



Application Economic Order Quantity (EOQ) for Control of Raw Material Inventory

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Abstract

The purpose of this study was to determine the auxiliary raw material inventory control by Serabine and compare the method using Economic Order Quantity. The type of research is descriptive research with quantitative approach. The object of this study is the amount of inventory raw materials, the number of purchases and the usage of raw materials. This study calculates the optimal inventory raw of coconut, rice flour and sugar using the EOQ method with calculation quantity of raw material purchase, frequency of purchase, safety stock, reorder point, and total inventory cost (TIC). This study shows that the use of the EOQ method is more optimal than using conventional methods. The use of EOQ method can minimize the cost to ordering of raw materials and optimize carrying costs. Total inventory cost of raw materials using EOQ method more efficient than using conventional methods it is shown by the company can save of the TIC for raw material Rp. 2,356,546.56, for coconut, Rp. 1,729,516.03 for rice flour, and Rp. 766,376.84. for sugar.

INTRODUCTION

Inventory control is one of the important factors for the company, because it is very influential in the creation of an efficient production process (Prasetio, 2014). The existence of increasingly competitive business competition makes one have to be innovative in managing a business in order to get optimal benefits. The company is expected to increase both in terms of product quality and quantity. Quality is an overall and characteristics of a product or service that can provide customer satisfaction (Yulianto, 2010).

According to Hendrajaya (2014) management quality is one of the key factors for the success of a company as a producer or seller of services and cannot be denied in today's busi-

ness world. In order to achieve the objective of a company would face obstacles, so good management needs to be applied. The Company is a form of production organization that seeks to serve the needs of consumers as well as manufacturers who seek to production activities to produce a product that can be consumed by consumers (Permana, 2014).

Good company management has a function that make the selection as well as a control decision for the company to run its business activities continuously and obtain the optimal profit. Profit interpreted as a measure of management effectiveness and efficiency in managing the company's resources (Nuraina, 2013).

In the business to generate profit is always accompanied by the sacrifice of resources for costs. One way for company to be able to

obtain optimal profits is to use a management policy that takes into account optimal inventory (Fajrin & Slamet, 2016). Optimal according to Arifianti (2014) is a process to achieve ideal results. Taroreh (2016) stated that the inventory represents the wealth of a company that has an important role in business operations so that companies need to conduct proactive management, which means that companies must be able to anticipate the circumstances and challenges that exist in inventory management to achieve the final goal, which is to minimize the total cost to be incurred by the company for handling inventory. The statement was supported by Taufiq and Slamet (2014) which states that the supply of raw materials is an important factor in the company to support the production process.

According to Muslich (2007) inventories of goods has a very important function for the company. The variety of goods available, such as materials, goods in process and finished goods, the company store for various reasons. The company's policy for storing goods in a large quantities or alternatively in small amounts has a trade-off.

If the company store goods in large quantities, the company can fulfill customer orders and avoid the occurrence of running out of goods (stock out). But the store means the company will bear the cost of storage. If the company has only a small amount of inventory, storage costs will be relatively small. But instead to be able to meet the demand for goods companies have to order goods more often, which means the cost of messages will increase. Thus there is a trade-off between maintaining inventories in small and large quantities.

According to Yulianto, Suseno, and Widiyanto (2016) the data were gathered from statistics and annual report of IDX in 2009. There were 46 companies that distributed dividends in 2008 (this year was as the base year to discover the changes optimal inventory can be seen when the company is able to determine how much raw material inventories accordingly, so as to avoid wastage. Where the company is able to balance the need for raw materials that are not too much and not too little. So it is important for companies to control and manage inventory to be optimal, in order to increase the value of optimal business a company must adjust to the optimal level anyway.

Every company should be able to take a decision on the procurement of supplies of goods and raw materials that will cause various costs, such as purchase costs, fees and storage costs. Companies need to have a supply of raw materials to ensure that the production process is not hampered, in other words, the company must have a clear inventory policy to manage raw material inventories held in order to maintain continuity of business enterprise.

Inventory control is a very important action that should be done by the company to calculate how the optimal amount of inventory levels that are required, and when to hold back purchases or reorder (Amrillah, 2016). According to Andini (2015) inventory control of raw materials in order to obtain optimal inventory that costs to a minimum so that the company can achieve the maximum benefit.

