

**THE APPLICATION OF VARIABLE COSTING AND COST CONCEPTS IN MANAGERIAL ACCOUNTING AS A BASIS FOR DETERMINING PRODUCTION COSTS AND CORPORATE DECISION-MAKING: A LITERATURE REVIEW**

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**ABSTRACT**

Determining the cost of production is an important aspect of managerial accounting because it is related to cost control, selling price determination, and corporate decision-making. One method used to calculate production costs is variable costing, which includes variable manufacturing costs in product costs while treating fixed manufacturing costs as period expenses. This article aims to analyze the application of variable costing and cost concepts in managerial accounting and explain the usefulness of the resulting information for corporate decision-making. This study employs a literature review with a descriptive qualitative approach by examining relevant journal articles published between 2020 and 2025. The analysis identifies the focus, findings, similarities, and differences among previous studies. The review indicates that variable costing helps companies identify variable manufacturing costs more clearly, evaluate production expenditures, and provide information for considering selling prices and operational decisions. Differences between the results of variable costing and full costing primarily arise from the different treatment of fixed manufacturing costs. Therefore, the application of variable costing should be supported by accurate cost classification and aligned with the purpose of the analysis so that the resulting information can be used effectively by management.

**Keywords:** managerial accounting, cost concepts, variable costing, cost of production, decision-making.

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**1. INTRODUCTION**

Managerial accounting is an important part of business management because it provides financial and non-financial information to assist managers in planning, controlling, and making decisions. One of the main types of information required by management is cost information. Appropriate cost information enables a company to understand the resources used in its operational activities and evaluate the efficiency of its production processes. Garrison, Noreen, and Brewer (2021) explain that managerial accounting information is intended to help managers perform their planning, controlling, and decision-making responsibilities.

Production costs are closely related to a company's operational activities because they represent the resources used to manufacture products. In practice, companies may face difficulties in identifying, classifying, and allocating production costs appropriately. These difficulties can affect the accuracy of production cost calculations and the information used to evaluate business performance. Therefore, understanding cost concepts is essential for

management to distinguish between different types of costs and determine how they should be treated in managerial analysis.

One method that can be used to calculate production costs is variable costing. This method includes variable manufacturing costs in product costs, while fixed manufacturing overhead is treated as a period cost. This treatment allows management to distinguish costs that change with production activity from costs that generally remain constant within a relevant range. According to Garrison et al. (2021), understanding cost behavior is important because different managerial decisions may require different types of cost information.

Previous studies have examined the application of variable costing in various companies and industries. Some studies compare production costs calculated using variable costing and full costing, while others discuss how the method can help management identify production costs more clearly. These studies indicate that the choice of costing method can influence the amount of production cost reported and the information available to management.

Although previous studies have discussed variable costing in different business settings, further synthesis is needed to explain the relationship between variable costing, cost concepts, production cost determination, and managerial decision-making. A literature review can help identify common findings, differences in previous research, and areas that require further investigation.

Based on this background, this study reviews previous research on the application of variable costing and cost concepts in managerial accounting. The discussion focuses on the role of variable costing in determining production costs and providing information that supports managerial decisions.

## 2. RESEARCH QUESTIONS

This literature review addresses the following research questions:

1. How are variable costing and cost concepts applied in managerial accounting?
2. How does variable costing differ from full costing in determining production costs?
3. How can variable costing information support managerial decision-making?
4. What research gaps can be identified from previous studies on variable costing?

## 3. LITERATURE REVIEW

### 3.1 Managerial Accounting

Managerial accounting is the process of providing information used by internal parties within a company for planning, controlling, evaluating, and decision-making purposes. The information provided can be tailored to management's needs, including information about production costs and resource utilization. Through this information, management can assess the company's operational conditions and determine appropriate actions to achieve its objectives (Garrison et al., 2021).

In production activities, managerial accounting helps companies identify the costs incurred during the process of manufacturing goods. Information about raw material costs, labor costs, and manufacturing overhead can be used to identify the expenditure components that require attention. Proper cost information management also helps management evaluate cost changes and determine which operational areas require improvement.

Therefore, managerial accounting plays an important role in transforming cost data into useful information for a company. One of its applications is the use of variable costing to separate variable production costs from fixed production costs, allowing management to gain a clearer understanding of a product's cost structure.

### 3.2 Cost Concepts in Managerial Accounting

Cost refers to the sacrifice of resources incurred to obtain goods or services or to achieve a particular objective. In manufacturing companies, production costs generally consist of direct materials, direct labor, and manufacturing overhead. These three components must be properly identified to ensure that production costs are calculated according to the method being applied (Garrison et al., 2021).

