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Analysis of Raw Material Inventory Control Using the EOQ (Economic Order Quantity) Method in the CV. Alda

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Abstract

This study aims to determine the mechanism for determining raw material inventory, the number of raw material orders and the most optimal order frequencies in the CV. Alda

The method used in this study is a quantitative descriptive method used to make a systematic, factual and accurate picture of an object to be studied. The data in this study are in the form of company inventory report data.

Calculation results show that there are significant differences between the EOQ values each year. EOQ is gradually experiencing a downward trend. The decrease is due to differences in inventory levels and costs attached to these inventories, especially in the level of demand for raw materials each year. By using the EOQ method, companies canknow when to order and how much to order, so as to minimize costs

Keywords: Inventory Control, Optimal Order Amount (EOQ), and Reorder Points**.**

INTRODUCTION

Background to the Problem

A good production process requires a balance between production factors, which include: raw materials, capital, machines, methods, and human resources. Special raw materials are often an important factor, because the supply of raw materials is the main element in the smooth production process. For this reason, every company must have a good planning for raw material requirements and must be aligned with every element within the company without exception.

We understand that every company has a different way of managing raw material inventory. We can see these differences from the number of units of raw materials, time of use, and the amount of costs to buy raw materials. Apart from the above, every company definitely needs proper raw material inventory management. Without proper raw material inventory management, the company cannot carry out good production activities. It should also be noted, if the inventory of raw materials is carried out in too large quantities (over stock) it will cause some losses (Kumar, 2016).

The first disadvantage is that the storage costs borne by the company will be even greater, besides that the company must bear the risk of damage to storage. The second disadvantage is that the company must prepare sufficient funds to purchase raw materials. Therefore, the supply of raw materials in too large quantities will cause the allocation of capital for investment in other fields to decrease (Maddah dan Jaber, 2008).

As for some weaknesses, if the supply of raw materials is carried out in too small quantities, out of stock will cause delays in the production process. Inventory of raw materials in too small quantities sometimes cannot meet the company's needs to carry out the production process. If the company runs out of raw materials, the implementation of the production process cannot run smoothly and consequently the quality of the final product is low. In addition, a relatively small amount of raw material inventory will result in a greater frequency of raw material purchases, so that the order costs borne by the company will be even greater (Eroglu dan Ozdemir, 2007).

In relation to the level of efficiency of the company as a whole, the activity of purchasing raw materials needs to be planned using the right method so that the company avoids wasting costs and the company can operate more efficiently in the future. One method

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that is quite efficient in managing raw material inventory control is the EOQ (Economic Order Quantity) method (Sana dan Chaudhuri, 2008).

This method is often used because it is easy to implement and able to provide the best solution for the company. This is proven by using the EOQ method, not only knowing how much inventory is most efficient for the company, but also knowing the costs that the company will incur in relation to the raw material inventory it has (Total Inventory Cost) and the most appropriate time to hold it. repurchase (calculated by Re Order Point).

CV. ALDA is a small company engaged in wood processing. This company has business activities, namely processing, selling finished products to consumers who need them. CV operational activities. ALDA began operations in 2005. Its office is located in Sinjai Regency, South Sulawesi, with production areas covering plantations and residential areas in Bongki, Sinjai, South Sulawesi.

CV. ALDA realizes that competition is getting more competitive. Therefore, the right strategy is needed to deal with this competition. One of the strategies used by a company to win in competition is to keep costs to a minimum. In fulfilling consumer demand, the company requires a large number of raw material supplies. For this reason, careful planning is needed so that inventory costs are incurred as efficiently as possible and do not become a problem that can drain large costs.

BIBLIOGRAPHY REVIEW

Theoretical Foundations

Stakeholder Theory

The prosperity of a company is very dependent on the support of its stakeholders. Stakeholders are defined as stakeholders, namely parties or groups who have an interest, either directly or indirectly, in the existence or activities of the company, and therefore these groups influence and are influenced by the company (Ayudia, 2017). According to Ghozali and Chariri (2007) in Devi, et al (2017), stakeholder theory states that a company is not an entity that only operates for the benefit of the company, but must also provide benefits to stakeholders (shareholders, creditors, consumers, suppliers, analysts, employees, government, and other parties such as people who are part of the social environment).

According to Deegan (2004), stakeholder theory is a theory which states that all stakeholders have the right to obtain information about company activities that can influence their decision making. Stakeholders can also choose not to use this information and cannot play

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a direct role in a company. According to Devi, et al (2017), the main objective of stakeholder theory is to assist company management in increasing value creation as a result of the activities carried out and minimizing losses that may arise for stakeholders.

