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**Abstract** - This study aims to see whether controlling raw material inventory at PT. Plasticolors Eka Perkasa are optimal. This research uses descriptive research and the analytical tool used is to use the EOQ method. Sources of data used in this study are secondary data and library research. Data collection is conducted from January to December 2018.

The results showed that the number of raw material purchases according to the EOQ method during the January-December 2018 period was 1,639kg, order frequency was 2 times, security inventory was 1,155kg, reorder point was 1.275kg, maximum inventory was 2,794kg and the total cost of raw material inventory if calculated using the EOQ method is Rp. 39.114.244, - and when calculated in company policy is Rp. 39.120.095, - so from the results of the total value of these costs, there will be a total cost savings if using the EOQ method of Rp. 5.852. -

Based on these results that in the policy of controlling raw material inventories in the company PT. Plasticolors Eka Perkasa is not optimal because the total cost incurred is greater than using the EOQ method Keywords: Inventory, Raw Materials, EOQ Method

*Abstrak*– Penelitian ini bertujuan untuk melihat apakah pengendalian persediaan bahan baku pada PT. Plasicolors Eka Perkasa sudah optimal. Penelitian ini menggunakan jenis penelitian deskriptif dan alat analisis yang digunakan adalah dengan menggunakan metode EOQ. Sumber data yang digunakan dalam penelitian ini adalah dengan data sekunder dan penelitian kepustakaan. Pengumpulan data dilakukan mulai dari bulan Januari-Desember 2018.

Hasil penelitiann menunjukan bahwa jumlah pembelian bahan baku menurut metode EOQ selama periode Januari-Desember 2018 sebanyak 6.067kg, frekuensi pemesanan sebanyak 2 kali, persediaan pengamanan sebanyak 1,155kg, titik pemesanan ulang sebanyak 1.275kg, persediaan maksimum 2,794kg dan total biaya persediaan bahan baku jika dihitung menggunakan metode EOQ adalah sebesar Rp. 39.114.244- dan bila di hitung dalam kebijakan perusahaan adalah sebesar Rp. 39.120.096,- sehingga dari hasil nilai total biaya tersebut maka terdapat penghematan total biaya jika menggunakan metode EOQ sebesar Rp. 5.852,-

Berdasarkan hasil penelitian tersebut bahwa dalam kebijakan pengendalian persediaan bahan baku pada perusahaan PT. Plasticolors Eka Perkasa belum optimal karena total biaya yang dikeluarkan lebih besar di bandingkan dengan menggunakan metode EOQ

Kata kunci : Persediaan, Bahan Baku, Metode EOQ

## I. PRELIMINARY

Today's business world continues to compete to create a variety of consumer needs that are getting higher and smarter in choosing their needs. Starting from the middle class to the upper class, they always demand the best quality and economical prices. The economy has experienced quite significant changes, especially in developing countries such as Indonesia, which are increasingly experiencing improvements in both the economic and development sectors.

PT.Plasticolors Eka Perkasa is a company that makes orders based on orders from consumers, this is often called make to order. PT.Plasticolors Eka Perkasa does not have forecasting orders from consumers, so the company does not have a purchase forecast in ordering raw materials. From the absence of forecasting the purchase of raw materials, the occurrence of excess raw materials (over stock) and raw materials not available (out stock) of raw materials stored in this company. With the over stock, the company bears a lot of costs for the cost of storing goods, as well as disaster risks. And for out-stock, the company bears the delay in the production process which impacts the time of receipt of goods by consumers, and if the goods are not delivered on time, consumers will be disappointed and even give a fine to PT.Plasticolors Eka Perkasa.

From the procurement of uncertain raw materials, it has resulted in production delays to delivery delays to consumers which will decrease the performance of PT.Plasticolors Eka Perkasa.

From the above background, the researcher will conduct research with the title "Analysis of Raw Material Inventory Control using the Economic Order Quantity (EOQ) method to Achieve the Minimum Cost and Smooth Production Process at PT. Plasticolors Eka Perkasa ".

## **1.1.** Formulation of the problem

Based on the background that has been presented above, the problem formulation is as follows:

- 1. Can the purchase of raw materials using the EOQ method be applied to PT Plasticolors Eka Perkasa?
- 2. How do you control raw materials at PT Plasticolors if you already use EOQ?
- 3. How many times have PT.Plasticolors made reorder points of raw materials using the EOQ method
- 4. What is the number of Order Frequencies at PT.Plasticolors?

