Analysis of the Determination of Standard and Actual Raw Material Cost Calculations at PT Cipta Frima

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Abstract. This study aims to evaluate whether Cipta Frima Jaya company uses standard and actual costing in its activities, and whether it affects the company's profitability. Using a descriptive approach, this research will analyze the implementation and influence of standard and actual costs on the company's operations. The descriptive method in this study will include data collection related to standard and actual costing carried out by the company. The data may include information on how standard costs are set, how actual costs are monitored and recorded, and how comparisons between standard and actual costs are made. The analysis process will involve a comparison between standard and actual costs to evaluate the extent to which Cipta Frima Jaya company implements effective cost control practices. If there is a significant difference between standard and actual costs, the cause and impact on the company's profitability will be analyzed. The results of the analysis will provide an understanding of the effectiveness of standard and actual costing in controlling the company's production costs, as well as its impact on the company's overall financial performance. This information can be the basis for recommendations for improvement or improvement in cost management and decision making at Cipta Frima Jaya company. For the purpose of support PT Cipta Frima Jaya in these three areas, this research may subsequently be used for analysis to examine standard costs, actual costs, and cost control inside the organization. This study might also serve as a summary for other businesses looking to implement similar standards for effective management.

Keywords: Standard Cost, Actual Cost, Cost Control

1 Introduction

In the dynamic sphere of globalization, industrial enterprises like PT Frima Jaya operating in the fish freezing industry face a more intricate competitive landscape [1]. They must contend with a wide range of difficulties, such as shifts in the global supply chain dynamics and regulatory changes in addition to market swings [2]. Amidst this intricacy, cost management emerges as a crucial factor that ascertains the company's operations' long-term viability and success [3]. This process is very comprehensive in establishing scientific cost projections for the production of a unit or a number of units of a product within a certain period of time in the future. Standard costing, thus, not only reflects cost estimation, but also becomes a tool to measure the company's operational performance in achieving production efficiency and effectiveness [4] [5].

With accurate standard costing supported by reliable data, companies can plan budgets more precisely and identify potential cost deviations at various stages of production [6]. However, the role of standard costs does not stop there. As a performance measurement tool, standard costs also allow management to compare expected costs with actual costs incurred during the production process [7]. Through cost variance analysis, companies can identify cost deviations, analyze their causes, and take appropriate corrective actions. Planning and control, standard costing is also the foundation for effective risk management and decision-making strategies [8]. In an era of rapid business dynamics, companies such as PT Frima Jaya must be able to adjust to changes in the market and business environment that are constantly changing. Proper use of standard costs and careful analysis of cost variances can help a company to remain responsive to changes and take the necessary steps to maintain its competitiveness [9] [10].

In the context of PT Frima Jaya, where operational efficiency and cost management are key to success, it is important to conduct an in-depth analysis of the implementation and effectiveness of standard costing in the company's activities [11]. By doing so, PT Frima Jaya can strengthen its operational foundation, increase added value for stakeholders, and create a solid platform for its long-term growth and success amidst ongoing changes.

In general, to analyze the benefits of cost variants, the tool used by management in carrying out the planning and control function is standard costing. Standard costs are determined scientifically supported by accurate and up-to-date data. Standard costs are set in advance to produce a unit of product or several units of product in a certain period of time in the future [12].

In addition, standard costs also act as planned costs for a product to be produced under certain operating conditions so that they can be used as a comparison of actual costs if there is a deviation between the cost of the relization and what has been standardized, the cause of the deviation must be sought [13].

Standards occur as part of a scientific management movement, from the need to better control the costs that arise due to the company's operating activities [14]. PT Frima Jaya is one of the private companies engaged in fish freezing production, which supplies fish production needs in Gorontalo Province and its surroundings. So it is important to analyze whether this company has applied Standard and Actual Cost Calculations to its company activities [15].