Based on the definition above, it can be concluded that stakeholder theory states that interests do not only exist in the owners or management of the company, but interests are also owned by other stakeholders who contribute to the company. Therefore, the company will react by carrying out good and maximum management activities for economic resources to encourage financial performance and company value in accordance with the expectations of stakeholders (Devi, et al. 2017).

Understanding

Inventory in the context of production can be interpreted as an idle resource. This idle resource has not been used because it is waiting for further processing. What is meant by further process can be in the form of production activities as found in manufacturing systems; marketing activities as found in the distribution system; or consumption activities such as in the household system

The existence of idle supplies or resources in a system has a specific purpose. The main reason is that certain resources cannot be brought in when these resources are needed, so to ensure the availability of these resources, it is necessary to have supplies that are ready to be used when needed

According to Suyadi Prawirosentono (2007: 65) Inventory is current wealth contained in the company in the form of raw material inventory (raw material) finished goods (work in process) and (finished goods). Raw materials are the main ingredients of a product or goods. Intermediate goods are goods that are still in the process of being made. Finished goods are goods that are ready to be used or consumed by consumers.

Inventory Function

The main function of inventory is as a buffer, a link between production and distribution processes to gain efficiency. Another function of inventory is to stabilize prices against fluctuations in demand. More specifically, Ginting (2007:46) divides inventory into several categories based on their functions as follows.

1. Inventory in Lot Size

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Inventories arise because there are economic requirements for replenishment. Provision in large lots or at a slightly faster pace than demand will be more economical. The determinants of economic requirements include setup costs, production preparation or purchasing costs and transportation costs.

2. Reserve Inventory

   Inventory control arises with respect to uncertainty. Production cycle times (lead times) may be deeper than predicted. The number of productions rejected (reject) can only be predicted in the process. Reserve inventory safeguards failure to reach consumer demand or meet manufacturing needs on time

3. Anticipatory Inventory

   Inventories can arise in anticipation of a decrease in supply (supply) and an increase in demand (demand) or an increase in prices. To maintain the continuity of product delivery to consumers, a company

Inventory Type

Judging from the function of inventory according to Assauri (2004: 170) are as follows:

1. Batch Stocksor Lot size Inventory

Namely supplies that are held because we buy or make materials or goods in larger quantities than the amount needed at that time.

The benefits derived from the Lot Size Inventory are as follows:

a. Get a discount on the purchase price
b. Gain production efficiency (manufacturing economies) due to longer operations or "production runs".
c. There are savings in transportation costs

2. Stock Fluctuations

Namely the inventory held to deal with unpredictable fluctuations in consumer demand.

3. Anticipation stock

Namely inventories held to deal with predictable fluctuations in demand, based on seasonal patterns that exist in one year and to deal with the use or sale of increased demand:

Inventory Cost

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According to Schroeder (1995:8) many decision problems can be solved by using economic criteria. However, one of the most important prerequisites is an understanding of the fee structure. The inventory cost structure incorporates the following four types of costs.

1. Production unit costs (item cost). This cost is the cost of buying or producing individual units of inventory. The unit cost of this item is usually expressed as a cost per unit. Which is multiplied by the quantity obtained or produced. Sometimes unit costs are deducted if enough units are purchased at one time.

2. Ordering costs or preparation costs (ordering or setup costs). Order costs are associated with orders for a batch or batch of units of goods. Order costs are independent of the number of units ordered; these costs are assigned to the entire stack. These costs include the typing of purchase orders, shipping orders, freight charges, receiving fees, and so on.

3. Procurement or storage costs (carrying or holding costs). Procurement or holding costs associated with holding a single item in inventory for a period of time.

Factors Affecting Inventory

Even though inventory will provide many benefits to the company, the company is still careful in determining inventory policies. Inventory requires investment costs and in this case, it is the task for management to determine the optimal investment in inventory.

Inventory Models

The inventory model according to Heizer and Render (2010:90), namely:

a. Free vs bound demand

The inventory control model assumes that the demand for an item may be independent or dependent on the demand for another item.

b. Holding, ordering and setup costs

Holding costs are costs associated with storing or carrying inventory from time to time. Therefore, storage costs also include the cost of goods becoming obsolete and costs related to storage, such as insurance, additional employees, and interest payments.