Theoretical point of view there is an appropriate methods in decision-making raw material purchases aimed at minimizing costs and maximizing the company's inventory turnover calculated in one period. Determine the right amount of raw materials so that it does not interfere with the smooth production process and the costs incurred are not too high, for this purpose there is a method called Economic Order Quantity (Karomah & Slamet, 2016). According to Yuliana and Nengah (2016) one of the inventory model used is the Economic Order Quantity method. The EOQ method strives to achieve a minimum inventory level with low costs and good quality.

The use EOQ method in decision-making raw material purchases will be able to minimize out of stock so that the production process can run smoothly, also can realize the efficiency of raw material inventory. Savings on the cost of storing raw materials and the use of the warehouse can also possible with this method. So is the risk arising from the supply of raw materials that accumulate in warehouse can also be overcome by utilizing this method (Indriani, 2015).

According to Sudiyatno (1997) Economic Order Quantity is one of the models that is often used in the determination the optimal amount of the most economical quantity of inventory orders by determination the need for use in certain period, the cost of ordering and carrying costs. Using this model, the company can estimate with certainty the need for materials in one period.

EOQ model used to answer the question of how many optimal orders, then the reorder point (ROP) is an inventory operation strategy which is the orders point that must be carried out by a company in connection with Lead Time and Safety Stock. Sitanggang (2014) argues that the reorder point is on a certain amount of inventory the company must orders with taking into account the needs during lead time.

In practice on micro, small and medium growing business many are still using conventional methods in supervising raw materials because controlling if raw materials inventory not be too important. According to Ardansyah and Tjioener (2012) the food industry is part of a group of small and medium businesses that play a role in the livelihood of the Indonesian economy, a fundamental understanding that the development of competitive food products will be able to penetrate the market with professional management and production processes that meet the standard. The statement was supported by Yulianto, Yanto, Sebayang, and Mulyaga, (2017) Indonesia's SMEs have a significant contribution to GDP and create jobs.

Serabine is a business that the main business activity of producing food that is pancake with innovated to become more modern. Serabine production business located in Seruling-

mas street number 45 Banjarnegara. Serabine has 60 variants of different flavors and has a main raw material of coconut, rice flour, and sugar.

Problems that occur in Serabine is their decision making in controlling of raw material inventory which still uses conventional methods. Conventional calculation methods result in instability in the use of raw materials, sometimes there is an excess of raw materials which results in the accumulation of raw materials, sometimes also experiencing shortages of raw materials. This shows that raw material inventory control conducted by Serabine is less than optimal because it still has an excess of raw material inventory.

Excess inventory of raw materials will result in continuous storage cost overruns. Through optimal control, the company can determine the exact order quantity by minimizing inventory costs. Expenditure costs due to the excess supply of raw materials will result in waste and the company can not obtain the maximum benefit as much capital invested in inventory of raw materials that are not produced.

Here is the raw material inventory data coconut, rice and sugar are used to produce pancake on Serabine during the period January 2018 until Desember 2018.

Table 1. Raw Material Inventory Coconut (Kg)

Month	Initial inventory	Purchase	Usage	Final Inventory	Information
January	250	950	850	350	Over
February	350	900	900	350	Over
March	350	800	850	300	Over
April	300	850	820	330	Over
May	330	950	950	330	Over
June	330	860	850	340	Over
July	340	900	925	315	Over
August	315	950	950	315	Over
September	315	800	820	295	Over
October	295	950	800	445	Over
November	445	850	850	445	Over
December	445	950	935	460	Over
Amount	4065	10710	10500	4275	
Average		892.50	875.00	356.25	

Based on data in Table 1 it can be seen that the company in the purchase of raw materials palm fruit number 10710 in one year, with the average number of purchases of raw materials palm fruit 892.50 per month. The Company purchases raw materials every 10 days and is therefore known to the purchase of oil for every booking is the number of 298 pieces. Total quantity of oil usage in the period amounted to 10,500 units with an average use of 875 pieces each month.

Based on the data in the table, it can be seen that the company purchases raw material amount of 5450 kg of rice flour in a year with an average purchase of raw materials a number of 454.17 kg of rice flour for each month. The Company purchased raw materials rice flour every 10 days and is therefore known that the purchase of rice flour as much as 36 times in one period with the purchase of 153 for every purchase. The quantity of usage that amount of 5340 kg with an average consumption of raw materials rice flour each month is 445kg.

