# Assessing the cost efficiency of raw materials inventory using the economic order quantity method

**Herlambang\* & Nanda Sekar Ayu**

Universitas Pamulang, Indonesia
\*Email: herlambanghery@yahoo.com

**ABSTRACT**

This study aims to assess the cost efficiency of raw material inventory using the Economic Order Quantity (EOQ) method at PT. XYZ. The data used in this study is documentation such as data on product orders for raw materials, lead time data for raw materials, and Safety Stock data for raw materials, average purchase data for product raw materials, purchase cost data, storage costs and ordering costs for raw materials. products, interviews and observations to related parties such as staff assistant managers, with supervisors Planning Production and Inventory Control regarding inventory in the raw material warehouse. The type of research used is a case study, where the research is carried out intensively in detail and in depth on an object under study. This research method is interview and documentation method. The variables in this study are inventory and use of raw materials. The analysis used is the Economic Order Quantity method. The results of this study indicate that the conditions in the supply of raw materials at PT. XYZ is not good. It can be seen from the frequent shortage of raw materials for the production process, so orders are not on time. Therefore, PT. XYZ controls the inventory of raw materials by storing raw material reserves, so that production continues and is not hampered.

**Keywords:** Cost Efficiency, Raw Material Inventory, Economic Order Quantity.

## 1. INTRODUCTION

Inventory of raw materials is an important factor in the company, so that the supply of raw materials must be sufficient to ensure the need for smooth production activities (Suwandi et al., 2014). The amount of raw material inventory should not be too little and not too much. Lack of raw materials can hinder production activities, the inhibition of the production process will certainly affect the level of sales which results in the company not being able to meet consumer demand (Sakkung & Sinuraya, 2012). This ultimately affects the company's profits and consumer confidence in the company. If there is an excess of raw materials, it will cause various risks for the company, namely the amount of interest expense that must be borne, additional costs for storing and maintaining raw materials in the warehouse, increasing the possibility of losses due to damage and decreasing the quality of these materials, so as to minimize

the profits obtained by the company (Rahmawati, 2017). Inventories are goods that are stored for use in future periods to fulfill certain purposes. What is meant by inventory in this study is the company's property which will be processed for the production process so that it becomes semi-finished goods (Lahu & Sumarauw, 2017).

Basically all companies carry out material planning and control with the main objective of reducing (minimizing) costs and maximizing profits within a certain time. In planning and controlling raw materials, the main problem occurs is to organize the most appropriate material inventory so that production activities are not disrupted and the funds invested in the material inventory are not excessive (Sulaiman & Nanda, 2018). These problems affect the determination of (1) how much quantity to buy in a certain accounting period, (2) how much or what quantity to buy every time a purchase is made and (3) when to order materials, (4) what is the minimum quantity materials that

the company avoids production bottlenecks due to material delays, and what is the maximum quantity of material in inventory so that the funds held are not excessive (Pamungkas & Sutanto, 2011).

To minimize the cost of the inventory can be used analysis of "Economic Order Quantity" (EOQ). EOQ is the most economical volume or number of purchases to be made at each purchase (Prawirosentono, 2001). The EOQ method seeks to achieve the minimum possible inventory levels, lower costs and better quality. Planning the EOQ method in a company will be able to minimize the occurrence of out of stock so that it does not interfere with processes within the company and is able to save inventory costs incurred by the company because of the efficiency of raw material inventory within the company concerned (Padmantyo & Tikarina, 2018). In addition, with the application of the EOQ method, the company will be able to reduce storage costs, save space, both for warehouse rooms and work spaces, solve problems that arise from the large amount of inventory piling up so as to reduce the risk that can arise because of existing inventory in the warehouse such as wood that has been piled up. very susceptible to fire (Hotasadi & Arofah, 2017). This EOQ analysis can be used easily and practically to plan how many times a material is purchased and in quantity how many times it is purchased (Jayanti & Prapitasari, 2015).

Raw material inventory control for PT. XYZ is very important for the continuity of the production process. With this raw material inventory control, it can help companies in making decisions to advance the company (Kadim, 2017). The company can control the raw material inventory by using the Economic Order Quantity (EOQ) method. The EOQ method can be used easily and practically to plan the frequency of ordering raw materials in a certain period and how much more economical inventory orders are (Meitriana et al., 2014). Economic Order Quantity (EOQ) is the quantity of goods that can be obtained with minimal costs or often referred to as the optimal purchase amount (Riyanto, 2013).

