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ANALYSIS OF PRODUCTION COST CALCULATION USING JOB ORDER COSTING METHOD AT PT SECMA ENERGY CELL

Yeni Elfiza Abbas
Sekolah Tinggi Ilmu Ekonomi Swadaya, Jakarta, Indonesia
E-mail: abbasyeni603@gmail.com

Ulil Fadilah*
Sekolah Tinggi Ilmu Ekonomi Swadaya, Jakarta, Indonesia
E-mail: ulilfadilah@yahoo.com

Abstract

Production Cost Calculation is very important for companies as support in financial reporting. Recording production costs encourages business managers to create accurate and fast administrative documentation, so that companies can predict selling price and profit and loss in accordance with expectations. This study aims to examine whether PT Secma Energy Cell, situated in Gresik Regency, East Java, to the principles of cost accounting in implementing the Job Order Costing method for determining production costs. Utilizing a descriptive qualitative approach with a case study methodology, the study aims to evaluate the application of cost calculations for plastic bags and rolls of varying sizes. Data gathering techniques encompass observation, interviews, and documentation of total and variable cost calculations. The study spanned around six months, from December 2022 to May 2023, whereas the data recorded dates back to October 2021. Findings revealed that PT Secma Energy Cell employs a total of 62 individuals, with 34 engaged directly in production activities, while the remainder are non-production staff. Over the course of one month, the company utilized 115,400 kilograms of raw materials, amounting to IDR 2,311,471,500.00, the production of ready-to-sell goods for 1 month was 42,775,005 kg, plastic roll production was 105,020.00 kg, and plastic bag production was 147,795 kg. Up to this point, the company has established the product price per kilogram with an approximately markup of 70%, so that each order received has been calculated in advance regarding the selling price of each product. The analysis revealed that using the Job Order Costing method, the production cost amounted to IDR16,559.48 per kilogram for plastic bags and IDR20,118.81 for plastic rolls. This indicates that PT Secma Energy Cell effectively implements the job order costing method by accurately accounting for expenses associated with raw materials, direct labor, and factory overhead costs. This is intended to enhance the accuracy of the set selling price and potentially boost the company's future profitability.

Keyword: *Production Cost; Job Order Costing; Selling Price.*

Abstrak

Salah satu penunjang terpenting dalam pembuatan laporan keuangan adalah perhitungan biaya produksi. Pencatatan biaya produksi mendorong pengelola usaha untuk membuat dokumentasi administrasi yang akurat dan cepat, sehingga perusahaan dapat memprediksi harga jual dan laba rugi yang sesuai dengan harapan. Penelitian ini bertujuan untuk menguji apakah PT Secma Energy Cell yang berlokasi di Kabupaten Gresik, Jawa Timur, telah sesuai dengan prinsip-prinsip akuntansi biaya dalam menerapkan metode *Job Order Costing* untuk menentukan biaya produksi. Menggunakan pendekatan kualitatif deskriptif dengan metodologi studi kasus, penelitian ini bertujuan untuk mengevaluasi penerapan perhitungan biaya untuk kantong dan gulungan plastik dengan berbagai ukuran. Teknik pengumpulan data meliputi observasi, wawancara, dan dokumentasi perhitungan biaya total dan variabel. Penelitian ini berlangsung selama enam bulan, dari Desember 2022 hingga Mei 2023, sedangkan data yang direkam dimulai dari Oktober 2021. Temuan menunjukkan bahwa PT Secma Energy Cell mempekerjakan total 62 orang, dengan 34 orang terlibat langsung dalam kegiatan produksi, sedangkan sisanya adalah staf non produksi. Selama satu bulan, perusahaan menggunakan bahan baku sebanyak 115.400 kilogram, senilai Rp2.311.471.500,00, produksi barang siap jual selama 1 bulan sebanyak 42.775.005 kg, produksi gulungan plastik sebanyak 105.020,00 kg, dan produksi kantong plastik sebanyak 147.795 kg. Selama ini, perusahaan menetapkan harga produk per kilogram dengan markup sekitar 70%, sehingga setiap pesanan yang diterima sudah diperhitungkan terlebih dahulu mengenai harga jual masing-masing produk. Hasil analisis menunjukkan bahwa dengan menggunakan metode *Job Order Costing*, biaya produksi sebesar Rp16.559,48 per kilogram untuk kantong plastik dan Rp20.118,81 untuk gulungan plastik. Hal ini menunjukkan bahwa PT Secma Energy Cell secara efektif menerapkan metode *job order costing* dengan memperhitungkan secara akurat biaya-biaya yang terkait dengan bahan baku, tenaga kerja langsung, dan biaya overhead pabrik. Hal ini dimaksudkan untuk meningkatkan keakuratan harga jual yang ditetapkan dan berpotensi meningkatkan profitabilitas perusahaan di masa depan.

***Kata Kunci*:** Biaya Produksi*; Job Order Costing;* Harga Jual.

INTRODUCTION

In general, every company, whether a trading or service company, has the same goal, which is to earn as much profit as possible. A manufacturing company is a company that processes raw materials into semi-finished or finished products. The activity cycle of a manufacturing company begins with the purchase of raw materials, the processing of raw materials in the production department, and ends with the delivery of semi-finished or finished products to the warehouse. Manufacturing companies have one business objective to generate profits from the sale of semi-finished or finished products. PT Secma Energy Cell, located at Jl. Krikilan No. 60 Driyorejo Gresik East Java, is a manufacturing company that produces plastic bags with several types of materials and sizes. In determining selling price, the company is currently still applying simple calculations and is less in accordance with the Job Order Costing method, therefore it is unfortunate if the company's profitability has not been maximized in improving business operations that already have a fairly large turnover of an average of 2-3 billion rupiah per month. Based on this, the researcher wants to make a comparison of the simple calculations applied by PT Secma Energy Cell so far compared to the application of calculations using the Job Order Costing method.