Table 2. Raw Material Inventory Rice Flour

Month	Initial Inventory	Purchase	Usage	Final Inventory	Information
January	150	450	475	125	Over
February	125	460	460	125	Over
March	125	425	425	125	Over
April	125	425	425	125	Over
May	125	475	425	175	Over
June	175	450	450	175	Over
July	175	470	460	185	Over
August	185	475	475	185	Over
September	185	400	400	185	Over
October	185	470	450	205	Over
November	205	475	425	255	Over
December	255	475	470	260	Over
Amount	2015	5450	5340	2125	
Average		454.17	445.00	177.08	

Table 3. Raw Material Inventory Sugar (Kg)

Month	Initial inventory	Purchase	usage	Final Inventory	Information
January	150	350	350	150	Over
February	150	325	350	125	Over
March	125	350	355	120	Over
April	120	350	350	120	Over
May	120	350	350	120	Over
June	120	350	330	140	Over
July	140	375	370	145	Over
August	145	335	350	130	Over
September	130	370	350	150	Over
October	150	350	345	155	Over
November	155	365	350	170	Over
December	170	310	350	130	Over
Amount	1675	4180	4200	1655	
Average		348.33	350.00	137.92	

Seen in Table 3 it can be seen that the company purchases some 4180 kg of sugar in a year with an average purchase per month number of 348.33 kg. Serabine purchases of raw materials of sugar every 10 days, so it can be purchase of raw materials of sugar for every time a message is a 116.11 kg. In this period the quantity of consumption that is number 4200 kg with an average usage of each month of some 350 kg.

Motivation Researchers conducted this study due to the lack of research on this issue at the Pancake Serabine. Researchers were motivated to solve the problem of raw material inventory at the company's use of the method of Economic Order Quantity in inventory control of raw materials is expected to determine whether the method Economic Order Quantity is effective or not when applied to the calculation of raw material inventory control at the company. In addition, this study aims to determine the application of management science mainly related to raw material inventory control using Economic Order Quantity.

METHOD

This study uses a quantitative approach, which is used to measure the quantitative research the right thing. The research method used in this research use descriptive research. Descriptive research is compiled in order to provide a systematic overview of scientific information derived from the subject or object of research. Descriptive study focuses on a systematic explanation of the facts obtained during research conducted (Sanusi, 2017: 13), This study variables using two variables, namely raw materials inventory and Economic Order Quantity.

In this study to measure the quantity of raw material which is optimal in the company Serabine that using Economic Order Quantity (EOQ). Economic Order Quantity (EOQ) is the quantity of goods that can be obtained with minimal cost, or often said to be the optimal number of purchases (Sulindawati et al, 2017)

Research was conducted on Serabine located at Serulingmas street number 45 Banjarnegara. Serabine is a business that the business activity producing food that is innovated pancake and served with a modern concept. The population in this study is the raw material used mainly in producing pancake. The sample in this research is the main raw material used by the company in which that meet the criteria that the usage of 300 kg for each month. Thus, the samples used in the form of raw material coconut, rice flour and sugar.

Data analysis tool used to answer the problem in this research are as follows:

Economic Order Quantity

In order to get the amount of purchase of raw materials that are optimal for each message with minimal cost by (Slamet, 2007) can be determined using the EOQ calculation formulated as follows:

$$EOQ = \sqrt{\frac{2 \cdot R \cdot S}{P}}$$

Information :

R =Quantity Annual Demand

S =Cost per Order

P =Price per unit material

I =Cost of raw material storage warehouse that is expressed as a percentage of average inventory value in units of currency called carrying cost.

PXI =The cost of raw materials per unit of storage

Frequency Of Purchase

Frequency of purchase of raw materials is the number of purchases of raw materials during the period. According to (Heizer & Render, 2014: 564) to determine the expected number of bookings during the year (N), namely:

Total inventories were expected to = N =

Information :

D =Annual demand in units for supplies

Q =Number of units per order

Grace Period (Lead Time)

The grace period is the amount of goods arrived since the goods ordered from the supplier. The length of goods arriving depend on the commitment of suppliers of goods / supplier and the distance that must be traveled (Sitanggang, 2014).

Lead time this will affect the amount of raw materials used during the lead time, the longer the lead time, the greater the material that is required during the lead time (Slamet, 2007).

Supplies Security (Safety Stock)

Safety stock is often referred to as the supply of iron is a stock which is reserved as a safety on the continuity of the company production process to avoid the shortage of goods. Safety stock required to anticipate if the production process is not as planned.