## 2. LITERATURE REVIEW

### A. Internal control
According to Romney et al (2015) internal control is a process that is implemented to provide guarantees that meet several objectives of internal control, including safeguarding assets, maintaining records in sufficient detail for proper and accurate reporting of company assets, provide accurate and reliable information, prepare financial reports with specified criteria, encourage and improve operational efficiency, encourage compliance in managerial matters, and meet the requirements of existing regulations and regulations.                .

Control is a management process that ensures itself, as far as possible, that the activities carried out by members of an organization are in accordance with their plans and policies. Control revolves around activities providing observation, monitoring, investigation and evaluation of all parts of management so that the goals set can be achieved (Tampubolon, 2020).

### B. Raw Material Inventory
According to Rudianto (2015) Inventory is a number of finished goods, raw materials, and goods in process owned by the company with the aim of being sold or processed further. According to Handoko (2011), Inventory is everything or organizational resources that are stored in anticipation of meeting demand. According to Warren et al (2016), inventory is merchandise that can be stored for later sale in the company's business operations and can be used in the production process or can be used for certain purposes.

According to Mulyadi (2010) the notion of raw materials is a material that forms a comprehensive part of the finished product. Raw materials processed by manufacturing companies can be obtained from local purchases, imports or self-processing. According to Widilestariningtyas et al (2012) raw materials are materials that form an integral part of the finished product and are included explicitly in the calculation of product costs. And according to Wibowo (2014) raw materials are goods that will be part of the finished product which can be easily followed by the cost. It can be concluded that raw materials are goods or materials that will become finished products that are ready to be sold.

According to Assauri (2004) raw material inventory is an inventory of tangible goods used in the production process, which can be obtained from natural sources or purchased from suppliers or from companies that produce raw materials for manufacturing companies that use them.

### C. Economic Order Quantity (EOQ)
According to Haming & Nurnajamuddin (2007) Economic Order Quantity is the number of units ordered at the cheapest (economical) or optimal cost. Meanwhile, according to Jay & Barry (2016) EOQ is one of the oldest and widely known inventory control techniques, this inventory control method answers 2 (two) important questions, when to order and how much to order. In addition, the EOQ method aims to determine the optimal number and frequency of purchases. By determining the optimal number and frequency of purchases, optimal inventory control will be obtained. This economic order quantity model is a commonly used model as an inventory control technique.

## 3. METHODOLOGY

This type of research uses a comparative descriptive method. Descriptive method is a research method that is arranged in order to provide a systematic description of scientific information originating from the subject or object of research. Descriptive research focuses on a systematic explanation of the facts obtained during the research. The purpose of descriptive research is to make a systematic, factual, and accurate description, picture, or painting of the facts, characteristics and relationships between the phenomena being investigated. While comparative analysis is a research method by collecting, processing, and analyzing various kinds of data so that a conclusion can be drawn. comparative method is used to find out how the comparison  of the inventory  method between the

methods used by the factory and the Economic Order Quantity method can streamline inventory costs. The time for this research to be carried out is December 2020 by observing the research location.

Qualitative research is assisted by other instruments, namely interview guidelines. Researchers must have the ability to record data in the form of. Descriptive analysis is to describe some of the conditions of the object of research briefly obtained from the results of data collection or answers to questionnaires by respondents. According to Sugiyono (2016) descriptive statistics are statistics used to analyze data by describing or describing the data collected as they are without intending to make conclusions that apply to the public or generalizations.

Included in descriptive analysis are the presentation of data through tables, graphs, pie charts, pictograms, calculation of mode, median, mean, calculation of deciles, percentiles, calculation of data distribution through calculation of average and standard deviation, calculation of percentages. The data presented in descriptive statistics are usually in the form of measures of data concentration (mean, median, and mode), measures of data spread (standard deviation and variance), tables and graphs (histograms, pie and bars). Statistical data obtained in the study need to be summarized properly and regularly. This is intended to obtain a clearer picture of the set of data obtained either on the sample or population.