The production cost determination is conducted to establish the selling price of the product, the amount of finished goods and work-in-process inventory reported in the balance sheet. And the determination of the selling price is influenced by the accuracy of determining the production cost. If there is an error in determining the production cost at the time of recording and presentation of the financial statements, it will place the company in an incorrect profit calculation position so that which can harm the company.

The Job Order Costing method to determine production costs is a manufacturing costing method that allocates costs to specific processes to obtain detailed and accurate values as a basis for applying the selling price of finished goods. For companies applying the Job Order Costing method, the accuracy of production costs calculation is very important because when the company receives an order from a customer, the company must ensure the selling price of its products before producing it so that the company does not suffer losses (Fardhani et al., 2016). On the other hand, research conducted by Syafi'i (2018) It was concluded that the production cost calculation utilizing the Job Order Costing method exceeds the calculation using the method usually applied by the company. This is natural because of the many variations and types of expenses incurred when producing a product.

Determination of production cost for manufacturing companies that produce according to customer orders is determined by the production process carried out by the company. Based on the production process, the determination distinguishes two types of production processes that companies can carry out, Specifically, two costing methods are employed: job order costing and process costing. In job order costing, product costs are gathered for individual orders. Conversely, in the process costing method, production costs are accumulated over a certain period. Selling price determination is influenced by the accuracy of the purchase price of goods that will later be sold. If there is an error in determining the purchase price of the goods, the company will suffer a loss. By establishing expenses related to production and setting the rates at which goods are sold, the company can make a profit and determine the amount of profit for the company. The lower the production cost and the higher the selling price, the higher the profit. However, when production costs are higher and selling prices are lower, the company's profit decreases. This situation is closely related to the production costs incurred by the company.

There are several ways to set the price of a product. For example, the selling price of a product package can be calculated to be

three times the production cost or slightly lower than the competitor's selling price. However, such costing and pricing are not the best way to control the budget. When setting prices, it will directly affect the company's profits. That's why it is important to know the exact production cost of a product to be sold as soon as possible. Before determining the appropriateness of the selling price of the product, business people must consider several aspects related to the production cost (Harahap et al., 2021: 58). Due to the difficulty of determining the current production cost at PT Secma Energy cell which arises from the factor of the large variety of goods produced according to customer orders, the uncertainty of raw materials used in producing an order, The unpredictability of the working hours for staff directly engaged in the production process and the generalization of certain costs, it is difficult for the company to determine the appropriate selling price which greatly affect the company profitability and competitiveness in the market. This encourages the researcher to conduct research to find out whether the Job Order Costing calculation method can be applied in accordance with the cost accounting rules and can be useful for the company as a reference in determining the production cost.

THEORETICAL FRAMEWORK

Definition of Production Costs

Production costs are the cost of processing materials from raw materials to finished products. The determination of production costs will be calculated based on respective items that include the production cost components of a product resulting from the production process, which will determine the price of finished goods. According to Mulyadi (2015: 14), production cost refer to expenses accrued during the transformation of raw materials into finalized products ready for sale. In the context of cost accounting, as defined by Mulyadi (2018: 7), it encompasses the procedures of documenting, categorizing, condensing, and demonstrating expenses associated with manufacturing and vending goods or services in specific manners, followed by interpretation. The focal point of these activities is the cost itself. In line with this, according to Dadan, Ramdhani, DR et al., (2020), establishing production costs through the Job Order Costing method involves several components, such as raw material costs, direct labor costs, and factory overhead costs. These elements are explained as follows :

1. Direct Raw Material Costs

   Direct raw materials are all raw materials that are part of the finished goods that are explicitly included in the calculation of the production cost. An example of direct raw materials is plastic seeds which are first processed by an extruder machine and then molded into plastic. The ease of tracing from raw materials to finished products is a key point in classifying costs as direct raw materials. The formula that can be used to calculate direct raw materials is as follows:

   BBBL = KBBL x HBBL

   Description:

   BBBL = Direct Raw Material Cost
   KBBL = Quantity of Direct Raw Materials
   HBBL = Direct Raw Material Price per product

2. Direct Labor

   Direct labor is labor that produces raw materials in direct contact and processes them into finished products. Two problems often arise in factories when trying to identify this direct labor as a separate cost object. First, the same employees perform different tasks. They can quickly and frequently switch between direct labor and indirect labor, making it very difficult or even impossible to separate the costs. Second, direct labor may be an insignificant part of the total production cost, making it difficult to identify direct labor as a

separate cost. In situations where one or both situations exist, a single conversion cost classification is sufficient to make raw materials the only cost that can be traced back to the product directly. The calculation of determining the direct labor cost rate is:

TTKL = TPH / JK

Description:
TTKL= Direct Labor Rate
TPH = Rate per Day
JK = Working Hours

3. Overhead Costs

Overhead costs refer to expenses apart from direct costs of raw materials and labor. Factory overhead cost consists of all manufacturing costs that are not traced directly to specific outputs. The determination of factory overhead costs is generally carried out after the production process by specifically calculating the actual amount of factory overhead costs. However, the company also calculates factory overhead costs by budgeting the company's factory overhead costs first, carrying out production planning where in production planning factory overhead costs need to be determined. This needs to be done because factory overhead costs include production costs other than raw material costs and direct labor costs. According to Daljono (2015:15), factory overhead costs are as follows: 1) Electricity costs; 2) Auxiliary material Costs; 3) Depreciation costs; 4) Indirect labor costs. The following is a simple calculation of overhead costs:

BOP=BOPT + BOPV

Description:
BOP = Factory Overhead Cost
BOPT = Fixed Factory Overhead Cost
BOPV = Variable Factory Overhead Cost.

Characteristics of Production Costs

According to Ramdani (2020), the cost is a materialistic sacrifice that has occurred or is likely to occur in a process for a specific purpose. The characteristics of production costs according to Ramdani are as follows:

1) Continuous activities of production.
2) Mass production, aiming to fill the inventory of finished goods which is ready for sale.
3) Goods produced by the department are relatively homogeneous based on the calculation standard of production cost.
4) Production costs are charged to each unit by dividing all production costs incurred by the number of units produced.
5) Cost recording is classified based on a specific period.