#### 1.2. Research purposes

The objectives of the research carried out for empirical evidence are as follows:

- 1. To find out whether the purchase of raw materials using the EOQ method is appropriate if it is implemented at PT Plasticolors Eka Perkasa?
- 2. To find out the total inventory cost of the company PT Plasticolors Eka Perkasa using the EOQ method.
- 3. To find out the reorder point of raw materials by PT.Plasticolors Eka Perkasa using the EOQ method.
- 4. To find out the number of Order Frequencies using the EOQ method at PT Plasticolors Eka Perkasa.

# II. LITERATURE REVIEW

#### 2.1. Operational Management

The definition of Operational Management is a series of activities that create goods and services through changes from inputs to outputs. The activity of making goods and services occurs in all sectors of the organization. Production activities make things very obvious in manufacturing companies, where we can see making real things like Sony TVs or Ford Bronco

## 2.2. Inventory Management

The definition of inventory has a different meaning for each company. This definition depends on the business and activities of the company. According to Harrison (2012: 339), which is translated by Gania (2015), the definition of inventory is: "Inventory is an asset that is (a) stored for sale in the company's tour operations (b) in the production process for sales or (c) in the form of materials or equipment to be consumed during the production process or service delivery ".

# 2.3. ABC analyst

To determine the annual dollar value of volume in the ABC analysis, we measure the annual demand for each item of supply times the cost per unit. Class A items are inventories with a high annual monetary value. Such inventory items may only represent about 15% of the total inventory items, but represent 70% to 80% of the total inventory cost. Class B inventory items are those items with moderate annual volume (in money value). These inventory items may represent only 30% of the total inventory and 15% to 25% of its value. Inventory items with a small annual volume, called class C, represent only 5% of the total annual volume but approximately 55% of the total inventory.

# 2.4. Basic Model of Economic Order Quantity (EOQ)

The EOQ method is a method that aims to obtain a fixed order level. Because it aims to get a fixed order size level, this method seeks to get an optimal order size level, the amount refers to the money demand faced by the company. In this calculation, the waiting factor (Lead Time) is calculated to place the order point back based on the optimal amount that has been calculated beforehand so that orders arrive on time to anticipate emerging requests.

# 2.5. Production Order Quantity Model

In the previous inventory model, we assumed that all orders were received at one time. However, and certain times where a company can receive inventory throughout a period. This situation requires the use of a different model, that is, one that does not require the assumption of instantaneous order acceptance. This model can be applied when inventory continuously flows or builds up over a period of time after an order is placed or when products are produced and sold at the same time. With these circumstances, we can enter a record of the level of production or supply flow every day, and the level of demand each day.

## 2.6. Quantity Discounts Model

To increase sales, many companies offer discounted prices for their customers. This Quantity Discount is simply a reduction in price (P0 for items purchased in larger quantities. It is not too broad if there is a list of discounts with various discounts for large orders. A list of discounts that are commonly used.

# 2.7. The relationship between research variables

The research variable is the object of research which becomes the research point of attention. In this study, the variables are:

The actual use of raw materials is calculated in Kg units

Raw material inventory, calculated in units of Kg.

EOQ (Economic Order Quantity):

a) Storage Costs

- b) Order Fee
- c) Reorder point
- d) Ordering Fee (safety stock)

This study uses independent variables as observed variables and becomes the basis for calculations. Independent variables are variables that do not have a relationship between one variable and another in terms of relationship, influence or comparison. The independent variable in this study is the supply of raw materials. In measuring the supply of raw materials, calculations using certain methods are used.

## 2.1. Hypothesis Development

This research is a descriptive study that aims to explain and describe the independent variables so that in this study, the formulation of a research hypothesis is not required.

## 2.2. Research Conceptual Framework

The relationship between the two types of costs (order costs and storage costs), with the number of orders can be seen in the following figure:

Figure 2.4. EOQ Raw Material Control Methods

Source: Heizer and Render



The picture above shows that Heizer and Render (2010: 93-94) if the order quantity increases, the storage costs will also increase, but the ordering costs are reduced. Conversely, if the number of orders decreases, the storage costs will also decrease but the order costs will increase. The optimum order quantity occurs at the point where the storage cost curve and the ordering cost curve intersect.