The data collection instrument used in the data source used in this study is a secondary data source. Data collection techniques used in this study were interviews and documentation. The research instruments used in this study were interview guidelines and documentation guidelines. The data used in this study are classified as follows:
1. Request data for product raw material orders
2. Raw material lead time data
3. Data Safety Stock for materials.
4. Data on the average purchase of product raw materials.
5. Data on purchase costs, storage costs and the cost of ordering product raw materials.
6. Interviews and observations with related parties

# 4. RESULT

1. Components of Internal Control Over Raw Material Inventory
   a. Control Environment
   1) Integrity and Ethical Value
      Integrity and ethical values at PT. XYZ is not enough yet. Most employees in general have not fully implemented the rules and policies set by the company, one example is employees who arrive late.
   2) Organizational Structure
      The organizational structure owned by PT. XYZ is clear, and the division of each task has been fully implemented by each employee.
   3) Commitment to Competence
      In the process of recruiting employees, usually new employees will attend a training period, where new employees are trained to know how to control the inventory of raw materials, work in process and finished goods. The company determines the right candidate for

in accordance with their integrity and competence, so the employees who will be recruited must have good abilities and understand the general picture of how to work in the company.

b. Risk Assessment
   PT. XYZ has realized that there are risks that will inevitably be faced by the company, such as running out of stock of raw materials in the warehouse, delays in the arrival of raw materials which causes the production process to be hampered and there is often a difference between the physical inventory and the notes on the stock card. Based on the risk assessment that occurred at PT. XYZ, related parties such as the warehouse department, PPIC (Planning Production and Inventory Control) and purchasing departments evaluate this risk by conducting a stock take every month, requesting purchases of goods from a long time before the goods are needed for the production process. and installing barcodes to prevent loss of raw materials in the warehouse.

c. Control Activities
   Control activities carried out at PT. XYZ consists of:
   1) Sufficient Segregation of Duties
      In carrying out its control, PT. XYZ implements the segregation of duties or control functions quite well where the functions of purchasing, warehouse, PPIC (Planning Production and Inventory Control), payment, production, and finance are carried out by separate departments.
   2) Sufficient Records Document
      PT. XYZ has made documents for the purpose of monitorin its inventory, but in recording as backups the company does not do so so that if there is a loss of documents, the company does not have backup data to fulfill requests from related departments.
   3) Physical Control
      Physical protection of raw material inventory on PPT. XYZ includes safeguarding physical assets such as purchase requisition forms, 2 (two) copies of Purchase Order (PO) from the purchasing department, copy of receipts and stock cards that are sufficient for the warehouse. So this can make it easier for the employee concerned to find data if needed.
   4) Information and Communication
      PT. XYZ usually communicates its information orally and in writing. Oral communication is carried out through briefings and special meetings for the head of the section to report all activities to superiors who then evaluate the performance of all employees. While written communication is delivered through letters which are usually displayed on bulletin boards.
   5) Monitoring
      Monitoring is carried out through necessary evaluations and assessments as an effort to follow up on the results of reports on inspections. The monitoring process at PT. XYZ is usually carried out by the Director of Operations who is assisted by the General Manager. Efforts made by the company regarding the implementation of monitoring

in relation to the implementation of internal control of raw material inventory by observing directly whether the procedures affecting inventory and payments have been carried out in accordance with the provisions. In the event of a loss of raw materials, the warehouse section makes a report of the loss of goods which is known by the PPIC (Planning Production and Inventory Control) section as an accountability report to the Director of Operations and General Manager.

## 2. Internal Control of Raw Material Inventory

Raw materials ordered by the purchasing department usually arrive at the company after 7 days after the order is placed. After the raw materials are received, the quantity and quality of the raw materials are usually checked again by the warehouse department then given the arrival date and purchase order number, and after that it is entered into the warehouse. Supervision of raw materials stored in warehouses is usually carried out once a month which includes stock taking.

The system of using raw materials carried out by PT. XYZ uses the FIFO (First In First Out) system, where the first raw materials that enter will be used/expressed first for the production process. The implementation of the FIFO (First In First Out) system carried out by PT. XYZ as follows:

a. Before the ordered raw materials arrive, the position of the raw materials to be used for production is rearranged according to the arrival of raw materials.
b. When the raw materials arrive, the quantity and quality of the raw materials are checked by equating the quantity of raw materials ordered with the incoming raw materials.
c. After checking, the raw materials are barcoded.
d. Sticker raw materials are divided between intact and those that have gone through the slitting process.