Previous Research

The results of previous research used as a research reference can provide information that the Job Order Costing method is very important to be applied in a company to determine the production cost which is later related to the determination of the selling price of finished goods. This method can be used to organize and monitor cost expenditure in the company's production process.

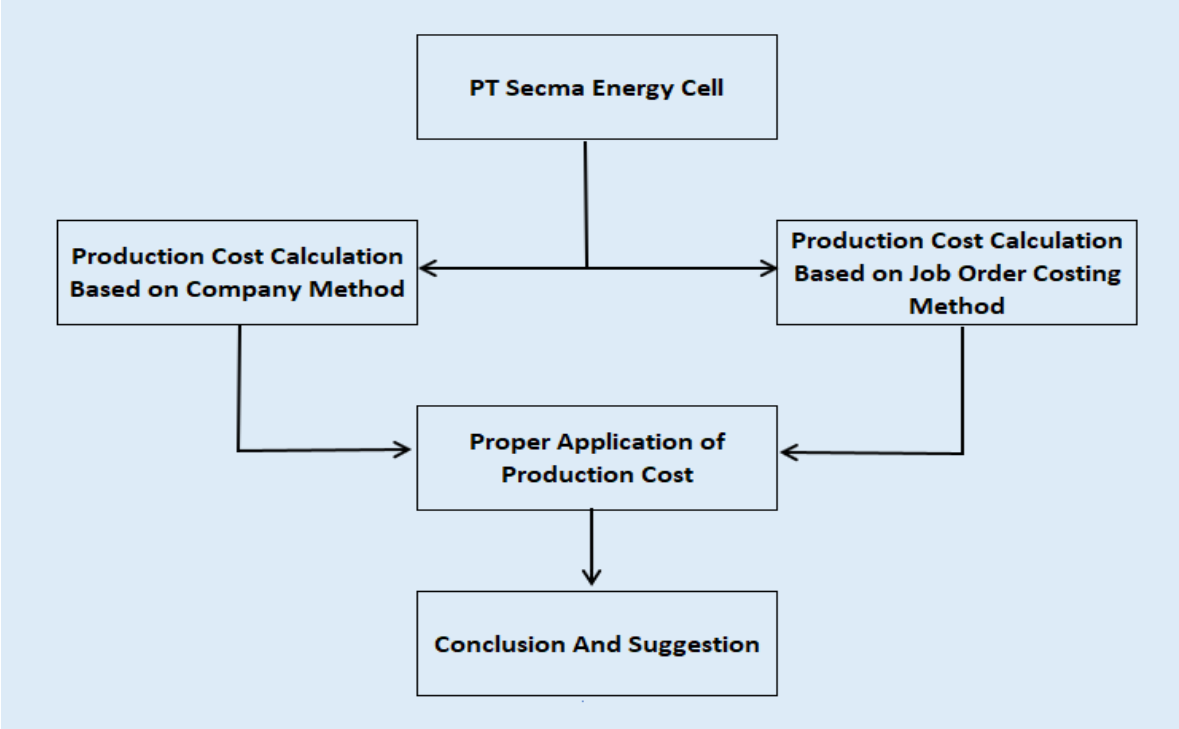
Based on research conducted by Abbas, Y.E. and Napitupulu, S. (2022), with the title Analysis of Production Cost Calculation and Determination of Product Selling Prices at Usaha Furnitur Abadi Sentosa, it was stated that some costs incurred in business operations but not included in production costs are building tax bill and building depreciation cost. As a result, the company's cost calculation does not actually follow all costing principles. It can be concluded from the results of the study that based on the full costing method there are differences in the calculation of production costs due to differences in costing from the beginning which did not consider fixed costs and variable costs.

Meanwhile, research by Hidayat, R. Taufik (2022) with the title Perhitungan Harga Pokok Pesanan (Job Order Costing) Produk "brkt number plate k56" Pada PT Rahmat Perdana Adhimetal, The research conclusion highlighted the process of determining production costs through the Job Order Costing method is lower than the calculation that has been applied by CV Globalindo Perkasa Engineering, and the impact is more competent in determining the production cost-effectively.

Furthermore, a research conducted by Bambang, Hermanto (2016) titled Perhitungan Harga Pokok Pesanan (Job Order Costing) Produk "brkt number plate k56" Pada PT Rahmat Perdana Adhimetal, it was concluded that the elements of production costs used in the company are in accordance with generally accepted rules. The next result is that the implementation of the Job Order Costing method produces better profits compared to recording using the previous method.

Framework of Thought

Sugiyono (2018: 60) explains that research examines one or more variables. If the research only deals with one or more variables independently, the author not only provides a theoretical explanation for each variable but also changes the number of variables studied. Data used in this research is divided into 2 points, they are; 1) Information on direct production costs, which include raw material costs, direct labor costs, and factory overhead costs; 2) Other relevant data related to research activities. The following is the basic concept of the author's thought framework:



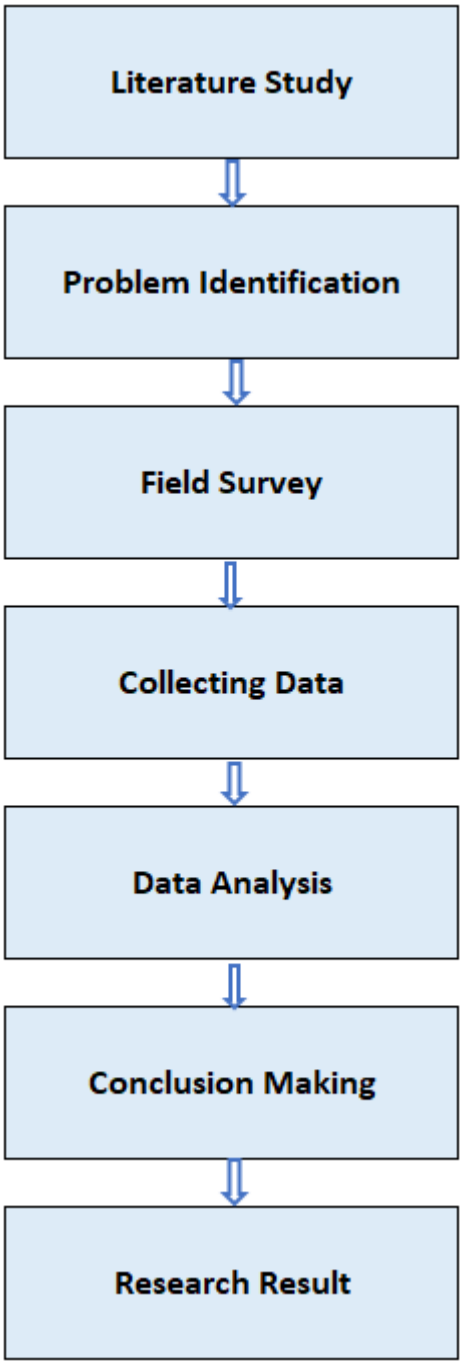
METHODOLOGY OF RESEARCH

Object of Research

The object of this research is PT Secma Energy Cell, a company engaged in manufacturing plastic bags and rolls of various types and sizes. The research took place between December 2022 and May 2023. The data taken is the October 2022 recording data.

Steps of Research

The research process can be briefly conveyed through the following flow chart:



Data Collection Techniques

Observation

The observation technique was carried out by observing the process as well as collecting evidence and records obtained such as sales transactions, purchase transactions, daily production results, and the accounting cycle applied to the object of research.

Interview

The interview was conducted by communicating directly with the relevant employees who are responsible for the data. The researcher asked several questions regarding the advantages, problems, and weaknesses of the plastic production process.

Documentation

The documentation technique was carried out by reviewing and collecting transaction documents on records and reporting in the form of proof of transactions, both income and expenses.

Literature Review

Literature review is a technique of collecting data through literature review to compare facts in the field with cost accounting theory. The researcher conducted a literature review of the objects for several months before collecting data, which was from December 2022 to February 2023.

Data Analysis Technique

In conducting the analysis, the researcher used the Descriptive Statistics method. Sugiyono (2017: 35) defines descriptive statistical analysis as an analysis that aims to determine the existence of independent variables, either only one or more variables. Based on this analysis, an overview of the company's production activities will be obtained. Information on the estimated production costs of a particular order can be used as a basis for determining the selling price that will be charged to customers. According to Mulyadi (2015: 40), information on estimated production costs is also useful as an acceptable basis for judgment in deciding the selling price of an order. After an order is received, management requests information on the actual production costs incurred in the process of fulfilling a particular order. This is conducted in order to determine the total cost of production to obtain information on the total cost of finished goods which are ready for sale. And so that the products produced are in order, the production cost of each order is collected based on the job order costing method. The actual production cost for a specific order is calculated using a specific formula.

The steps in calculating orders using the Job Order Costing method are as follows:

1) Determining Direct Raw Material Costs (BBB). Calculate the raw material cost of each product using the following equivalent formula:

$$\text{BBB percentage of raw materials used} = \frac{\textbf{Factory Overhead}}{\textbf{Estimated cost of raw materials used}} \textbf{ X 100\%}$$

2) Determining direct labor costs (TKL). Calculate direct labor costs with each product manufacturing using the following equivalent formula:

$$\text{BOP percentage of TKL} = \frac{\textbf{Estimated BOP}}{\textbf{Estimated TKL}} \textbf{ X 100\%}$$

3) Determining Factory Overhead Costs (BOP). Calculating factory overhead costs that consist of costs exclude production and electricity costs to unexpected costs using the following equivalent formula:

$$\text{BOP Rate} = \frac{\textbf{Estimated BOP}}{\textbf{Estimated number of product Unit produced}} \textbf{ X 100\%}$$

4) Determining production cost using Job Order Costing by using the following equivalent formula:

HPP = BBB + TKL + BOP

Description:
TKL : Direct Labor
JTKL: Direct Labor Hour
HPP : Production Cost
BBB : Raw Material Cost
BOP : Factory Overhead cost

RESEARCH RESULT AND DISCUSSION

Production Cost by Company

Before discussing the definition of production cost, we should first know the definition of process. Process refers to the means, methods, and techniques where the actual sources are direct labor, direct raw materials, overhead costs and other costs that may be incurred in the production process in producing a finished good. At the same time, production itself is an activity to create an object. Basically, the production process, production costs and product selling prices are closely related in determining the profitability of the company. The product selling price must cover all costs as much as possible, therefore all costs that include production expenses are added to the selling price with a reasonable profit, which means that the selling price is in accordance with the production cost plus markup (Simamora, 2012). The following is a template for calculating production costs according to the method applied by the company so far

Table 4.1 Percentage of Budget Implementation

Description	Percentage
Raw Material Costs	45%
Direct Labor Costs	15%
Factory Overhead Costs	10%
Estimated Production Cost Budgeting	**70%**
Estimation L/R	**30%**

Source: PT Secma Energy Cell, Gresik, 202

Calculation of Raw Material Costs

According to Nafarin (2014: 202), raw materials are all the main ingredients or staples and are components related to the production process of a product. Plastics are produced using the main raw material, namely plastic seeds with various types and characteristics. The following are the raw materials used to produce plastics:

Table 4.2 Types of Raw Material Used

Types of Raw Material		
No.	**Types**	**Characteristics**
1	LLDPE Asrene 1810T	Linear Low-Density Polyethylene
2	LLDPE Innoplus W77	Linear Low-Density Polyethylene
3	LLDPE Sabic 118 WM	Linear Low-Density Polyethylene
4	LLDPE Titanvene 0209 SR	Linear Low-Density Polyethylene
5	HDPE Asrene UF 5205 H	High-Density Polyethylene
6	HDPE Titanvene 5301 AA	High-Density Polyethylene
7	PP Trilene HF 10 TQ	PolyPropylene
8	Afal PE, HD, PP	Rejected products that are reprocessed into plastic beans