Safety stock or safety stock according to Slamet (2007) shows the number of minimum stock must be owned company to maintain the possibility of delays in the arrival of raw materi-

als, which are defined as follows:

Safety Stock = (Minimum Usage - Consumption average) x Lead time

Point Booking Back (Reorder Point)

Sitanggang (2014) suggested reorder point is the amount of certain supplies companies must make a reservation back by taking into account the need for lead time,

Calculation formula reorder point (ROP) by Slamet (2007) as follows :

ROP = (LD x AU) + SS

Information :

LD =Lead time

AU =Average usage

SS =Safety Stock

Total Inventory Cost

In calculating the total cost of inventory that aims to prove that the presence of the number of purchases of raw materials are optimal, which is calculated by using the EOQ method will achieve the total cost of raw material inventories at a minimum. Total Inventory Cost (TIC) in accordance with what has been presented by Heizer and Render (2010) can be formulated as follows:

Information :

Q =number of units of messages

D =annual demand in units for supplies

S =the booking fee for each time pemes

H =inventory storage cost per unit per

year

RESULTS AND DISCUSSION

Based on research that has been done on Serabine that in conducting production activities Serabine require inventory management of raw materials that activity attempt is running smoothly.

Serabine policies applied in the calculation of inventories of raw materials used in the production process still using conventional methods. The application of the conventional method in the calculation of raw material inventory at Serabine indicated in the purchase of raw materials are carried out continuously and does not expect production needs. This is done to anticipate shortages of raw materials during the production process so that companies make purchases continuously.

Purchase of raw materials to the company issuing the booking fee for the raw material of coconut Rp. 60,000.00 for a message that the phone and transportation costs. Companies in the year book as much as 36 times.

Storage costs of raw materials in the form of coconut on Serabine electricity costs amounting to Rp. 1,320,000.00 and warehouse storage costs Rp. 1,800,000.00. The storage cost per unit is Rp. 6.778 per unit. The calculation of the quantity of raw material purchase coconut using EOQ (Economic Order Quantity) on Serabine are as follows:

Quantity Purchase Method EOQ

$$\begin{aligned} \text{EOQ} &= \sqrt{\frac{2 \cdot R \cdot S}{P}} \\ &= \sqrt{\frac{2 \times 5,340 \times 35,000}{8,769}} \\ &= \sqrt{\frac{377,800,000}{8,769}} \\ &= 206.46 \text{ (rounded 206 times)} \\ &= \text{Frequency of Purchase Raw Coconut} \\ N &= \frac{D}{Q} \\ &= \frac{5,340}{206} \\ &= 25.95 \text{ (rounded 206 times)} \end{aligned}$$

Rice flour for raw material for one order costs of Rp. 35,000 Cost of raw material storage Serabine rice flour in the form of electric charges and the cost of warehouse storage in one year is Rp. 2,280,000.00 with storage per unit is Rp. 8.769 The calculation of the quantity of raw material purchase rice flour using EOQ (Economic Order Quantity) on Serabine are as follows:

Quantity Purchase Method EOQ

$$\begin{aligned} \text{EOQ} &= \sqrt{\frac{2 \cdot R \cdot S}{P}} \\ &= \sqrt{\frac{2 \times 4,200 \times 35,000}{8,000}} \\ &= \sqrt{\frac{294,000,000}{8,000}} \\ &= 191.70 \text{ (rounded 192)} \end{aligned}$$

Frequency of Purchase Raw Materials Rice flour

$$\begin{aligned} N &= \frac{D}{Q} \\ &= \frac{4,200}{192} \\ &= 21.88 \text{ (rounded 26 times)} \end{aligned}$$

Based on the calculation of the purchase quantity and frequency of purchases of raw materials by using Economic Order Quantity knowable comparison purchase quantity and frequency of purchase of raw materials applied by the company in Table 4 below:

$$= 207.54 \text{ (rounded 208 pieces)}$$

The result of the calculation of safety stock and reorder point palm as raw material in the company Serabine EOQ method is number 150 with reorder point number 208 coconuts.

Table 4. Comparison of Quantity and Frequency Purchase of Raw Materials Conventional and Method EOQ

Raw material	Conventional method		EOQ Method		Difference	
	Kuant.	freq	Kuant.	freq	Kuant	freq
Coconut	298	36	341	24	48	12
Rice flour	151	36	206	26	55	10
Sugar	116	36	192	22	76	14

Based on Table 4, researchers know that the quantity of raw material purchase coconut, rice and sugar between the conventional method with EOQ method results to differ with the conventional method. From these results show that the quantity of purchases made using the EOQ method is optimal purchase compared to using conventional methods of companies due to the number of frequencies that fewer companies have been able to meet production Integration.