## 3. Implementation of Raw Material Inventory Order

PT. XYZ places an order for raw materials if it receives an order from a customer. The frequency of ordering raw materials in 1 (one) year is on average 12 (twelve) times. Data regarding the purchase of raw materials and raw material needs of PT. XYZ can be seen in Table 1 below:

**Table 1.**
**Purchase Data and Sticker Raw Material Needs at PT. XYZ**

| No. | Month | Amount of Raw Material Purchase (Mtr) | Amount of Raw Material Need (Mtr) |
|---|---|---|---|
| 1 | January | 1.713 | 3.906 |
| 2 | February | 854 | 5.520,96 |
| 3 | March | 4.139,9 | 4.322,56 |
| 4 | April | 6.323 | 4.157 |
| 5 | May | 1.282 | 3.310,78 |
| 6 | June | 953 | 1.321,58 |
| 7 | July | 5.118 | 4.302,3 |
| 8 | August | 5.757 | 6.193,41 |
| 9 | September | 5.896,4 | 4.894,99 |
| 10 | October | 2.938 | 3.638 |
| 11 | November | 5.567 | 3.684 |
| 12 | December | 2.938 | 3.490 |
| **Amount** | | **43.479,3** | **48.741,58** |

Source: Data Processed by the Author, 2020

Based on Table 1, it can be seen that the average purchase of raw materials was 43,479.3 Mtr and the average use of raw materials was 48,741.58. The highest purchase of raw materials occurred in September with a total purchase of 5,896.4 Mtr and the lowest purchase of raw materials occurred in February of 854 Mtr. Meanwhile, the highest use of raw materials occurred in August with the amount of 6,193.41 Mtr and the lowest amount of use occurred in December of 3,490 Mtr. The total purchase of raw materials was 43,479.3 Mtr and the total use of raw materials was 48,741.58 Mtr. From these data it can be concluded that the amount of raw material needed is higher than the amount of raw material purchased.

From the description above, in storing inventory of raw materials the company requires inventory costs. Inventory costs are costs that arise as a result of the inventory of raw materials. Inventory costs consist of ordering costs and holding costs. The costs associated with the existence of inventory need to get more attention for the inventory are as follows:

a. Ordering Fee
   Order costs are costs incurred due to the purchase of raw materials such as telephone costs used to contact and confirm to suppliers, and internet costs used to send scanned POs (Purchase Orders) to suppliers via e-mail.

**Table 2.**
**Ordering Fee PT. XYZ**

| No. | Fee Type | Total Cost (Rp) |
|---|---|---|
| 1 | Phone Charges | 1.300.468 |
| 2 | Internet Fee | 200.937 |
| **Total** | | **1.501.405** |

Source: Data Processed by the Author, 2020

Table 2 shows the costs incurred for ordering raw materials. The following is the calculation of the cost of ordering each time you order (S):

$$= \frac{(Total\ Order\ Cost)}{(Order\ Frequency)}$$

$$= \frac{(Rp.1.501.405}{12}$$

$$= Rp.\ 125.117$$

## b. Storage Fee

Storage costs are costs that arise because there is inventory in the warehouse. Storage costs include the cost of electrical goods for the warehouse, the cost of warehouse employees, and the cost of backup if the goods are damaged.

**Tabel 3**
**Storage Fee PT. XYZ**

| No. | Fee Type | Total Cost (Rp) |
|---|---|---|
| 1 | Warehouse Electricity Cost | 889.975 |
| 2 | Warehouse Employee Fee | 36.000.000 |
| 3 | Broken Backup Fee | 26.229.301 |
| **Total number** | | **63.119.276** |

Source: data processed by the author, 2020

Table 3 shows the costs incurred for the storage of raw materials. The following is the calculation of the cost of storing raw materials:

$$= \frac{(Total\ Storage\ Cost)}{(Total\ Raw\ Material\ Needs)}$$

$$= \frac{(Rp.\ 63.119.276)}{(48.741,58\ Mtr)}$$

$$= Rp.\ 1.295$$

To find out the total cost of raw material inventory that must be issued by PT. XYZ is as follows:

**a. Purchase of raw materials (Q)**

Can be calculated based on company policy that orders raw materials once every 1 (one) month, it can be seen as follows:

$$= \frac{(Total\ Raw\ Material\ Needs)}{(Order\ Frequency)}$$

$$= \frac{(48.741,58\ Mtr)}{12}$$

$$= 4.061,79\ Mtr$$

Based on the calculation, the amount of raw material purchases at PT. XYZ in one order is 4,061.79 Mtr.