Source: PT Secma Energy Cell, Gresik, 2021

Based on Table 4.2 above, it is known that several types and characteristics of raw materials are usually used by PT Secma Energy Cell to produce a product. Some types of raw materials have different characteristics and functions. LLDPE is usually used for plastic bags in general because the raw material is more flexible. However, because the four types of LLDPE have different qualities, the calculation of production costs focused on each order will greatly affect the profitability of the company. Furthermore, HDPE material which has stronger characteristics will usually be used for special orders that are not possible to use LLDPE material. For example, customers who order food-grade packing that requires inner and outer plastic packaging in their products. And the last is the type of PP raw material, where this type is rarely produced because PP material is also specialized for certain orders. PP material has characteristics that almost match LLDPE material, but PP material is more rigid and stronger so usually if the customer requires strong plastic that is not easy to leak and is willing to pay a little more expensive, then the production will be carried out using PP material. Usually, those who use PP materials are companies that produce crackers where they need large sizes of plastic that are of good quality and strong, and the plastics ensure the product remains safe until the targeted time limit.

Afal PE, HD and PP are reused raw materials. In the production process, it is natural to produce rejected materials, but the rejects produced from producing plastic can be recycled to become raw materials again. This is very helpful in supporting production costs because, in almost 100% of the used raw materials, there is no wasted raw material that causes production costs to swell. In this case, the researcher takes the production data from LLDPE material where this type is the most varied and everyday production is definitely carried out because 85% of incoming orders will be produced using LLDPE raw materials. The following is the calculation of data taken from daily records.

Table 4.3 Calculation of raw material for plastic bags by the company

For Producing Plastic Bags			
Type of Raw Material	**Quantity (kg)**	**Price (IDR)**	**Total (IDR)**
LLDPE Asrene 1810 T	69.700,00	20.313,00	**1.415.816.100,00**
Afal PE	12.200,00	18.222,00	**222.308.400,00**
Total Raw Material Costs			**1.638.124.500,00**
45% Charge			**737.156.025,00**

Source: PT Secma Energy Cell, Gresik, 2021

Based on Table 4.3 above, it is known that the amount of raw material costs required to produce plastic bag orders in 1 month is IDR1,638,124,500.00. Meanwhile, the calculation of raw material costs used to work on roll plastic orders can be seen in the following table.

Table 4.4 Calculation of raw material for plastic roll by the company

For Producing Plastic Roll			
Type of Raw Material	**Quantity (kg)**	**Price (IDR)**	**Total (IDR)**
LLDPE Innoplus LL7410D	30.000,00	20.319,00	**609.570.000,00**
Afal PE	3.500,00	18.222,00	**63.777.000,00**
Total Raw Material Costs			**673.347.000,00**
45% Charge			**303.006.150,00**

Source: PT Secma Energy Cell, Gresik, 2021

Based on Table 4.4 above, it is known that the total raw material costs necessary for fulfilling plastic roll orders in a month amount to IDR 673,347,000.

Calculation of Direct Labor Cost

According to Mulyadi (2013: 343), costs related to salaries to pay all practically identifiable workers are referred to as labor costs. All compensation paid to all employees by the company is a labor cost. One important factor in determining the level of employee productivity for a company, whether successful or not, is labor. To overcome various pressing issues, companies need strong perseverance. To ensure the business can continue to grow, all operational, financial, and product-related issues must be handled according to the appropriate calculations. The purpose of labor productivity is to measure labor efficiency. Therefore, a company needs good governance in classifying labor costs.

Table 4.5 List of Labor

List of Labor		
No.	**Employee Position/Duties**	**Number of Employees**
1	Plant manager	1
2	Head of section	2
3	Administration	5
4	Driver	5
5	Raw material melting	8
6	Quality checking	8
7	Cutting	9
8	Packing	9
9	Security	9
10	General	6
	Total Employees	62

Source: PT Secma Energy Cell, Gresik, 2021

Based on Table 4.5, it is known that PT Secma Energy Cell has a total of 62 employees, of which 34 are direct workers who are divided into several different tasks and working hours, and 28 workers who are not in direct contact with the production process.

Table 4.6 Calculation of Direct Labor Cost for Plastic Bags

Calculation of Direct Labor Cost for Plastic Bags				
Employee Duties	**Number of Employees**	**Wage per Day (IDR)**	**Working days**	**Total Labor Costs (IDR)**
Raw material melting	4	166.000,00	23	15.272.000,00
Quality checking	2	185.000,00	18	6.660.000,00
Cutting	4	170.000,00	26	17.680.000,00
Packing	2	170.000,00	12	4.080.000,00
Total Direct Labor Cost				**43.692.000,00**
15% Charge				**6.553.800,00**

Source: PT Secma Energy Cell, Gresik, 2021

According to the data presented in the table above, it can be seen that the direct labor cost for producing plastic bags is IDR43,692,000. As for roll plastic orders, it can be seen in Table 4.7 as follows:

Table 4.7 Calculation of Direct Labor Cost for Plastic Roll

Direct Labor Cost for Plastic Roll				
Employee Duties	**Number of Employees**	**Wage per Day (IDR)**	**Working days**	**Total Labor Costs (IDR)**
Raw material melting	4	178.000,00	22	15.664.000,00
Quality checking	2	185.000,00	18	6.660.000,00
Cutting	4	172.000,00	25	17.200.000,00
Packing	2	172.000,00	10	3.440.000,00
Total Direct Labor Cost				**42.964.000,00**
15% Charge				**6.444.600,00**

Source: PT Secma Energy Cell, Gresik, 2021

According to the provided table, it is evident that the direct labor cost for producing plastic rolls is IDR42.964.000.

Finished Goods Production Output

According to Mulyani and Herawati (2016), a process is a way, method, or technique by which all available resources including labor, materials, supplies, and funds are used to produce certain results. In contrast, the purpose of production itself is to enable or facilitate the use of certain goods or services. Before the product is distributed to customers, the processing of unfinished goods is first carried out. The finished goods production process that has been implemented by the company is expected to help achieve an optimal goal.

