variable costing methods. The full costing method produces a higher COGS because it includes all components of production and non-production costs, thus reflecting total costs comprehensively, while the variable costing method produces a lower COGS because it only considers variable costs and is more relevant for short-term decision making. The difference in COGS between the two methods has direct implications for determining selling prices and potential business profits. The findings also indicate that the selling prices that have been determined so far have



not been based on a systematic COGS calculation, and there are still obstacles in recording and grouping costs, especially in the separation of fixed costs, variable costs, and overhead allocation, which has the potential to cause inaccuracies in calculating production costs.

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