Based on their behavior in response to changes in activity, costs can be classified into variable costs and fixed costs. Variable costs are costs whose total amount changes in response to changes in activity within the relevant range. In contrast, fixed costs are costs whose total amount remains relatively constant within a certain activity range. An example of a variable cost is raw material cost, which increases as production volume increases. Meanwhile, the cost of renting a production facility that remains unchanged over a certain period can serve as an example of a fixed cost.

In practice, not all costs can be classified directly as either fixed or variable. Some costs contain both fixed and variable components and therefore require further analysis based on the company's operating conditions. For this reason, understanding cost characteristics is an important part of applying variable costing.

Proper cost classification helps companies identify expenditure components associated with changes in production activity. This information can be used to evaluate resource utilization, track cost changes, and calculate production costs according to the purpose of the analysis.

### 3.3 Variable Costing

Variable costing is a product-costing method that includes variable manufacturing costs in the cost of a product, while fixed manufacturing costs are treated as period costs. Therefore, this method focuses on manufacturing costs that change in response to the company's production activities (Garrison et al., 2021).

The cost components included in variable costing may consist of variable direct materials, variable direct labor, and variable manufacturing overhead. Meanwhile, fixed manufacturing overhead is excluded from product costs under this method and is instead recognized as a period cost.

In simple terms, production costs under variable costing can be calculated using the following formula:

$$\text{Production Cost} = \text{Variable Direct Materials} + \text{Variable Direct Labor} + \text{Variable Manufacturing Overhead.}$$

This formula shows the variable manufacturing cost components included in this method. In practice, companies still need to examine the characteristics of each cost because not all labor costs or manufacturing overhead costs behave in the same way.

One advantage of variable costing is that it helps management identify variable production costs more clearly. This information can be used to evaluate production costs, monitor changes in expenditure, and support operational decisions. However, this method does not include fixed manufacturing costs in product costs. Therefore, its calculation results may differ from those obtained using full costing, which includes both variable and fixed manufacturing costs in product costs.

### 3.4 Cost of Production

Cost of production refers to the costs incurred by a company to manufacture products during a specific period. This information is important for evaluating manufacturing expenses and serves as one of the considerations in determining selling prices. The accuracy of cost of

production calculations depends on the completeness of cost records, the accuracy of cost classification, and the consistency of the costing method applied by the company (Garrison et al., 2021).

Under variable costing, the cost of production includes only variable manufacturing costs, while fixed manufacturing overhead is treated as a period cost. Under full costing, both variable and fixed manufacturing costs are included in product costs. As a result, the cost of production calculated using these two methods may differ.

These differences do not automatically indicate that one method is better than the other. Rather, they arise because each method treats fixed manufacturing overhead differently. Therefore, management needs to understand the purpose of the calculation before using cost of production information to make decisions.

### 3.5 Managerial Decision-Making

Managerial decision-making is the process of selecting an appropriate course of action based on available information and the objectives to be achieved. In managerial accounting, cost information can help management evaluate operational activities, control expenditures, and consider alternative decisions related to production and pricing (Garrison et al., 2021).

Variable costing information helps management identify variable production costs associated with manufacturing products. With this information, companies can assess cost changes, identify expenditures that need to be controlled, and evaluate resource utilization.

This information can also serve as one of the considerations in determining selling prices. However, selling prices should not be determined solely on the basis of variable production costs. Management must also consider fixed costs, non-manufacturing costs, market conditions, competition, and company objectives.

Therefore, variable costing should be used as one source of information in managerial decision-making. Its use should be complemented by other relevant information to ensure that decisions are not based on only some of the cost components.

## 4. ANALYSIS OF PREVIOUS RESEARCH

| No. | Authors and Year                    | Research Focus                                                                                                                                  | Main Findings                                                                                                               |
|-----|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1   | Febrianty and Muchlis (2020)        | Comparison of full costing and variable costing in determining production costs at PDAM Tirta Je'neberang, Gowa Regency                         | The study compared the two costing methods and highlighted differences in the treatment of production costs.                |
| 2   | Bratamanggala and Putri (2020)      | Comparison of full costing and variable costing in determining cement production costs and selling prices at PT Indocement Tunggal Prakarsa Tbk | The study examined how different costing approaches influence production cost calculations and selling-price analysis.      |
| 3   | Nursukmawati and Nurdiansyah (2021) | Application of variable costing in calculating production costs at PT Yushiro Indonesia                                                         | The study recalculated production costs using variable costing to compare the results with the company's existing approach. |