Plastic production is carried out according to the size ordered by the customer, therefore there are many different size variations in the production process every day. The following is a record of production results for 1 month:

Table 4.8 Production Output for 1 Month

No.	**Type**	**P**laztic Size	Plastic Roll (Kg)	Plastik Bag (Kg)	Rejected (Kg)	
					Production	Gross
1	PE	011,5x18,5x22,5	0	1133,68	0,02	**0,00**
	PE	0,08x43x86	0	2927,82	5,86	**0,07**
	PE	0,04x10x21	0	1263,84	2,53	**0,03**
	PE	0,03x17x90	0	1191,04	0,02	**0,00**
2	PE	0,03x23x115	0	1040,28	5,20	**0,06**
	PE	0,03x22x32	0	113,18	0,57	**0,01**
3	HD	0,02x50x80	0	1153,04	0,02	**0,00**
	HD	0,02x16x22	0	1075,84	5,38	**0,06**
	HD	0,02x16x22	0	572,42	2,86	**0,03**
4	PE	0,07x35x54	0	551,4	0,01	**0,00**
	PE	0,08x35x55	0	1304,78	0,03	**0,00**
5	PE	0,03x45x75	821,9	1643,8	0,03	**0,00**
	PE	0,025x12x24	1763,35	3526,7	0,07	**0,00**
	PE	0,03x25x25	166,68	333,36	1,67	**0,02**
	PE	0,10x26x37	149,07	298,14	1,49	**0,02**
8	PE	0,05x73x57	571,51	1143,02	0,02	**0,00**
	PE	0,05x68/34x60	661,44	1322,88	2,65	**0,03**
	PE	0,09x32,5x47	128,72	257,44	1,29	**0,02**
9	PE	0,07x35x54	665,55	1331,1	6,66	**0,08**
	PE	0,062x50x40	0	129,48	0,65	**0,01**
	PE	0,03x45x73	0	115,83	0,58	**0,01**
10	PE	0,025x12x24	0	204,8	1,02	**0,01**
	PE	0,03x25x43	0	225,88	1,13	**0,01**
	PE	0,08x25x37	0	147,32	0,74	**0,01**
11	PE	0,10x25x30	648,62	1297,24	3,89	**0,05**
	PE	0,10x26x37	61,61	123,22	0,62	**0,01**
	PE	0,04x77x52	560,69	1121,38	0,02	**0,00**
12	HD	0,05x73x57	127,7	255,4	1,28	**0,02**
	HD	0,054x40x80	675,14	1350,28	0,03	**0,00**
	HD	0,035x40x100	700,41	1400,82	0,03	**0,00**
12	PE	0,025x45x65	520,05	1040,1	5,20	**0,06**
	PE	0,35x14x14	51,36	102,72	0,51	**0,01**
	PE	0,04x18x25	125,47	250,94	1,25	**0,02**
	PE	0,08x20x25	132,22	264,44	1,32	**0,02**
14	PE	0,04x18x25	0	1306,76	0,03	**0,00**
	PE	0,35x14x14	0	2350,92	0,05	**0,00**
	PE	0,05x27x45	0	226,54	0,91	**0,01**
	PE	0,062x25x40	0	1234,16	1,23	**0,01**
15	PE	0,07x80/40x80	0	1322,32	1,32	**0,02**
	PE	0,04x50x100	0	1664,50	1,66	**0,02**
16	PE	0,025x50x50	582,99	1165,98	2,33	**0,03**
	PE	0,03x45x75	680,19	1360,38	2,72	**0,03**
	PE	0,10x35x55	639,61	1279,22	1,28	**0,02**
	PE	0,06x35x32	659,41	1318,82	1,32	**0,02**

17	PE	0,05x15x30	630,56	1261,12	1,26	**0,02**
	PE	0,04x18x35	755,07	1510,14	1,51	**0,02**
20	PE	0,05x22x40	5610,6	11221,20	0,22	**0,00**
	PE	0,05x75x90	0	1176,84	3,53	**0,04**
	PE	0,062x60x90	0	1292,28	0,03	**0,00**
22	HD	0,03x70x55	1330,10	0	0,00	**0,00**
	HD	0,03x45x75	256,88	0	0,00	**0,00**
	HD	0,06x35x32	11392,3	0	0,00	**0,00**
24	PE	0,04x15x30	0	1330,10	0,03	**0,00**
	PE	0,06x15x25	0	256,88	0,01	**0,00**
	PE	0,05x18x130 0	0	11392,3	0,23	**0,00**
	PE	0,06x21x40	0	1263,70	0,03	**0,00**
25	PE	0,05x22x40	5732,4	11464,8	0,23	**0,00**
	PE	0,05x75x90	942,385	1884,77	0,04	**0,00**
26	PE	0,04x10x21	844,93	1689,86	0,03	**0,00**
	PE	0,03x17x90	1170,84	2341,68	2,34	**0,03**
	PE	0,03x23x115	640,52	1281,04	0,03	**0,00**
	PE	0,03x22x32	1110,33	1293,70	2,59	**0,03**
27	PE	0,02x50x80	1264,4	2528,80	0,05	**0,00**
	PE	0,02x16x22	0	192,48	0,96	**0,01**
	PE	0,02x16x22	0	1146,36	1,15	**0,01**
28	PE	0,07x35x54	0	1134,98	2,27	**0,03**
	PE	0,08x35x55	0	1890,34	3,78	**0,05**
30	PE	0,03x45x75	0	20,80	0,10	**0,00**
	PE	0,025x12x24	0	1123,08	0,02	**0,00**
	PE	0,03x25x25	0	151,04	0,76	**0,01**
	PE	0,10x26x37	0	1263,70	0,03	**0,00**
	PE	0,05x73x57	0	1464,8	0,03	**0,00**
	TOTAL		**42775,005**	**105.020,00**	**88,73**	**1,65**

Source: PT Secma Energy Cell, Gresik, 2021

From the table above, it can be seen that the production yield on plastic rolls is 42,775,005 kg, and for bag plastic is 105,020 kg. The rejected production materials that will later be recycled into plastic seed raw materials are 88,73 kg and 1,65 kg for plastics that do not pass Quality Control in the process after production.