**b. Total Inventory Cost**

To be able to calculate the inventory costs required by the company, it can be seen:

1) Total raw material requirement (D) = 48.741,58 Mtr
2) Average purchase of raw materials (Q) = 4.061,79 Mtr
3) One-time booking fee (S) = Rp. 125.117
4) Storage cost per Meter (H) = Rp. 1.295

Total inventory cost (TIC) as follows:

$$= \left[\frac{D}{Q}S\right] + \left[\frac{Q}{2}H\right]$$
$$= \left[\frac{48.741,58}{4.061,79}Rp.\ 125.117\right] + \left[\frac{4.061,79}{2}Rp.\ 1.295\right]$$
$$= Rp.\ 1.501.407 + Rp.\ 2.630.009$$
$$= Rp.\ 4.131.416$$

Based on the calculation results, the total cost of inventory that must be borne by PT. XYZ is Rp. 4,131,416

## 4. Metode Economic Order Quantity (EOQ)

EOQ (Economic Order Quantity) is a method regarding the procurement or supply of raw materials in a company by calculating the number of goods that can be obtained with minimum costs. Based on calculations using the EOQ (Economic Order Quantity) method, it is possible to obtain an economical total cost of inventory for raw materials.

a. Economical purchase of raw materials.

Economical purchasing of raw materials is based on:
1) Total raw material requirement (D) = 48.741,58 Mtr
2) One-time booking fee (S) = Rp. 125.117
3) Storage cost per Meter (H) = Rp. 1.295

After knowing what are the things that underlie the purchase of raw materials, the amount of economical raw material purchases using the EOQ (Economic Order Quantity) method is as follows:

$$Q^* = \sqrt{\frac{2DS}{H}}$$

$$Q^* = \sqrt{\frac{2\ x\ 48.741,58\ Mtr\ x\ Rp.125.117}{Rp.1.295}}$$

$$Q^* = 3.068,93\ Mtr$$

Based on the calculation results, the amount of raw material purchases that are economical according to the EOQ (Economic Order Quantity) method is 3,068.93 Mtr.

b. **Frequency of Ordering Raw Materials**

By using the EOQ (Economic Order Quantity) method, the number of ordering frequencies in one year can be calculated as follows:

$$F = \frac{D}{Q^*}$$

$$F = \frac{48.741,58\ Mtr}{3.068,93\ Mtr}$$

$$F = 15,88\ (rounded\ to\ 16\ times)$$

Based on the calculation results, the frequency of ordering raw materials according to the EOQ (Economic Order Quantity) method is 16 times in 1 year.

c. **Total Inventory Cost**

Known :
1) Total raw material requirement (D) = 48.741,58 Mtr
2) One-time booking fee (S) = Rp. 125.117

3) Storage cost per Meter (H) = Rp. 1.295

After knowing, the total cost of inventory is as follows:

$$TIC = \left[\frac{D}{Q*}S\right] + \left[\frac{Q*}{2}H\right]$$

$$TIC = \left[\frac{48.741,58\ Mtr}{3.068,93\ Mtr}Rp.125.117\right] + \left[\frac{3.068,93\ Mtr}{2}Rp.1.295\right]$$

$$TIC = Rp.\ 1.987.142 + Rp.\ 1.987.132$$

$$TIC = Rp.\ 3.974.274,-$$

Based on the calculation results, total persediaan bahan baku PT. XYZ bila menggunakan metode EOQ (Economic Order Quantity) sebesar Rp. 3.974.274,-

**d. Re-Order Point (ROP)**

PT. XYZ usually waits for raw material orders to arrive for 7 (seven) days (L). With an average number of employees working 300 days a year. Before calculating the Re Order Point, it is possible to find out the level of raw material use per day in the following way:

$$d = \frac{D}{t}$$

$$d = \frac{48.741,58\ Mtr}{300}$$

$$d = 162,47\ Mtr$$

Then the ROP is as follows:

ROP = d x L

ROP = 162,47 Mtr x 7 days

ROP = 1.137,29 Mtr

Based on the calculation results, the company must place an order for raw materials amounting to 1,137.29 Mtr.