2   Methods

The descriptive research method employed in this study entails providing a comprehensive portrayal of the production process and the cost management system implemented by the company [16]. Additionally, it explores the implications of utilizing standard costs in controlling production costs. This method allows for a detailed examination and description of how the production processes are conducted within the company, including the various stages involved, resource allocation, and cost monitoring mechanisms.

Furthermore, the research delves into the specifics of how standard costs are integrated into the company's cost management system. It investigates how standard costs are determined, applied, and monitored throughout the production process. By employing the descriptive research method, the study aims to provide a clear understanding of the role and impact of standard costs in controlling production costs within the company's operations.

Through descriptive analysis, the research seeks to elucidate the effectiveness and efficiency of the company's cost management practices, particularly in relation to the utilization of standard costs. By examining the production process and cost management system in detail, the study aims to identify strengths, weaknesses, opportunities, and threats inherent in the company's current approach to cost control.

Overall, the descriptive research method serves as a valuable tool for comprehensively examining the production process, cost management practices, and the utilization of standard costs within the company. It facilitates a thorough understanding of how these factors interact and influence the company's overall performance and financial outcomes.

2.1   Operational Research Variables

Variable Operations is an explanation of the theoretical understanding of variables so that it can be measured. This operationalization provides the information needed to measure the variables that are the object of observation in this study.

1.   Standard Cost

Standard costs are costs determined in advance for raw materials, direct labor, and factory overhead, determined through the use of information compiled from past experience and data secured from the results of research studies.

In determining standard costs there are 2 decisions that must be made, namely:

a. How many inputs should be used per unit of output (quantity decision)

b. How much to pay for the inputs used (pricing decision).

From the quantity decision comes the standard quantity, and from the pricing decision comes the standard price, so standard cost has 2 components, namely, standard quantity and standard price. How to set standard costs, first by setting standard raw material costs which are determined by standard raw material quantities and standard raw material prices. Second, setting standard factory overhead costs which are determined by factory overhead rates and standard direct labor hours.

2.   Controlling production costs

Control is an effort from the company leader to direct all activities towards all previously set plans and goals. Production costs are costs incurred to produce a predetermined production in a certain period assuming economic conditions as well as a predetermined level of efficiency and other factors. In connection with the production process, production costs are divided into 3 elements, namely direct raw material costs, direct labor costs and factory overhead costs. The method of controlling production costs carried out by the company is as follows:

3.   Control of raw material costs

The price per unit set by the budget is calculated based on the average price of direct raw materials last year and analyzes the possibility of price increases that occur based on the information received.

3   Result and Discussion

The object of this research is PT Cipta Frima Jaya where the company is engaged in canning fish The company is located in Huangobotu Village, District. Kabila Bone.Bone Bolango Regency, Gorontalo Province.

3.1 Types, sources and methods of data collection
1. Type of data
The type of data used in this study is documentary data. documentary data is a type of research data in the form of opinions and experiences or characteristics of a collection of policies implemented by PT. Cipta Frima Jaya regarding standard cost data and production cost data.
2. Data source
The data source obtained in this study is secondary data. Researchers obtained standard cost data and production cost data indirectly. The data was obtained and recorded by PT Cipta Frima Jaya.
3. Data Collection Method
The data collection method used by researchers is the observation method. Researchers made direct observations at PT Cipta Frima Jaya with the aim of obtaining data through observations of the application of standard costs to control production costs.

3.2 Analysis Design
The data analysis design used in this research is descriptive research results. In descriptive research methods, data is first collected, compiled and then interpreted, analyzed and tested so that it can provide an overview of a situation and provide answers to existing problems without conducting a statistical method test.
Total budget variance is the difference between actual costs and planned costs with the following formula:
Total variance = (AP×AQ)- (SP×SQ)

Where:
AP=Actual price per unit of input
AQ=Actual quantity of input used
SP=Standardized unit price
SQ=Standardized input quantity
        Variance Analysis of Raw Material Costs

The two factors included in determining the standard for raw material costs are: standard quantity (usage) and standard price. If the actual quantity of raw materials used in production differs from the standard quantity, a quantity variance arises. If the actual price per unit of raw material is different from the standard price, a price variance arises.