Calculation of Factory Overhead Costs

Research conducted by Sofia Prima Dewi (2015) concluded that factory overhead costs are all costs of the process of producing an item but cannot be identified specifically and economically.

Table 4.9 Calculation of Overhead Cost of Plastic Bags By the Company

FACTORY OVERHEAD COST	
Types of Costs	**(IDR)**
Employee	**4,800,000.00**
Operational Meals	**2.265.300,00**
Employee's BPJS (Insurance)	**3.526.000,00**
Plastic Sales Goods Delivery	**1.160.000,00**

Production Requirements	**1.440.000,00**
Spare parts for cutting production machines	**6.995.614,00**
Depreciation of Cutting Machine	**2.622.000,00**
Operational Gasoline/Diesel	**3.145.500,00**
Operational Vehicle Service	**474.000,00**
Documents Delivery	**1.060.000,00**
Office Stationery	**144.000,00**
Printing	**10.361.972,00**
Pellet Afal	**12.801.200,00**
Power/Electric	**5.994.071,00**
Regional Drinking Water Company/Underground Water	**470.000,00**
Total Overhead Costs for 1 Month	**57.259.657,00**
10% Charge	**5.725.965,70**

Source: PT Secma Energy Cell, Gresik, 2021

Table 4.9 above shows that factory overhead costs according to the company's budget and expenses for producing plastic bags are IDR57.259.657.

Table 4.10 Calculation of Overhead Cost of Plastic Rolls By the Company

FACTORY OVERHEAD COST	
Type of Costs	**(IDR)**
Employee	**4.800.000,00**
Operational Meals	**2.265.300,00**
Employee's BPJS (Insurance)	**3.526.000,00**
Plastic Sales Goods Delivery	**1.160.000,00**
Production Requirements	**3.903.735,00**
Spare parts for Roll Production Machine	**25.440.000,00**
Depreciation of Roll Machine	**2.422.000,00**
Operational Gasoline/Diesel	**3.145.500,00**
Operational Vehicle Service	**550.000,00**
Documents Delivery	**1.180.000,00**
Office Stationery	**113.000,00**
Printing	**26.400.000,00**
Pellet Afal	**62.901.685,00**
Power/Electric	**5.994.071,00**
Regional Drinking Water Company/Underground Water	**470.000,00**
Total Overhead Costs for 1 Month	**144.271.291,00**
10% Charge	**14.427.129,10**

Source: PT Secma Energy Cell, Gresik, 2021

Table 4.10 above shows that factory overhead costs according to the company's budget and expenses for producing plastic rolls are IDR14.427.129,10.

Job Order Costing Definition

Generally, the Job Order Costing method is an order-based costing method where its application is based on separate and

distinct jobs. To determine overhead costs, it is necessary to classify the costs incurred specifically. According to research conducted by Hansen & Mowen (2009) which was then translated by Kwary, it was concluded that the Job Order Costing method is an application of cost calculation that will later be charged to the unit of production for each job. The Job Order Costing method is usually used by companies that produce various sizes and types of goods. Production costs are classified based on their direct or indirect association with the product being manufactured. Direct production costs are those directly attributable to the production of a specific order, taking into account the actual costs accrued, and so on.

Raw Material Costs Based on *Job Order Costing Method*

Table 4.11 Calculation of Raw Material Cost of Plastic Bags

Raw Material Cost For Producing Plastic Bags			
Type of Raw Material	**Quantity (kg)**	**Price (IDR)**	**Total (IDR)**
LLDPE Asrene 1810 T	69.700,00	20.313,00	**1.415.816.100,00**
Afal PE	12.200,00	18.222,00	**222.308.400,00**
Total Raw Material Costs			**1.638.124.500,00**
Produksi Output for 1 Month			**105.020,00**
Raw Material Costs per-kg			**15.598,21**

Source: PT Secma Energy Cell, Gresik, 2021 (Processed by the researcher)

Table 4.12 Calculation of Raw Material Cost of Plastic Rolls

Raw Material Cost For Producing Plastic Plastik Rolls			
Type of Raw Material	**Quantity (kg)**	**Price (IDR)**	**Total (IDR)**
LLDPE Innoplus LL7410D	30.000,00	20.319,00	**609.570.000,00**
Afal PE	3.500,00	18.222,00	**63.777.000,00**
Total Raw Material Costs			**673.347.000,00**
Production Output for 1 Month			**42.775,00**
Raw Material Costs per-kg			**15.741,60**

Source: PT Secma Energy Cell, Gresik, 2021 (Processed by the researcher)

From the processed data in the table above, it shows that the raw material requirements for producing plastic bags and plastic rolls in the period of 1 month are IDR23,11,471,500.00 with a total production output of 147,795 Kg. Thus, the cost of raw materials is IDR15,639.71 per kg.

Labor Cost Based on Job Order Costing Method

Table 4.13 Calculation of Labor Cost of Plastic Bags

Direct labor costs for Producing Plastic Bags				
Employee Duties	**Number of Employees**	**Wage per Day (IDR)**	**Working days**	**Total Labor Costs (IDR)**
Raw material melting	4	166.000,00	23	15.272.000,00
Quality checking	2	185.000,00	18	6.660.000,00
Cutting	4	170.000,00	26	17.680.000,00
Packing	2	170.000,00	12	4.080.000,00

Total Direct Labor Cost	**43.692.000,00**
Production output for 1 Month	**105.020,00**
Direct labor Cost per kg	**416,04**

Source: PT Secma Energy Cell, Gresik, 2021 (Processed by the researcher)

Table 4.14 Calculation of Labor Cost of Plastic Roll

Direct labor costs for Producing Plastic Roll				
Employee Duties	**Number of Employees**	**Wage per Day (IDR)**	**Working days**	**Total Labor Costs (IDR)**
Raw material melting	4	178.000,00	22	15.664.000,00
Quality checking	2	185.000,00	18	6.660.000,00
Cutting	4	172.000,00	25	17.200.000,00
Packing	2	172.000,00	10	3.440.000,00
Total Direct Labor Cost				**42.964.000,00**
Production output for 1 Month				**42.775,00**
Direct labor Cost per kg				**1.004,42**

Source: PT Secma Energy Cell, Gresik, 2021 (Processed by the researcher)

From the processed data in the table above, it shows that the direct labor cost requirement for producing plastic bags and plastic rolls for a period of 1 month is IDR86,656,000.00 with a total production output of 147,795 Kg. Thus the cost of raw materials becomes IDR586.33 per kg.