Inventory Control

a. Definition of Inventory Control

In the opinion of Assauri (2004: 176), inventory control is one of the activities of a sequence of activities that are closely sequential to one another in the entire production

operation of the company in accordance with what has been planned in advance both in time, amount, quantity, and cost.

b. Purpose of Inventory Control

The purpose of inventory control in detail can be stated as an effort to (Assauri 2004:177):

1. Take care not to let the company run out of inventory so that it can result in the cessation of production activities.
2. Ensure that the formation of inventories by the company is not too large or excessive.
3. Keeping small purchases is avoided as this will result in too large order costs.

EOQ (Economic Order Quantity)

a. Definition of EOQ (Economic Order Quantity)

Every company always tries to determine the policy of supplying the right raw materials, in the sense that it does not interfere with the production process and the costs are not too high. For that purpose, there is a method called EOQ (Economic Order Quantity).

According to Gitosudarmo (2002: 101) EOQ (Economic Order Quantity) is actually the most economical volume or number of purchases to be carried out at each purchase. To meet this need, the most economical fulfillment of the need (purchase) can be calculated, namely the number of goods that can be obtained by purchasing using minimal costs.

b. Determination of EOQ (Economic Order Quantity)

As for determining the number of economic orders (EOQ) there are 3 ways according to Assauri (2004: 182), namely:

a. Table Approach (Tabular Approach)

Determining the number of orders that are economical with the Tabular approach is done by compiling a list or table of the number of orders and the total cost per year.

b. Graphical Approach

Determination of the number of economic orders using the "Graphical approach" is carried out by depicting graphs of carrying costs and total costs in one figure, where the horizontal axis is the number of orders (orders) per year, the vertical axis is the cost of ordering costs, carrying costs and total costs.

c. Formula approach (formula approach)

The way to determine the number of economic orders by reducing them in mathematical formulas can be done by noting that the minimum amount of inventory costs is obtained, if ordering costs are equal to carrying costs.

Re-Order Point

In addition to taking into account the concept of EOQ (Economic Order Quantity), companies also need to consider when to place an order again (Re Order Point). The definition of Re Order Point (ROP) according to Rangkuti (2004:83) is an inventory operations strategy, which is an order point that must be made by a company in connection with the existence of Lead Time and Safety Stock.

According to Assauri (1998:199) ROP (Re Order Point) is a point or limit of the amount of inventory that exists at a time when orders must be held again.

ROP is the inventory level where when inventory has reached that level, orders must be placed immediately. (Heizer and Render, 2010:99).

RESEARCH METHODS

This study aims to determine the mechanism for determining raw material inventory, the number of raw material orders and the most optimal order frequencies in the CV. Alda

The method used in this study is a quantitative descriptive method used to make a systematic, factual and accurate picture of an object to be studied. The data in this study are in the form of company inventory report data.

RESULTS OF RESEARCH AND DISCUSSION

Research result

1. Raw Material Usage

This study uses data on wood raw materials for 2016 – 2018 because there are fairly objective comparisons to determine the results and recommendations of this study. As shown in the table above, the company's use of raw materials varies over time.

Table 2

Actual Use of Raw Materials During 2016–2018

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Month	Wood Raw Material (m3)		
	2016	2017	2018
January	35.3304	48,984	41.9714
February	32.3934	94,823	49.8228
March	56.1130	62.4882	45.7409
April	279.2738	55.0218	58.6592
May	94.06156	74.2804	46,264
June	81.42724	38,537	54.9374
July	73.04392	47.4628	41,758
August	94.3542	17.4232	23,948
September	61.3812	24.7394	27,468
October	72.85919	27.0859	52,991
November	57.53952	26,784	69.1052
December	48.14218	50.4663	45.5544
Total	**985,9196**	**568,096**	**558.2203**
Average / month	**82.15997**	**47.34133**	**46.51836**
Average / day	**2.738666**	**1.578044**	**1.550612**

Source: CV. Alda, 2019

The largest use of wood raw materials occurred in April for 2016 amounting to 279.2738 m3, February for 2017 amounting to 94.823 m3, and November for 2018 amounting to 69.1052 m3. Meanwhile, the smallest use of wood raw materials occurred in February for 2016 amounting to 32.3934 m3, August for 2017 amounting to 17.4232 m3, and August for 2018 amounting to 23.948 m3.

According to the assumption of using the EOQ (Economic Order Quantity) method, demand must be constant even though the actual level of company demand varies. The data above illustrates conditions where demand varies greatly. This is because the company's

request for CV. Alda depends on how often partners and other consumers participate in development projects.