        Raw Material Price Variance Analysis
Raw material price variance (MPV) can be determined by the formula

MPV = (AP-SP) AQ. .... (1)

Where:
AP=Actual price per unit
AQ=KᴜaActual quantity of raw materials used
SP=Ha= Standard price per unit

        Variance Analysis of Direct Raw Material Usage
The materials usage variance (MUV), measures the difference between the direct raw materials actually used and the raw materials that should have been used and the raw materials that should have been used for actual output. The formula for calculating this variance is:
MUV = (AQ - SQ) SP ...... (2)

Where:

AQ = Actual quantity of raw materials used
SQ = Standard quantity of raw materials
SP = Standard price

The calculation steps taken in this study are as follows:
1. Determination of Standard Costs in the Company
The company uses a normal cost system where standards are set for a normal level of operation and efficiency and are intended as a challenge that can be achieved. Standard costing in the company includes standard raw material costs, standard direct labor costs, and standard factory overhead costs.
2. Calculation of Variants of Raw Material Costs, Direct Labor Costs and Factory Overhead Costs with Standard and Actual Cost Approaches for Production Cost Control.
To be able to determine the extent to which prooduction cost control is carried out and to determine whether standard costs can be used for efficient and effective production cost control, it is necessary to analyze by comparing standard costs and actual costs.
Difference in raw material costs
Calculations of raw material costs incurred in a production period are analyzed to determine whether deviations occur, as follows:
RAW MATERIAL COST DIFFERENCE ANALYSIS
Actual raw material costs
Standard raw material cost (-)
Raw material cost difference
ANALYZE THE DIFFERENCE IN RAW MATERIAL PRICES:
The difference in the price of inactual materials - standard price) x actual quantity
ANALYZE THE DIFFERENCE IN THE USE OF RAW MATERIALS:
Difference in quantity of raw material usage = (actual quantity of raw material usage - standard quantity of raw material) x standard price
3.3 Analysis and Discussion
A. Descriptive of the Research Object
1. Company profile
PT Cipta Frima Jaya is a fish canning company established since 1997, located at JI Trans Sulawesi, huangobotu village, Kabila Bone sub-district, Bone Bolango district, Gorontalo province, which produces frozen fish in this case to meet the needs of Gorontalo province and the Sulawesi market and surrounding areas. fish freezing consists of various kinds of fish such as:
a. Swallowfish
b. Deho fish
c. Skipjack fish
d. Tuna fish
e. Oci fish
PT Cipta Frima Jaya processes the above types of fish to be frozen in order to meet the needs of the consumption market in Gorontalo Province, the Sulawesi region and parts of Java.
B. Descriptive Research Data
1. Standard Cost Calculation at PT Cipta Frima Jaya
For each type of direct raw material, for each worker operation, and for factory overhead the actual cost is measured (compared) against the standard cost so that it is likely to cause a difference. This difference is analyzed and identified as a cost variance with a specific name. If actual costs exceed the standard, this variance is called (unfavorable) because it will reduce profits. Conversely, if standard costs are greater than actual costs, the variance is called (favorable) because it will increase profits.
However, it is not enough for the analysis to stop at such an identification. Cost variance is a question, not an answer. In carrying out cost control, managers must determine the causes of large cost variances by investigating the circumstances.
a. Standardized Raw Material Costing
The raw materials used by PT Cipta Frima Jaya are ikan layang, ikan deho, ikan cakalang, ikan tuna and oci, the products produced by PT Cipta Frima Jaya are frozen fish 15 tons per 4 months.
Determination of standard raw material costs is determined by two factors, namely, standard price and standard quantity.