|    |                                            |                                                                                                      |                                                                                                                                                                              |
|----|--------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4  | Turangan, Tinangon, and Walandouw (2021)   | Application of variable costing to electricity production costs at PT PLN UP3 Minahasa               | The study reported a difference between the production cost calculated using variable costing and the company's calculation, illustrating the impact of cost classification. |
| 5  | Alfan et al. (2024)                        | Implementation of variable costing to determine production costs in a manufacturing company          | The study discussed the use of variable costing to identify production costs and support cost analysis.                                                                      |
| 6  | Nadila et al. (2024)                       | Calculation of production costs using variable costing at PT Gudang Garam Tbk, Padang Sidempuan      | The study examined production cost calculations using variable costing in a company setting.                                                                                 |
| 7  | Putri Winata, Afif, and Triwidatin (2024)  | Application of variable costing in calculating production costs at PT Arkha Jayanti Persada          | The study compared the company's production cost calculations with calculations based on variable costing.                                                                   |
| 8  | Siagian et al. (2025)                      | Variable costing in a beverage-cup manufacturing company, PT Makmur                                  | The study discussed the role of variable costing in identifying variable costs and supporting production cost analysis.                                                      |
| 9  | Novianingsih et al. (2025)                 | Comparison of production cost calculations using full costing and variable costing at PT Kimia Farma | The study found differences in production costs calculated under the two methods because of their different treatment of fixed manufacturing costs.                          |
| 10 | Surianto, Adhiningsih, and Ramadana (2025) | Comparison of full costing and variable costing at PT Bumi Sarana Beton                              | The study reported that variable costing resulted in a lower production cost than full costing in the case examined.                                                         |

## 5. SYNTHESIS AND RESEARCH GAP

Based on the reviewed studies, variable costing has been applied in different companies and industries to calculate production costs and compare the results with other costing methods. Several studies show that the production costs calculated using variable costing may differ from those calculated using full costing. The main reason is the different treatment of fixed manufacturing overhead.

The reviewed literature also indicates that cost classification is an important part of managerial accounting. Separating variable and fixed costs can help management understand how costs respond to changes in production activity. This information can be useful when evaluating production efficiency, examining product costs, and supporting operational decisions.

However, the previous studies generally focus on specific companies, industries, or comparisons between costing methods. Although these studies provide useful findings, their results are spread across different business contexts and research objectives. Therefore, a broader synthesis is needed to explain how variable costing and cost concepts are connected to production cost determination and managerial decision-making.

The research gap identified in this review is the need for an integrated discussion of variable costing, cost classification, production cost determination, and the use of cost information in managerial decisions. This review addresses that gap by synthesizing the findings of previous studies rather than focusing solely on calculating production costs in one company.

## **6. RESEARCH METHOD**

This study uses a literature review method. The method involves collecting, examining, comparing, and synthesizing information from relevant scientific articles, previous research, and managerial accounting literature. The main focus is on studies discussing variable costing, cost concepts, production cost determination, and managerial decision-making.

The literature selection emphasizes publications from 2020 onward to obtain relatively recent research findings. Relevant studies were identified based on their connection to the research topic, the availability of information about their research objectives and findings, and their relevance to the application of variable costing.

The analysis was conducted descriptively. First, the selected studies were reviewed to identify their research focus and main findings. Second, the findings were compared to identify similarities and differences in the application of variable costing. Finally, the results were synthesized to explain the role of variable costing and cost concepts in production cost determination and managerial decision-making.

As a literature review, this study does not collect primary data directly from a company. Its conclusions are based on the literature examined. Therefore, the findings should be interpreted in accordance with the scope and limitations of the reviewed studies.

## **7. RESULTS AND DISCUSSION**

### **7.1 The Application of Variable Costing in Production Cost Calculation**

The reviewed studies demonstrate that variable costing can be used to calculate production costs by separating variable manufacturing costs from fixed manufacturing overhead. This approach allows companies to identify the costs directly associated with changes in production activity.

The separation of costs is important because management needs to understand which costs increase or decrease when production volume changes. By identifying variable manufacturing costs, managers can obtain more detailed information about the resources required to produce each unit. This information can also be used to examine cost efficiency and evaluate production activities.

Nevertheless, the results of variable costing depend on the accuracy of cost classification. If variable costs are incorrectly classified as fixed costs, or vice versa, the resulting cost information may not accurately represent the company's cost structure. Therefore, companies need to classify costs carefully when applying variable costing.

### **7.2 Differences Between Variable Costing and Full Costing**

One of the main findings from the reviewed literature is that variable costing and full costing can produce different production cost figures. Under variable costing, fixed manufacturing overhead is treated as a period cost. Under full costing, fixed manufacturing overhead is included in product costs.

This difference affects the amount of manufacturing cost assigned to each unit of product. In general, variable costing produces a lower product cost than full costing when fixed manufacturing overhead is positive and the methods are applied to the same production activity. However, the difference in reported profit between the methods also depends on the relationship between production and sales volumes and the treatment of inventories.