Factory *Overhead* Costs Based on Job Order Costing *Method*

Table 4.15 Calculation of Factory *Overhead* Cost

FACTORY OVERHEAD COST			
TYPES OF COSTS	**Bags (IDR)**	**Rolls (IDR)**	**Total (IDR)**
Employee	4.800.000,00	4.800.000,00	9.600.000,00
Operational Meals	2.265.300,00	2.265.300,00	4.530.600,00
Employee's BPJS (Insurance)	3.526.000,00	3.526.000,00	7.052.000,00
Plastic Sales Goods Delivery	1.160.000,00	1.160.000,00	2.320.000,00
Production Requirements	1.440.000,00	3.903.735,00	5.343.735,00
Spare parts for cutting production machines	6.995.614,00	25.440.000,00	32.435.614,00
Depreciation of Cutting Machine	2.622.000,00	2.422.000,00	5.044.000,00
Operational Gasoline/Diesel	3.145.500,00	3.145.500,00	6.291.000,00
Operational Vehicle Service	474.000,00	550.000,00	1.024.000,00
Documents Delivery	1.060.000,00	1.180.000,00	2.240.000,00
Office Stationery	144.000,00	113.000,00	257.000,00
Printing	10.361.972,00	26.400.000,00	36.761.972,00
Pellet Afal	12.801.200,00	62.901.685,00	75.702.885,00
Power/Electric	5.994.071,00	5.994.071,00	11.988.142,00
Regional Drinking Water Company/Underground Water	470.000,00	470.000,00	940.000,00

Total Overhead Costs for 1 Month	57.259.657,00	144.271.291,00	201.530.948,00
Production Output for 1 Month (Kg)	105.020,00	42.775,00	147.795,00
TOTAL OVERHEAD Costs Per UNIT/ Per Kg	**545,23**	**3.372,79**	**3.918,02**

Source: PT Secma Energy Cell, Gresik, 2021 (processed by the researcher)

Based on the overhead cost in Table 4.15 above, It can be seen that the cost requirement in 1 month is IDR201,530,948.00 and the Plastic Production Cost per kg is IDR3,918.02.

Realization of Determination of Production Cost

Each company certainly has its own mechanisms and procedures regarding the determination of production costs, but here the researcher wants to analyze the effectiveness of the calculation of production costs that have been applied by PT Secma Energy Cell, namely the calculation of costs based on an estimated 70% of the total costs incurred by the company. Below is a contrast between the company's computed costs and those calculated using the Job Order Costing method.

Table 4.16 Determination of Production Cost By the Company

Determination of Production Cost By the Company		
Description	**Bags**	**Rolls**
Total Raw Material Costs	1.638.124.500,00	**673.347.000,00**
Total Direct Labor Costs	43.692.000,00	**42.964.000,00**
Total Overhead Costs	57.259.657,00	**144.271.291,00**
Total Production Costs	1.739.076.157,00	**860.582.291,00**
70% Production Cost charge	**1.217.353.309,90**	**602.407.603,70**

Source: PT Secma Energy Cell, Gresik, 2021 (processed by the researcher

Table 4.17 Determination of Production Cost Based on Job Order Costing Method

Determination of Production Cost Based on Job Order Costing Method		
Description	**Bags**	**Rolls**
Total Raw Material Costs	1.638.124.500,00	673.347.000,00
Total Direct Labor Costs	43.692.000,00	42.964.000,00
Total Overhead *Costs*	57.259.657,00	144.271.291,00
Total Production Costs	1.739.076.157,00	860.582.291,00
Production Output of Finished Products (Kg)	105.020,00	42.775,00
Production Cost Per Kg	**16.559,48**	**20.118,81**

Source: PT Secma Energy Cell, Gresik, 2021 (processed by the researcher)

Table 4.16 and Table 4.17 explain the differences in the application of production cost calculations, where it will be difficult to determine production costs if it uses the calculation of Table 4.12. Therefore, calculations using the Job Order Costing method are considered more effective for determining the costs incurred by the company so that administrative records are more focused and more organized in accordance with cost accounting theory.

CONCLUSION

According to the results of research that has been done on the application of the Job Order Costing method in determining production costs, the authors can draw several conclusions as follows:

1) After conducting the calculations, it can be concluded that estimating the production cost of an order serves as a foundation for establishing the selling price that will later be charged to the customer who placed the order. In addition, information on estimated production costs can also be used as a basis for considering whether or not an order is accepted. Applying production costs will help analyze the expenses incurred.
2) Profit is the main goal of every company in running a business operation, so the transactions that occur should be controlled properly. Cost control can be carried out by recording account items more specifically, especially those related to production costs, because arguably the costs incurred when producing goods are one of the largest costs in company transactions.
3) PT Secma Energy Cell still does not apply the Job Order Costing method because the company has set a predetermined price, with a markup of 70% for each kilogram. As a result, the selling price for each product in each incoming order has been calculated in advance.
4) The outcomes of the calculation indicate that the manufacturing expenses when employing the Job Order Costing method are IDR16,559.48/Kg for plastic bags and IDR20,118.81 for plastic rolls.
5) Based on the calculations that have been presented by the researcher, it can be used as a reference and guideline by the company in determining production costs and determining competitive selling prices, which in turn are expected to increase sales turnover which leads to an increase in company business profits.
6) It is important to apply the Job Order Costing calculation method to products that have many variations and the rhythm of fluctuating raw material prices, so that they can be taken into consideration in making decisions to determine production costs as well as selling prices.

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