# III. RESEARCH METHOD

#### 3.1. Research Strategy

This type of research is descriptive quantitative by describing how the company applies raw material inventory control through the data obtained and analysis using the Economic Order Quantity method. So this research method measures or calculates the optimal inventory of a product whose results are presented in the form of numeric data and interpreted in qualitative sentences. This type of research is quantitative research

### **3.2. Population and Sample**

According to Azwar (2012: 6) Population is the source of data in a study that has a large number and area. The entire amount consisting of objects or subjects that have certain characteristics and qualities that are determined by the researcher to be investigated and

then draw conclusions. The population used in this research is raw material inventory data and raw material inventory costs at PT. PEP since 2018-2019

. The sample is part of a number of characteristics possessed by the population used for Sujarweni's research (2014: 65), while the sample used in this study is the purchase of raw materials for one year, from November 2018 to November 2019.

## 3.3. Data Analysis Methods

The data analysis used in this study are:

# 3.3.1. Data Processing Methods

The data obtained from the company is in the form of data regarding the raw material procurement system which includes the purchase and use of raw materials which will be analyzed quantitatively and described in the form of a description. In formulating the raw material inventory control model, the data is processed using the QM software program with the aim of simplifying the calculation of the collected data.

# 3.3.2. Data Presentation Methods

In this study, the presentation of data used by researchers using tables. This aims to make it easier for researchers to understand and analyze the data that has been processed by researchers.

# 3.3.2.1. Data Analysis Tools

According to Heizer & Render (2016: 561), the EOQ (economic order quantity) model is one of the inventory control techniques that can minimize the total cost of ordering and storage. The inventory model aims to minimize total costs. The most significant costs are ordering costs and storage costs which can be formulated as follows:

1. The optimal number of orders

The optimal order size will appear at a point where the order cost point is the same as the storage cost, so that after deriving the equation for the optimal order quantity, we get the EOQ formula, namely:

$$EOQ = \sqrt{\frac{2.D.S}{H}} I N D O N E S I$$

D = The amount of raw materials needed in 1 year

S = Ordering costs (price of raw materials, shipping, handling costs)

H = Storage cost per pcs

- 2. Annual ordering fee =  $\frac{D}{O}S$
- 3. Annual storage fee =  $\frac{Q}{2}H$
- 4. Total cost

The optimal order quantity is determined when the ordering costs are the same as the storage costs, namely:

$$\mathrm{TIC} = \frac{D}{Q}S + \frac{Q}{2}H$$

5. Maximum Inventory

To determine the minimum and maximum points, you can use the following formula:

*Maximum Inventory* = Safety Stock + EOQ Information : EOQ = Optimal purchase quantity (kg) TIC = Total inventory cost (Rp / kg) D= Quantity of usage per period (kg/tahun) S = Cost per order (Rp / kg) H= Storage cost per unit per period (IDR / kg/year)

Q= Average raw material usage per day (kg/day)

N= Number of orders expected (times)

6. Safety stock

According to Heizer & Render (2016: 567), safety stock is an additional supply that allows inequality in demand. Safety stock can be calculated by the formula:

 $SS = \alpha XZ$ Information :

SS = Safety stock

 $\alpha$  = Standard deviation

z = The security factor is formed on the basis of the company's capabilities.

7. Reorder Point

L

According to Heizer and Render (2016: 567), reorder or reoder point is the level of inventory where action is taken to refill the inventory of goods, so the decision when to order is stated using the reorder point which is formulated as follows.

ROP = (dx L) + Safety Stock Information : ROP = Reorder point (kg) d = Average requests per period = Waiting time (days)

# IV. RESULTS AND DISCUSSION

# 4.1. Description of Research Object

PT.Plasticolors Eka Perkasa was founded in Indonesia by Ir. Budi Kusuma, SE. in 1998. Since its inception, this company has become one of the companies engaged in the dye for the plastic industry. The advantage of this Plasticolors company is that it has physical and chemical knowledge of the materials used and the ingredients and uses for the intended product.