**5. Comparison of Company Policy With EOQ Metode Method**

Based on the results of calculations using company policies and using the Economic Order Quantity method, it is known, so that it can be compared to obtain more efficient results.

**Table 4.**
**Comparison of Company Policy Inventory with Economic Quantity Order Method**

| No. | Information | Company Policy | EOQ method |
|-----|-------------|----------------|------------|
| 1 | Average purchase of sticker raw materials | | |
| 2 | Total inventory cost | Rp. 4.131.416 | Rp. 3.974.274 |
| 3 | Order Frequency | 12 Kali | 16 Kali |
| 4 | ROT | - | 1.137,29 Mtr |

Source: Data Processed by the Author, 2020

Based on Table 4, the comparison of the company's inventory policies with the EOQ (Economic Order Quantity) method:

a. The average purchase of economical raw materials using the EOQ (Economic Order Quantity) method is more efficient with a total of 3,068.93 Mtr or 24.5% of the company's policy

The frequency of ordering raw materials when using the EOQ (Economic Order Quantity) method is 16 (sixteen) orders in 1 (one) year and only costs Rp. 3,974,274 or 3.8% of company policy. When compared with the policy of the company that orders 12 (twelve) times in 1 (one) year by spending an inventory cost of Rp.4,131,416, then by using the EOQ (Economic Order Quantity) method the company can save inventory costs of Rp. 157.142.

b. The reorder point or ROT (Re Order Point) in the use of the EOQ (Economic Order Quantity) method aims to anticipate delays in the arrival of raw materials. By calculating the EOQ (Economic Order Quantity) method, the company must re-stock when the raw material inventory is at the level of 1,137.29 Mtr.

## 4. DISCUSSION

Orders for raw materials are made 12 times a year. Ordering raw materials is based on the needs of the production process and the condition of the inventory of raw materials in the warehouse. The use of raw materials at PT. XYZ is adjusted to the production plan that has been compiled. Based on the production plan, the company can estimate the raw material needs to be used.

The system used by PT. XYZ is the FIFO method. The implementation of the FIFO system carried out by the company has been quite effective, starting from the rearrangement of the position of raw materials before the newly ordered raw materials arrive, when receiving raw materials the quality and quantity are checked and barcodes are given to raw materials.

The results of the comparison of inventory costs and raw material purchasing costs between company policies and the EOQ (Economic Order Quantity) method, it can be recommended alternative methods of controlling raw material inventory for PT. XYZ. The recommended alternative method is expected to save costs incurred by the company, through savings in purchasing and supply of raw materials.

The results of the comparison of inventory costs and savings from the EOQ (Economic Order Quantity) method to company policies, show that company policies regarding raw material inventory control are not yet efficient, where costs for inventory can still be reduced to a lower number.

## 5. CONCLUSIONS

Implementation of internal control over raw material inventory control at PT. XYZ is not good enough yet. There is one element of the internal control component that has not been effective and should be improved, namely adequate record documents. Based on the calculation, the total cost of inventory using the EOQ (Economic Order Quantity) method is more efficient than using the policies implemented by PT. XYZ.

# REFERENCES

Assauri, S. (2004). Manajemen Produksi dan Operasi. Penerbit Fakultas Ekonomi Universitas Indonesia.

Haming, M., & Nurnajamuddin, M. (2007). Manajemen Produksi Modern Buku 2: Operasi Manufaktur dan Jasa. PT. Bumi Aksara.

Handoko, H. (2011). Dasar-Dasar Manajemen Produksi Dan Operasi Yogyakarta: BPFE.

Hotasadi, H., & Arofah, J. N. (2017). Penerapan metode economic order quantity (eoq) dalam pengendalian persediaan bahan baku pada Le'Tat Bakery. Jurnal ACSY: Jurnal Accounting Politeknik Sekayu, 6(2), 87–98.