1) The standard price of raw materials is as follows:
Layang fish Rp 22,000 / kg
Deho fish Rp 15,000 / kg

skipjack fish Rp 20,000 / kg
Tuna Rp 35,000 / kg
Mackerel Rp 22,000 / kg

Standard quantity of raw materials used to produce fish products in normal capacity of 3000 fish each in each shipment (per 4 months)
The quantity of raw materials and standard raw material costs for the fish freezing production process in one year in this case the company sends products every 4 months, thus in a year there are 3 shipments where each shipment the company supplies 15 tons or 15,000 kg of fish per shipment, then times3 for a period of a year to 45,000 or 45 tons in a year.

Standard raw material usage quantity
Swordfish: 9,000 kg
Deho fish: 9,000 kg
Skipjack: 9,000 kg
Tuna fish: 9,000 kg
Mackerel: 9,000 kg

Table 1. Standard Raw Material Cost PT Cipta Frima Jaya Period Year 2022

Raw Material	Standard Price (Rp)	Standard Quantity (Kg)	Raw Material Costs Standard (Rp)
Kite Fish	22.000	9.000	198.000.000
Deho fish	15.000	9.000	135.000.000
Skipjack	20.000	9.000	180.000.000
Tuna fish	35.000	9.000	315.000.000
Mackerel	22.000	9.000	198.000.000
Total Standardized Raw Material Cost			1.026.000.000

Table 2. Actual Raw Material Cost PT Cipta Frima Jaya Period Year 2022

Raw Material	Standard Price (Rp)	Standard Quantity (Kg)	Raw Material Costs Standard (Rp)
Kite Fish	25.000	9.000	225.000.000
Deho fish	20.000	9.000	180.000.000
Skipjack	25.000	9.000	225.000.000
Tuna fish	40.000	9.000	360.000.000
Mackerel	25.000	9.000	225.000.000
Total Standardized Raw Material Cost			1.215.000.000

Analysis of Variant Difference in Direct Raw Material Costs
The difference in raw materials is the difference between actual raw material costs and standard raw material costs.
Actual raw material costs Rp. 1. 215,000,000
Standard raw material costs Rp. 1. 026,000,000 (-)

Rp.189,000,000 U)

4 Conclusions

Therefore clear from the thorough examination of prior research findings that Pt. Cipta Frima Jaya has benefited from using standard cost calculation for production cost control, especially when it comes to standard raw material costs, which include standard quantities and prices. The company's dedication to effective cost management techniques is demonstrated by the application of a thorough standard and real raw material cost variant analysis. Pt. Cipta Frima Jaya can efficiently monitor cost differentials, pinpoint areas for improvement, and make well-informed decisions to maximize resource allocation and increase overall operational efficiency

by comparing standard costs with real costs. In addition to guaranteeing cost control, this strategic strategy boosts the company's competitiveness and sustainability in the marketplace.

There are a number of chances for more research in this field in the future. Initially, investigating the incorporation of sophisticated artificial intelligence and machine learning algorithms into the conventional cost computation procedure may improve precision and prognostication, consequently augmenting cost management methodologies. Furthermore, carrying out longitudinal research to evaluate the standard cost implementation's long-term effects on Pt. Cipta Frima Jaya's financial performance and sustainability would offer important new perspectives on how effective it will be in the long run. Additionally, looking into any overlaps between traditional cost analysis and new management accounting methods like lean accounting or activity-based costing may present fresh ideas for value creation and cost minimization inside the organization.

Furthermore, it is imperative to recognize certain limitations inherent in the present body of research. First, the accuracy and availability of data, especially with regard to real cost estimates and the completeness of historical records, may pose limitations to the study. Furthermore, the study's purview might not have adequately addressed the larger organizational framework and outside variables that might have an impact on Pt. Cipta Frima Jaya's cost-management procedures. Moreover, the research's dependence on retroactive analysis might constrain its capacity to offer instantaneous perspectives or predict forthcoming obstacles. Future research efforts in this subject would be more robust and applicable if these constraints were addressed by more comprehensive data collecting, longitudinal research methods, and qualitative assessments of organizational dynamics.

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