In this study, researchers focused more on PT. Plasticolors Eka Perkasa in Cikarang (Factory) which is located at Jl. Cendana Raya Blok F8 No 18, Delta Silcon 3 Industrial Park, Lippo Cikarang, Bekasi. PT. Plasticolors is a plastic dye company whose materials are used for oil bottles, food and beverage packaging and also drinking water gallons

# 4.2. Analysis of Raw Material Inventory Data

4.2.1. Analysis of Raw Material Purchases and Calculation of data according to Company policy

PT. Plasticolors purchases raw materials based on purchase orders received from customers. The following is a table of raw material purchases during the period January 2018 to December 2018:

No.	Month	Purchase (Kgs)	Usage (Kgs)
1	January	500	490
2	February	1,600	1,375
3	March	500	150
4	April	-	725
5	May	1,000	325
6	June	2,600	2,575
7	July	300	550
8	August	800	650
9	September	1,300	-1,175
10	October	1,050	1,625
11	November	INDANES	A 1,835
12	December	500	450
	total	12,575	11,925

Table 4.1. Data on Purchase and Use of Raw Material P in 2018

Source: Data processed (2020)

From table 4.1. It can be concluded that the total purchase of raw material P, namely during the January-December 2018 period was 12,575 kg, and the total use of P raw material during the January-December 2018 period was 11,925 kg.





#### 4.2.2. Order Fee

Ordering costs are costs incurred by the company because of the ordering of raw materials from suppliers, starting from the order process until the goods arrive at the warehouse. The company booking fee consists of telephone fees, transportation and unloading costs and administrative costs. The details are as follows:

Table 4.2. Details of the Cost of Ordering Raw Material P in 2018

No.	Type of Fee	Amount (Rp)
1	Telephone charges	24,150,192
2	Administrative costs	85,300,000
	total	109,450,192

Source: Data processed (2020)

Based on the details of the ordering costs incurred by the company during the period January to December 2018 amounting to Rp. 109,450,192, - with the result of the per-order cost of Rp. 9,950,017, -.

## 4.2.3. Storage Costs

Storage costs are costs incurred by the company in storing raw material inventories within a certain period of time.

**Table 4.3.** Details of the cost of storing raw material P in 2018

No.	Type of Fee	Amount (Rp)
1	Warehouse maintenance costs	8,500,000
2	Electricity cost	60,200,123
2	Damage costs	12,375,200
	total	81,075,323

Source: Data processed (2020)

Based on the details of the storage costs incurred by the company for the period January to December 2018 amounting to Rp. 81,075,323, - which is divided by the total yearly safe purchases amounting to Rp. 6.447, - per kg per year.

#### 4.3. Data analysis

#### 4.3.1 Analysis of Purchasing Raw Materials P based on the EOQ Method

PT. Plasticolors make as many raw material purchases as possible143 timesduring the period January 2018-December 2018. The amount of raw material usage, raw material prices, ordering costs per order and the amount of storage costs. PT Plasticolors place orders based on data and experience from the past.

1. Total purchase frequency

Q \* = 
$$\sqrt{\frac{2D}{H}}$$
  
Q \* =  $\sqrt{\frac{2(11.925)(9.950.017)}{6.447}}$   
= 6,067

2. Number of orders desired

$$N = \frac{100 \text{ minimum}}{\text{Jumlah unit yang dipesan}}$$
$$= \frac{11,925}{6.067}$$
$$= 1.97 \rightarrow 2$$

So, the total frequency of purchasing Raw Material P is 2 times.

3. The amount of time between orders you want

Ν

The number of working days during the year in 2018 is 296 days, below is the calculation to find out the total time between the desired orders as follows: *Jumlah hari kerja perhari* 

$$I = \frac{296}{2}$$

$$= 148$$

So, the total time between orders wanted is 148 days.

# 4.3.2 Calculation of the Total Cost of Raw Material Inventory (TIC)

To obtain the minimum total cost of raw material inventory, it is necessary to have a comparison between the calculation of the cost of raw material inventory according to EOQ with the calculation of the cost of raw material inventory that has been carried out by the company. This is done to find out how much savings in total inventory costs in the company. The calculation of the total cost of inventory according to the EOQ method will be calculated using the Total Inventory Cost (TIC) formula in rupiah as follows:

TIC = 
$$\left[\frac{D}{Q}S\right] + \left[\frac{Q}{2}H\right]$$
  
=  $\left[\frac{11.925}{5.963}9.950.017\right] + \left[\frac{5.963}{2}6.447\right]$   
= Rp. 19,898,365 + Rp. 19,221,731  
= Rp. 39,120.096

So, the total cost of inventory that must be incurred by the company is Rp. 39,120,096, -

#### 4.1. Analysis of Purchasing Raw Material P Based on QM Software

## 4.1.1. Purchase of raw materials

The EOQ model in this study aims to calculate the optimal raw material requirements and costs every time you place an order.