Jay, H., & Barry, R. (2016). Manajemen Operasi Edisi 11. Salemba Empat.

Jayanti, N. K. D. A., & Prapitasari, L. P. A. (2015). Penerapan Metode EOQ (Economic Order Quantity) Pada Peramalan Stok Barang. Proceedings Konferensi Nasional Sistem Dan Informatika (KNS&I).

Kadim, A. (2017). Penerapan Manajemen Produksi & Operasi Di Industri Manufaktur. Mitra Wacana Media.

Lahu, E. P., & Sumarauw, J. S. B. (2017). Analisis Pengendalian Persediaan Bahan Baku Guna Meminimalkan Biaya Persediaan Pada Dunkin Donuts Manado. Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis Dan Akuntansi, 5(3).

Meitriana, S. P. M. A., Wayan Cipta, M. M., & Astuti, I. G. A. W. (2014). Penerapan Metode Economic Order Quantity Persediaan Bahan Baku pada Perusahaan Kopi Bubuk Bali Cap Banyuatis. Jurnal Jurusan Pendidikan Ekonomi Undiksha, 4(1), 5222.

Mulyadi. (2010). Sistem Akuntansi. Salemba Empat.

Padmantyo, S., & Tikarina, Q. N. (2018). EOQ dan JIT: Mana yang Lebih Tepat Diterapkan Perusahaan Manufaktur?

Pamungkas, W. T., & Sutanto, A.(2011). Analisis Pengendalian Bahan Baku Menggunakan Metode EOQ (Economic Order Quantity) (Studi Kasus pada PT Misaja Mitra Co. Ltd). Jurnal Fokus Manajemen Bisnis, 1(2), 144–164.

Prawirosentono, S. (2001). Manajemen Operasi: Analisis dan Studi Kasus. Bumi Aksara.

RAHMAWATI, F. A. (2017). Analisa Persedian Bahan Baku Dengan Metode EOQ Untuk Meminimalkan Biaya Persediaan Pada UD KHARISMA Sidoarjo. UNIVERSITAS 17 AGUSTUS 1945.

Riyanto, B. (2013). Dasar-dasar Pembelanjaan Perusahaan (Kedelapan (ed.); Empat). Yayasan Penerbit Gajah Mada.

Romney, M. B., Steinbart, P. J., & Cushing, B. E. (2015). Accounting information systems. Pearson Boston, MA.

Rudianto. (2015). Pengantar Akuntansi Konsep dan Teknik Penyusunan Laporan Keuangan. Erlangga.

Sakkung, C. V., & Sinuraya, C. (2012). Perbandingan Metode EOQ (Economic Order Quantity) Dan JIT (Just In Time) Terhadap Efisiensi Biaya Persediaan dan Kinerja Non-Keuangan (Studi Kasus Pada Pt Indoto Tirta Mulia). Maksi, 5(2), 220310.

Sugiyono. (2016). Memahami Penelitian Kualitatif. Bandung: Alfabeta.

Sulaiman, F., & Nanda, N. (2018). Pengendalian Persediaan Bahan Baku Dengan Menggunakan Metode EOQ Pada UD. Adi Mabel. Jurnal Teknovasi: Jurnal Teknik Dan Inovasi, 2(1), 1–11.

Suwandi, N.W.P., Meitriana, M. A., & Tripalupi, L. E.(2014). Sistem Pengendalian Persediaan Bahan Baku pada Perusahaan Tempe Tahu Cap Malang di Desa Petiga, Kecamatan Marga, Kabupaten Tabanan Tahun2011-2012. Jurnal Pendidikan Ekonomi Undiksha, 4(1).

Tampubolon, M. P. (2020). CHANGE MANAGEMENT: Manajemen Perubahan: Individu, Tim Kerja, Organisasi. Mitra Wacana Media.

Warren, C. S., Reeve, J. M., & Duchac, J. (2016). Financial & managerial accounting. Cengage Learning.

Wibowo, S. (2014). Petunjuk Mendirikan Perusahaan Kecil (Revisi). Niaga Swadaya.

Widilestariningtyas, O., Anggadini, S. D., & Firdaus, D. W. (2012). Akuntansi Biaya. Graha Ilmu.