2. Raw Material Costs

This research was conducted at CV. Alda by documenting raw material cost data. In general, the total cost of raw material inventory at the company consists of order costs and storage costs.

a. Order Fee

Order costs are costs that will be directly related to order activities carried out by the company. Order costs fluctuate not with the quantity ordered, but with the frequency of orders. The total annual order cost is obtained by multiplying the order cost each time an order is placed by the order frequency during the year. The components of the cost of ordering wood raw materials include telephone costs, administrative costs, and loading and unloading costs.

The company does not incur any mailing costs because orders are only made by telephone. Telephone charges are derived from the number of minutes used when placing an order at a telephone conversation rate per minute. Telephone orders take an average of 10 minutes at a rate of Rp. 450,- per minute.

Administrative costs include office stationery (ATK) HVS paper, folders, contents of staples, stamp ink, and purchase receipt paper. Loading and unloading costs Rp. 50.000,- per m3. During 2016-2018, the number of orders placed varied. Order frequency in 2016 was 40 times, in 2017 was 35 times, and in 2018 was 39 times.

Table 3

Components of Raw Material Order Costs During 2016–2018

Cost component	Wood Raw Materials (per order)		
	2016	2017	2018
Phone Fee	Rp 4,500	Rp 4,500	Rp 4,500
Administrative costs	Rp 1,250	Rp 1,250	Rp 1,250
Loading and unloading costs	Rp 1,230,521	Rp 807,463	Rp 718,103
Total	**Rp 1,236,271**	**Rp 813,213**	**Rp 723,853**

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Source: processed data, 2019

Telephone costs are incurred when an order with a supplier is placed. Administrative costs arise when making invoices and recording orders and receiving raw materials, while loading and unloading costs arise when raw materials are transported and transferred from transportation to the warehouse. The largest order cost component is loading and unloading costs, which is Rp. 1,230,521, - in 2016, Rp. 807,463, - in 2017, and Rp. 718,103 in 2018. Meanwhile, the smallest cost component is administrative costs, which is IDR 1,250. The total cost of ordering wood raw materials is Rp. 1,236,271, - in 2016, Rp. 813,213, - in 2017, and Rp. 723,853, - in 2018.

b. Storage Fee

Storage costs are costs that must be borne by the company in connection with the existence of raw materials stored in the company. Holding costs will fluctuate with inventory levels. This cost is the multiplication of the cost of storing wood raw materials per m3 per year with the average annual inventory level of raw materials stored. The storage cost components consist of electricity costs, warehouse security and supervisor salary costs, warehouse depreciation costs, maintenance costs, and Opportunity Cost costs.

Electrical facilities are used as lighting which is turned on 12 hours a day. Warehouse uses lighting from electricity of 900 Watt. The cost of electricity per Kwh is IDR 450. Warehouse security and supervisor salary costs are calculated based on the salary the company pays for 2 people for a year. Warehouse depreciation costs that occur in the company are depreciation costs for warehouse facilities, the building price is Rp. 200,000,000, - with a warehouse economic life of 20 years. Warehouse maintenance costs are calculated based on the costs incurred by the company to maintain and repair the warehouse. The cost of maintaining the warehouse for a year is Rp. 12,000,000, -

Opportunity Costare costs incurred due to inventory, the company will lose the opportunity to earn interest income if the funds are kept in the bank. The amount of this fee was influenced by the price of raw materials per m3 and the level of bank interest rates that were in effect at that time. The interest rate used is the average Bank Indonesia (BI) investment credit interest rate, which is 11.8% in 2016, 13% in 2017, and 12.24% in 2018. Opportunity Cost is calculated based on material prices the average raw material per m3 multiplied by the interest rate and multiplied again by the average inventory stored in the warehouse.

Table 4

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Components of Raw Material Storage Costs During 2016–2018

Cost component	Wood Raw Material (per m3 per year)		
	2016	2017	2018
Electricity cost	Rp 86,326	Rp 135,659	Rp 139,607
Security & Supervisor Salary Costs	Rp 118,417	Rp 186,089	Rp 191,505
Building Depreciation Cost	Rp 164,468	Rp 258,458	Rp 265,980
Maintenance cost	Rp 197,361	Rp 310,149	Rp 319,176
Opportunity Cost	Rp 153,400	Rp 175,500	Rp 183,600
Total	**Rp 719.8971**	**Rp 1,065,855**	**Rp 1,099,867**

Source: processed data, 2019

The biggest storage cost component is the maintenance cost, which is Rp. 197,361, - in 2016, Rp. 310,149,- in 2017, and Rp.319,176,- in 2018. Meanwhile, the smallest storage cost component is electricity costs, which is Rp. 86,326, - in 2016, Rp. 135,659, - in 2017, and Rp. 139,607 in 2018. The total cost of storing raw materials per m3 per year is Rp. 719,971, - in 2016, Rp. 1,065,855, - in 2017, and Rp. 1,099,867 in 2018.