Companies in the operations needed raw materials inventory management to anticipate the risk of running out of stock of raw materials. This is done so that the production process can run smoothly so that the company will not experience a shortage of raw materials and excess raw materials. Therefore, the company supplies storage necessities extra to keep inventories of raw materials are often called safety stock or safety stock.

In the purchase of raw materials is also required the calculation of reorder point or re-order point (ROP) of raw materials needed for the production process using the method Economic Order Quantity (EOQ). Inventory reorder point intended that the receipt of raw materials are ordered on time and in the amount corresponding to the needs of the production process.

In Serabine raw material for coconut has a waiting time (lead time) for 2 days. Calculation of safety stock of raw material oil is as follows:

$$\begin{aligned} \text{Safety Stock} &= (\text{Maximum consumption} - \text{consumption average}) \times \text{LD} \\ &= (950 \text{ pieces} - 875 \text{ pieces}) \times 2 \\ &= 150 \end{aligned}$$

On the purchase of raw materials coconut calculation reorder point by using the EOQ method is needed in order not to interfere with the production process. The amount of raw material coconut ROP are as follows:

$$\begin{aligned} \text{ROP} &= (\text{LD} \times \text{AU}) + \text{SS} \\ &= (2 \times 28.77) + 150 \end{aligned}$$

Raw materials rice flour has a waiting time (lead time) for 2 days. Calculation of safety stock of raw material rice flour is as follows:

$$\begin{aligned} \text{Safety Stock} &= (\text{Maximum consumption} - \text{consumption average}) \times \text{LD} \\ &= (475 \text{ kg} - 445 \text{ kg}) \times 2 \\ &= 60 \text{ kg} \end{aligned}$$

On the purchase of raw materials rice flour reorder point magnitude calculation is as follows

$$\begin{aligned} \text{ROP} &= (\text{LD} \times \text{AU}) + \text{SS} \\ &= (2 \times 14.63 \text{ kg}) + 60 \text{ kg} \\ &= 89.26 \text{ kg (rounded 89 kg)} \end{aligned}$$

The result of the calculation of safety stock and reorder point raw material rice flour in companies Serabine EOQ method is at least 60 kg with reorder point some 89 kg of rice flour. In Serabine for sugar feedstock has a waiting time (lead time) for 2 days. Calculation of safety stock of raw material sugar is as follows:

$$\begin{aligned} \text{Safety Stock} &= (\text{Maximum consumption} - \text{consumption average}) \times \text{LD} \\ &= (370 \text{ kg} - 350 \text{ kg}) \times 2 \\ &= 40 \text{ kg} \end{aligned}$$

The calculation of reorder point (re-order point) sugar feedstock EOQ method as follows:

$$\begin{aligned} \text{ROP} &= (\text{LD} \times \text{AU}) + \text{SS} \\ &= (2 \times 11.51 \text{ kg}) + 40 \text{ kg} \\ &= 63.02 \text{ kg (rounded to 63 kg)} \end{aligned}$$

Calculation of safety stock and reorder point in the company's raw material sugar Sera-bine EOQ method is a 40kg with reorder point some 63 kg of rice flour. Here's a table Safety Stock and Reorder point raw material inventory EOQ method:

Table 5. Results of Safety Stock and the Reorder Point

Raw Material Type	Safety Stock	Reorder Point
Coconut	150	208
Rice flour	60	89
Sugar	40	63

Calculation of Total Inventory Cost (TIC) of raw materials doSerabine using konvensional method can be seen as follows:

Total Inventory Cost (TIC) using conventional methods for raw material coconut:

TIC = Total cost of storage + (P) (F)

$$= (\text{Rp. } 3,120,000.00) + (\text{Rp. } 60,000.00 \times 36)$$

$$= \text{Rp. } 3,120,000.00 + \text{Rp. } 2,160,000.00$$

$$= \text{Rp. } 5,280,000.00$$

Calculation of the total cost of raw material inventory coconut using the formula Total Inventory Cost (TIC) based on the EOQ method is as follows:

Total Inventory Cost EOQ method for coconut raw materials:

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

$$= \text{Rp. } 1,461,750.85 + \text{Rp. } 1,461,702.59$$

$$= \text{Rp. } 2,923,453.44$$

Based on calculations using the conventional method of generating companies TIC of Rp. 5,280,000.00 while EOQ method obtained results Rp. 2,923,453.44, the results showed the use EOQ method for coconut raw materials more efficiently.