Data on the use of raw materials p for the period January to December 2018 are as follows.

Total needs for Raw Material P = 11,925 kg
 Cost per message = Rp. 9,950,017, The cost of saving perg = Rp. 6.447, -

**Table 4.4.** Total Cost of Raw Material Inventory P in 2018

Data (Parameters)	Value
Demand rate (D)	11,925 kg
Setup / ordering cost (S)	Rp. 9,950,017
Holding / carrying cost (H)	6,447 kg
Unit cost	0
Results	
Optimal order quantity (Q *)	6,067.05 kg
Maximum Inventory Level (Imax)	6,067.05 kg
Average inventory	3.033.52 kg
Orders per period (year)	1.97 times
Annual Setup cost	Rp. 19,557,120
Annual holding costs	Rp. 19,557,120
Total Inventory (Holding + Setup) Cost	Rp. 39,114,240
Unit costs (PD)	0
Total Cost (including units)	Rp. 39,114,240

Source: Data processed (2020)



#### Figure 4.2. Graph of Economic Order Quantity Raw Material P in 2018

### Source: Data processed (2020)

From Figure 4.2. It can be seen that the graph of the storage cost decreases and the ordering cost increases, and the total cost initially increases but after arriving at the meeting of the ordering cost line with the storage cost then decreases. The lowest point of the total cost of inventory is reached when the order cost and storage cost intersect, that is, when the order quantity is 6,067 kg.

## 4.1.2. Safety Stock

According to Assauri (2011: 186), a safety stock is an additional stock that is held to protect or maintain the possibility of a shortage of raw materials (stockout). According to Heizer & Render (2015: 58) the purpose of safety stock is as an anticipation of a shortage of inventory, thus ensuring the smooth running of a production process and is used to overcome delays in the arrival of raw materials. The safety stock for raw materials can be expected so that the production process is not disturbed by the uncertainty of materials. In determining the amount of safety stock, it can be done by comparing the average use of raw materials then looking for the standard deviation using the statistical method, the amount of deviation analysis will be determined.

No.	Month	Usage (kg)	$\overline{X}$	$(X-\overline{X})$	$(X-\overline{X})^2$
1	January	490	994	-504	254,016
2	February	1,375	994	381	145,161
3	March	150	994	-844	712,336
4	April	725	994	-269	72,361
5	May	325	994	-669	447,561
6	June	2,575	994	1,581	2,499,561
7	July	550	994	-444	197,136
8	August	650	994	-344	118,336
9	September	1,175	994	181	32,761
10	October	1,625	994	631	398,161
11	November	1,835	994	841	707,281

**Table 4.5** Calculation of Standard Deviation of Raw Material P in 2018

12	December	450	994	-544	295,936
	total	11,925			5,880,607

Source: Data processed (2020)

How to determine the amount of safety stock using the following formula:

$$SD = \sqrt{\frac{\sum (x - \overline{x})^2}{n}}$$

 $SD = \sqrt{\frac{5.880.607}{12}}$ 

SD = 700,036 kg

Assuming that the company uses two storage standards or the intolerable 5% deviation and uses one side normal of 1.65 standard deviation from the mean. To calculate the safety stock are as follows:

SS =  $\alpha$  xz = 700,036 x 1.65 = 1.155 kg

So, the optimal safety provision that must be provided by the company is 1,155kg.

### 4.1.3. Reorder Point

According to Heizer and Render (2015: 567), the reorder point is the level of inventory when the inventory reaches a certain level late and the order must be made.

In the company PT. Plasticolors Eka Perkasa has a waiting time between ordering and receiving raw materials is 3 days. Calculation of the average per day assuming 296 working days in a year.

To calculate the reorder point, you must first find the average raw material usage per day as follows:

 $d = \frac{\text{Total Kebutuhan Bahan Baku}}{296}$   $d = \frac{11.925}{296}$  d = 40 kg / dayThen the reorder point (ROP) is as follows: ROP = (dx L) + Safety Stock = (40 x 3) + 1.155 = 1.275 \text{ kg}

So, the company must reorder Raw Material P when the raw material inventory in the warehouse is 1,275 kg.