The distinction between the two methods is important when managers compare production cost information. A lower production cost under variable costing does not automatically mean that the company has become more efficient. The difference may result from the method used to classify and allocate costs rather than an actual reduction in the resources consumed.

Therefore, managers should understand the basis of each calculation before using the resulting figures to evaluate performance or make decisions.

### 7.3 Comparison of Variable Costing and Full Costing

Variable costing and full costing differ mainly in how they treat fixed manufacturing costs. Under variable costing, variable manufacturing costs are included in product costs, while fixed manufacturing costs are recognized as period costs. In contrast, full costing includes both variable and fixed manufacturing costs in product costs (Garrison et al., 2021).

| Aspect                       | Variable Costing                                                                          | Full Costing                                                                                   |
|------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Variable manufacturing costs | Included in product costs                                                                 | Included in product costs                                                                      |
| Fixed manufacturing costs    | Recognized as period costs                                                                | Included in product costs                                                                      |
| Information focus            | Variable manufacturing costs                                                              | Total manufacturing costs                                                                      |
| Purpose                      | Internal cost analysis and evaluation of variable costs                                   | Calculation of product costs that include fixed and variable manufacturing costs               |
| Calculation results          | May produce a lower cost of goods manufactured when fixed manufacturing costs are present | May produce a higher cost of goods manufactured because fixed manufacturing costs are included |

These differences explain why the results obtained using the two methods are not always the same. Research by Surianto et al. (2025) at PT Bumi Sarana Beton found that the cost of goods manufactured calculated using variable costing was lower than that calculated using full costing. This difference was related to the treatment of fixed manufacturing costs in the calculation of product costs.

Although variable costing can provide clearer information about variable costs, a lower calculated production cost does not automatically mean that the method is more appropriate for every purpose. Management needs to understand the purpose of the analysis and consider the company's information requirements before using the calculation results as a basis for decision-making.

Therefore, the two methods have different characteristics. Variable costing can be used to support internal analysis of variable costs, while full costing provides a product cost

calculation that includes both fixed and variable manufacturing costs. The choice of method should be based on its intended purpose and the applicable reporting requirements.

#### **7.4 The Use of Variable Costing Information in Decision-Making**

Variable costing can support managerial decision-making by providing information about variable manufacturing costs and distinguishing these costs from fixed manufacturing overhead. Such information helps managers understand the cost components associated with production and evaluate the implications of changes in activity.

For example, managers can use variable cost information to assess the additional variable costs associated with producing more units. They can also examine the contribution generated by products toward covering fixed costs and generating operating income. This information is useful for internal analysis, although it should be considered alongside other relevant financial and operational factors.

The reviewed studies suggest that cost information is most useful when it matches the purpose of the decision. A costing method suitable for internal analysis may not necessarily produce the same figures as a method used for external financial reporting. Consequently, managers should understand the purpose, assumptions, and limitations of the information before using it to select an alternative.

#### **7.5 Implications for Companies**

The findings of this review have several implications for companies. First, companies need to establish a clear cost classification system so that variable and fixed costs can be identified appropriately. Second, they should select a costing method that matches the purpose of the analysis. Third, managers should avoid interpreting differences in calculated production costs as direct evidence of efficiency improvements without examining the underlying cost structure.

Companies can also use variable costing as an internal management tool to understand variable production costs and support operational evaluations. However, the method should be applied consistently, and its results should be interpreted together with information about fixed costs, production volume, inventory, and other factors relevant to the decision.

Overall, variable costing is useful as part of managerial accounting because it provides a different perspective on production costs. Its effectiveness depends on the quality of cost data, the accuracy of classification, and the ability of management to interpret the results appropriately.

### **8. CONCLUSION**

Based on the literature reviewed, variable costing is a managerial accounting method that separates variable manufacturing costs from fixed manufacturing overhead. This distinction provides management with information about variable production costs and supports the analysis of operational activities.

The reviewed studies indicate that variable costing and full costing may produce different production cost figures because they treat fixed manufacturing overhead differently. Therefore, differences in calculated costs should be understood in the context of the costing method applied rather than automatically interpreted as differences in operational efficiency.

Cost concepts are essential to the application of variable costing because appropriate cost classification helps ensure that the information used in managerial analysis is relevant and reliable. When properly applied, variable costing can support production cost analysis, cost control, product evaluation, and managerial decision-making.

This review also identifies the need for further research that integrates variable costing, cost classification, production cost determination, and managerial decision-making across different industries. Future studies could examine how companies use variable costing information in actual management decisions and how the method's usefulness varies according to industry characteristics and operational needs.

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