Total Inventory Cost (TIC) using conventional methods for raw material rice flour:

TIC = Total cost of storage + (P) (F)

$$= (\text{US } \$ 2,280,000.00) + (\text{Rp. } 35,000.00 \times 36)$$

$$= \text{Rp. } 2,280,000.00 + \text{Rp. } 1,260,000.00$$

$$= \text{Rp. } 3,540,000.00.$$

Calculation of the total cost of raw material supplies of rice flour using the formula Total Inventory Cost (TIC) based on the EOQ method is as follows:

Total Inventory Cost EOQ method for rice flour raw material:

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

$$= \text{Rp. } 905,260.10 + \text{Rp. } 905,223.87$$

$$= \text{Rp. } 1,810,483.97$$

Based on calculations using the conventional method of generating companies TIC of Rp. 3,540,000.00. whereas the results obtained using the EOQ method the results showed Rp. 1,810,483.97 use EOQ method for coconut raw materials more efficiently.

Total Inventory Cost (TIC) using conventional methods for raw material sugar.

TIC = Total cost of storage + (P) (F)

$$= (\text{Rp. } 1,040,000.00) + (\text{Rp. } 35,000.00 \times 36)$$

$$= \text{Rp. } 1,040,000.00 + \text{Rp. } 1,260,000.00$$

$$= \text{Rp. } 2,300,000.00$$

Calculation of the total cost of raw material inventory sugar using the formula Total Inventory Cost (TIC) based on the EOQ method is as follows:

Total Inventory Cost EOQ method for the raw material sugar:

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

$$= \text{Rp. } 766,823.16 + \text{Rp. } 766,800.00$$

$$= \text{Rp. } 1,533,623.16$$

Based on calculations using the conventional method of generating companies TIC of Rp. 2,300,000.00. whereas the results obtained using the EOQ method. The results showed Rp. 1,533,623.16 use EOQ method for coconut raw materials more efficiently.

The following table shows a comparison of Total Inventory Cost (TIC), based on the conventional method by using Economic Order Quantity:

Table 6. Comparison TIC of Conventional Method and EOQ Method

Raw Material Type	Conventional TIC	TIC EOQ	Difference
Coconut	Rp. 5,280,000.00	Rp. 2,923,453.44	Rp. 2,356,546.56
Rice flour	Rp. 3,540,000.00	Rp. 1,810,483.97	Rp. 1,729,516.03
Sugar	Rp. 2,300,000.00	Rp. 1,533,623.16	Rp. 766,376.84

Based on Table 6 show that the calculation of Total Inventory Cost (TIC) using Economic Order Quantity (EOQ) than using the conventional method used by the company there is a difference for palm as raw material for Rp. 2,356,546.56, rice flour raw material there is a difference of Rp 1,729,516.03 and raw materials there is a difference of Rp 766,376.84. This shows that the policy Serabine using the conventional method in calculating the total cost of inventory is not efficient when compared to using EOQ method with a considerable margin. From the calculation of the total cost of inventory using EOQ method if the method using the company, the company can make cost savings.

CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis and discussion dike-mukaan in this study, it can be concluded that the application of management policies raw material inventory control using Economic Order Quantity (EOQ) produces raw material inventories more optimal than using conventional methods used by the company. Total Inventory Cost (TIC) resulting from the EOQ method is more efficient than using conventional methods.

If the company applying the method Economic Order Quantity then, in the purchase of raw materials and frequency of purchase of raw materials will be optimized due to perform frequency of purchase fewer but can meet the needs of supply of raw materials.

If the company applying EOQ method will be saving on the total cost of supply for raw materials coconut Rp. 2,356,546.56, to the raw material rice flour Rp. 1,729,516.03 and for raw materials amounting to 766,367.84 sugar. The savings on the total cost of raw materials inventory it will optimize the company's profits.

This study have adequate limitations of the study is only done on a company with the same conditions with other companies, so that the study can not be generalized to all companies.

Based on the research that has been done, then the suggestions are put forward, namely the use EOQ method applied by the company to manage the supply of raw materials to the optimum so that enterprises in the total cost of inventory more efficiently. For further research suggested that similar studies should conduct research using other raw material inventory control that is expected to be a comparison of the optimal inventory, so as to obtain results that are more effective and efficient.

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