3. Total Optimal Raw Material Costs on CV. Alda

. Calculation of the optimal quantity of wood raw material orders for 2016-2018 in detail is presented in Table 5.

Table 5

Usage, Order Fee and Annual Storage Fee

Year	Usage (D)			Order Fee	Storage Fee
	Amount (m3)	Price/m3	Total	(S)	(H)
2016	985,9196	Rp 1,300,000	Rp 1,281,695,493	Rp 1,236,271	Rp 719,971
2017	568,096	Rp 1,300,000	Rp 766,929,600	Rp 813,213	Rp 1,065,855

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2018	558.2203	Rp 1,300,000	Rp 837,330,450	Rp 723,853	Rp 1,099,867

Source: processed data, 2019

- **2016**

$$EOQ = \sqrt{\frac{2 \text{ x } 985{,}91961 \text{ x Rp. } 1.236.271}{\text{Rp. } 719.971}}$$

$$EOQ = \sqrt{3385{,}868667}$$

$$EOQ = \mathbf{58{,}1882176\ m^3}$$

- **2017**

$$EOQ = \sqrt{\frac{2 \text{ x } 568{,}096 \text{ x Rp. } 813.213}{\text{Rp. } 1.065.855}}$$

$$EOQ = \sqrt{866{,}8777056}$$

$$EOQ = \mathbf{29{,}442786987\ m^3}$$

- **2018**

$$EOQ = \sqrt{\frac{2 \text{ x } 558{,}2203 \text{ x Rp. } 723.853}{\text{Rp. } 1.099.867}}$$

$$EOQ = \sqrt{734{,}7598036}$$

$$EOQ = \mathbf{27{,}106453172\ m^3}$$

Based on the data from the EOQ calculation above, it is known that the optimal quantity of raw material orders is 58.1882176 m3 in 2016, 29.442786987 m3 in 2017, and 27.106453172 m3 in 2018 for each order. The calculation above shows that there is a significant difference between the EOQ values each year. The EOQ trend gradually decreases. The decrease was due to differences in inventory levels and the costs attached to these inventories, particularly at the level of demand for raw materials each year.

4. Optimal Order Frequency

After knowing the optimal raw material order quantity, the new order frequency can be calculated. The number of order frequencies is calculated from the division between demand

during the year concerned with the optimal quantity of raw material orders or by the D/EOQ formula. The calculation of the frequency of orders/purchases of raw materials is presented as follows.

$$\textbf{Order frequency} = \frac{\textbf{demand for a year}}{\textbf{EOQ}}$$

- **2016**

$$\text{order frequency} = \frac{985{,}91961\ \text{m}^3}{58{,}1882176\ \text{m}^3}$$

$$\text{order frequency} = 16{,}94362967\ \text{kali} = \mathbf{17\ kali}$$

- **2017**

$$\text{order frequency} = \frac{568{,}096\ \text{m}^3}{29{,}442786987\ \text{m}^3}$$

$$\text{order frequency} = 19{,}29491255\ \text{kali} = \mathbf{20\ kali}$$

- **2018**

$$\text{order frequency} = \frac{558{,}2203\ \text{m}^3}{27{,}106453172\ \text{m}^3}$$

$$\text{order frequency} = 20{,}59363121\ \text{kali} = \mathbf{21\ kali}$$

The frequency of orders for wood raw materials based on the EOQ method is less or less frequent than the frequency of actual orders made by the company. The frequency of orders for wood raw materials using the company method was made 40 times in 2016, 35 times in 2017, and 39 times in 2018 while orders using the EOQ method were made 17 times in 2016, 20 times in 2017, and 21 times in year 2018.