#### 4.1.4. Determination of Maximum Inventory (Maximum Inventory)

Maximum Inventory is needed by the company to find out the quantity of inventory in the warehouse so that there is no excess stock of goods so that it does not waste working capital. To find out the maximum amount of inventory, the formula is as follows:

Maximum Inventory (MI) = Safety Stock + EOQ

$$= 1,155 \text{ kg} + 1,639 \text{ kg}$$

So, the maximum supply of Raw Material P obtained by the company is 2,794 kg

## 4.2. Comparison of Company Policy using the EOQ Method

From the results of calculations that have been analyzed, it is known the comparison of raw materials between company policies using the EOQ method.

**Table 4.6.** Comparison of Raw Material Inventory Between Company Policy and 2018

 EOQ Model

No.	Information	Company policy	EOQ method
1	Purchase Quantity	11,925 kg	6,067 kg
2	Purchase Frequency	11 times	2 times
3	Rebooking Point	-	1,275 kg
4	Total Inventory Cost	Rp. 39,120,096	Rp. 39,114,243
5	Safety Supplies	-	1,155 kg
6	Maximum Inventory	-	2,794 kg

Source: Data processed (2020)

Based on Table 4.6. Above, it can be seen that the comparison between the policies used by the company using the EOQ model, namely in January 2018 to December 2018 shows that the quantity of raw material purchases with the EOQ model is 6,067 kg smaller than the company's purchase quantity of 11,925 kg. The total cost incurred by the company is Rp. 39,120,096, -while the total cost of inventories incurred by the company using the EOQ model is Rp. 39,114,244, - so that the company can save Rp. 5,852, -. The frequency of company orders is 4 times, while the EOQ model is 2 times. At the reorder point (Reorder Point) is 1.275 kg. The safety stock and the maximum stock are 1,155 kg and 2,794 kg, respectively.

## 4.3. Research Findings

The results of this study indicate that the control of raw material inventory at PT. Plasticolors Eka Perkasa is not yet optimal and the company needs to oversee the inventory control system. Raw material inventory is an element in determining the smooth running of production activities at each company. The amount of raw material is very important in determining how efficient and effective the company is in processing the products that have been planned. In the company PT. Plasticolors Eka Perkasa policies in the procurement of raw material supplies that have been carried out so far have not shown minimum costs, which means that the inventory costs are still greater than if the company uses the EOQ method.

The results in this study are in accordance with previous studies. Kevin, Noortje and London (2018) state that the raw material inventory control policy is not efficient because the company's inventory costs are greater than the results of the EOQ model. The results of this study are also in accordance with the research of Fahmi and Nanda (2015) which states that by using the EOQ model the company obtains the optimal amount of Raw Material P inventory purchases is the EOQ model. Andreno, Indrie and Merlyn (2018), the total cost of raw material inventory using the EOQ model the company can minimize the purchase of raw material inventory costs.

From the results of the EOQ calculation, it is known that reorder (Reoder point) in purchasing raw materials during the period January to December 2018 at PT. Plasticolors Eka Perkasa showed that the company should purchase raw materials when the raw material stock was 1,275 kg with a lead time of 7 days. To avoid excess raw materials, the purchase amount that must be made is 6,067 kg. The total cost of inventory with the EOQ model is smaller than the total cost of inventory issued by PT. Plasticolors Eka Perkasa during January to December 2018, where the purchase of raw materials using the EOQ model costs Rp. 39,114,244 - this amount is smaller than the costs incurred by the company of Rp. 39,120,096, -.

# V. CONCLUSIONS AND SUGGESTIONS

## 5.1. Conclusion

Based on the results of research conducted by researchers, it can be concluded as follows:

1. The optimal purchase of raw materials using the EOQ method in the period January to December 2018 is 1,639 kg.

- The total cost of the company's raw material inventory if calculated using the EOQ method is equal to Rp. 39,114,244, and if calculated by company policy is equal to Rp. 39,120,096, -. From the results of the total cost value, it can be seen that there are savings in total costs when using the EOQ methodamounting to Rp. 5,852, or 1% during the period January to December 2018.
- 3. The frequency of ordering raw materials if calculated based on company policy is 4 times a year while using the EOQ method there are 2 times a year and with a reorder point when the raw material supplies are 1,275 kg.

# 5.2. Suggestion

Companies should use the EOQ method in the raw material procurement policy because it has been proven to produce an efficient total cost and optimal raw material purchases compared to using company policy.

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