The calculation of raw material inventory costs based on the EOQ method during 2016 – 2018 is shown in detail in the following table:

Table 6

Components of Total Inventory Cost Based on the EOQ Method

Year	Order Cost/Year (a)	Optimal order frequency (b)	Storage Fee/year (c)	Optimal order quantity/2 (d)

2016	Rp	1,236,271	17	Rp 719,971	29.0941088
2017	Rp	813,213	20	Rp 1,065,855	14.72139349
2018	Rp	723,853	21	Rp 1,099,867	13.55322659

Source: data obtained, 2019

Table 7

Total Cost of Inventory of Raw Materials Based on the EOQ Method During 2016 – 2018

Year	Storage Fee	Order Fee	Total Inventory Cost
2016	Rp 20,946,924	Rp 21,016,613	41,963,538
2017	Rp 15,690,871	Rp 16,264,257	31955128
2018	Rp 14,906,753	Rp 15,200,904	30107657

Source: processed data, 2019

The data above explains that the cost component of raw material inventory that causes the greatest cost is the order cost, which is Rp. 21,016,613, - in 2011, Rp. 16,264,257, - in 2012, and Rp. 15,200,904 in 2013. The total cost of raw material inventory based on the EOQ method in 2011 amounted to Rp. 41,963,538, -, in 2012 amounting to Rp. 31,955,128, -, and in 2013 it was Rp. 30.107.657,-

DISCUSSION

Based on the research results, the EOQ method allows companies to determine the most economical quantity of raw material orders with constant number of requests and lead times. Calculation results show that there is a significant difference between the EOQ values each year. The EOQ trend gradually decreases. The decrease was due to differences in inventory levels and the costs attached to these inventories, particularly at the level of demand for raw materials each year.

The frequency of orders for wood raw materials based on the EOQ method is less or less frequent than the frequency of actual orders made by the company. The smaller the frequency of orders, the smaller the costs that the company must incur for order costs, but the storage costs will be even greater. However, order costs alone are not enough to be able to

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compare the two inventory methods to find the most efficient inventory method. This is because there is still one more cost component that affects the total inventory cost as a whole, namely storage costs which are affected by the average amount of inventory in the warehouse.

The total cost of inventory is the sum of the total cost of orders and the total cost of storage per year. The order cost is obtained from the number of orders multiplied by the order cost per order. The storage cost is obtained by multiplying the storage cost per m3 per year by the average raw material inventory level per year stored. The amount of inventory stored in the warehouse is the average amount of inventory obtained from the sum of the initial inventory and ending inventory divided by two. The greater the amount of inventory stored in the warehouse, the greater the storage costs, and conversely the less the average amount of inventory in the warehouse, the the lower the storage cost. Likewise the order cost, the greater the frequency of orders made by the company, the greater the order cost,

So we know that by using the EOQ method, companies can find out when to order and how much to order, where in 2016 orders were made every 21 days, in 2017 orders were made every 18 days and in 2018 orders were made every 17 days. day, so as to minimize costs. Because the EOQ method provides information about the total cost of orders and storage costs, both of which affect the cost of raw material inventory.

This research is in line with research conducted by Malik (2013) which states that the application of the EOQ method to companies results in lower costs compared to other methods. This research is supported by research conducted by Fahmi Ramadhan (2014) which shows that the application of the EOQ method is more optimal than the simple method used by companies.

However, this research is not in line with research conducted by Setryorini (2011) which states that the company's policy in determining the purchase of raw materials has not yet determined minimum inventory costs

CONCLUSION

Based on the results of the research and discussion in the previous chapter, the conclusion of this study is that the company has used the EOQ method. The EOQ method allows companies to determine the most economical quantity of raw material orders with constant number of requests and lead times. Calculation results show that there is a significant difference between the EOQ values each year. The EOQ is gradually trending downwards. The

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decrease was due to differences in inventory levels and the costs attached to these inventories, particularly at the level of demand for raw materials each year.

So we know that by using the EOQ method, companies can find out when to order and how much to order, where in 2016 orders were made every 21 days, in 2017 orders were made every 18 days and in 2018 orders were made every 17 days. day, so as to minimize costs. Because the EOQ method provides information about the total cost of orders and storage costs, both of which affect the cost of raw material inventory.

Based on the research conclusions, the suggestions put forward in this study are as follows:

1. CV. Alda needs to carry out an inventory control process so that things that can hinder the production process can be overcome immediately. CV. Alda must also pay attention to two components of inventory costs, namely storage costs and order costs. These two cost components are the main reference for the company in determining its inventory control policy.
2. It is advisable for further research to add several inventory methods such as the FIFO method and the LIFO method in order to be able to compare the most optimal inventory method between these inventory methods.

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