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Analysis of Goods Production Control Using The EOQ and ROP Method In Malaya Mart Bangkinang

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Abstract*. This study aims to compare the application of the EOQ method with the method used by the company in controlling the supply of merchandise inventory at Malaya Mart Bangkinang. This study analyzes the application of using the EOQ and ROP methods in 2020. From the research that has been done, it is known that the company's order frequency and total inventory costs have a large value and the company's policy does not have calculations for securing inventory and reorder points. Compared to using the EOQ and ROP methods, the frequency and total inventory costs have a small value and the EOQ and ROP methods calculate safety stock for merchandise inventory stock and re-inventory for merchandise inventory control.*

Keywords*: EOQ, Inventory, ROP*

Abstrak. Penelitian ini bertujuan untuk mengetahui perbandingan penerapan antara metode EOQ dengan metode yang dilakukan perusahaan dalam pengendalian menyediakan persediaan barang dagang pada Malaya Mart Bangkinang. Penelitian ini menganalisis penerapan menggunakan metode EOQ dan ROP pada tahun 2021. Dari penelitian yang telah dilakukan, diketahui bahwa frekuensi pemesanan perusahaan dan total biaya persediaan memiliki nilai yang besar serta kebijakan perusahaan tidak memiliki perhitungan untuk pengamanan persediaan dan titik pemesanan kembali. Dibandingkan dengan menggunakan metode EOQ dan ROP nilai frekuensi dan total biaya persediaan memiliki nilai yang kecil dan metode EOQ dan ROP menghitung persediaan pengaman untuk stock persediaan barang dagang serta ulang persediaan untuk pengendalian persediaan barang dagang.

Kata kunci: EOQ, Persediaan, ROP

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BACKGROUND

The rapid development of the business world forced many trading companies to face tough competition. The owners of these trading companies must of course be able to maintain and further develop their trading operations. In order to maintain a continuous business operation process, the owner of a trading company must be able to handle as many resources within the company as possible. According to (Tamodia, 2013) a trading company is defined as an organization that carries out business activities with Purchase goods from other parties or companies and then sell them back to the public. Commercial company on common is the activity of selling a product provided by a supplier or producer without changing the product to add value and sell the product. One of the most important parts of a trading company is inventory. In general, exhausted goods can be defined as goods used for future purposes.

Inventory is a resource owned by a company that can be converted into cash when a transaction on sale occurs but if the type, quality, and quantity of goods requested by the customer is not available, revenue will decrease or even disappear. In the inventory of a kind of goods will have many differences such as names, sizes, different values and different prices. The problem of inventory is one of the problems that companies should pay attention to because inventory plays a very important role in launching the company's operational activities. According to (Budi, Saksono, & Wulandari, 2021) inventory is a commodity that is purchased and then stored for sale in the normal operation of the company so that the company always pays greater attention to inventory, in the trading company, the commodities are usually the largest post in the smooth asset, therefore this inventory post is enough to get special attention.

To be able to create the maximum inventory in a company needs a well-planned control process, of course in managing all the aspects required to run such a company requires control. According to (Ginting, sari, & Sagala, 2019) control is an effort to a specific goal through expected behavior. The control of the company is carried out in order to ensure that the operations that the company operates have been carried on according to the planned. According to (Harto, Budi, & Dinda, 2018) control is a systematic effort to goals effectively and efficiently by comparing work performance with plans and taking appropriate action to correct existing differences. Every company must have control to the company's operational goals.

According to Budget 2020, control is the management activity in monitoring the implementation of plans and carrying out necessary improvement actions. According to (Zahirah, Hassanah, & Arista, 2016) EOQ is a method used in determining the quantity of goods ordered optimally at a minimum cost. The Economic Order Quantity (EOQ) method is the most economical amount of purchase to be made at each purchase, EOQ is also supported by the ROP method used to calculate when the company makes a return order of goods, but when delayed ROP calculation will result in material or supply shortage costs and too fast ROP will cause additional costs. In addition, the EOQ method reduces inventory costs, saves space and solves problems arising from surplus and shortage of inventory and reduces the risks that may arise from inventory which ultimately results in losses for the company.

Malaya Mart Bangkinang is a private-owned trade company that sells a variety of food and beverages in packaging, kitchen material needs, instant cooking materials, household needs, tools and make-up, accessories, school supplies, baby appliances, and other needs. To meet customer demands, Malaya Mart provides all the supplies that need to be sold each month. However, not all types of goods do re-order at the same time, but they are often ordered, among other things, on the type of food and beverage needs in packaging such as snacks, milk, drinks in pots, the need for kitchen materials and instant cooking materials such as instantaneous bread, flour, fried oil and many more types of products sold. It is not the same with other items that have more lasting benefits, it makes the goods that will be sold only available in the store or display sales. Just having stock or display does not allow the shelf or display that will be slalu sold when making a re-order, will surely find the product quickly sold and away from the next order.

THEORETICAL RESEARCH

Rudy wahyudi (2015) with the title of the study “Analysis of Supply Control of Goods Based on the EOQ Method in the New Era Shop of Samarinda” the results of this study explained that the amount of purchase of goods against Homypad sandals is the most optimal according to the EoQ method for the number of controls against adult female and adult male homypads that should be made of 13 pcs and 13 pc. That amount was earned by making 49 purchases on adult male Homypad and 43 on adult female Homypd. Whereas the re-booking (ROP) for adult female Homypad and adult male

homypad that must be done by the New Era store for the period of March 2012-February 2013 is when the amount of stockpiled goods reaches the total of 18 pieces and 18 pieces.

Controlling

Control is the process of observation rather than the implementation of the entire activity of the organization to ensure that all work being done goes according to the established plan (Mail, Asri, Padhil, Takdir, & Chairany, 2018). Control is the activity of controlling all employees to abide by the company's rules and work according to the plan (Asdi, Rizal, & Nurhayan, 2019).

Merchandise Inventory

Merchandise inventory is a smooth asset that includes goods that are owned by the company with the intention to be sold within a period of normal business (Syafitri, Yuli, & Misgianti, 2017). Supplies are materials, parts supplied, and materials in the process that are present in the company for the production process, as well as finished goods or products supplied to meet the demand of consumers or customers at any time (Budianto, Herwin, & Ferriswara, 2017).

Economic Order Quantity (EOQ) and Reorder Point (ROP)

Economic order quantity is the quantity of materials that can be purchased with a minimum supply cost or often called the optimum amount of materials ordered. (Elisawati & Riduan, 2016) EOQ is actually the volume or amount of the most economical purchase to be carried out at each purchase. In order to meet this need, it can be calculated the fulfillment of the most economical need (purchase), which is a number of goods that can be obtained with the purchase using the least cost (Luthfi, Wachid, Santoso, & Dhiana, 2018).

Reorder point (ROP) is when the order is ordered until the acceptance of the ordered materials is accurate at the time of supply, the safety stock is equal to zer (Wahyudi 2015) The reorder point is one of the certain times the company must hold the ordering of the basic materials back, so that the order comes accurately with the expiration of the purchased basic materials, especially with the method of economic order quantity.

RESEARCH METHOD

Primary data is data collected through the first party, usually through interviews, tracks, etc. The data collected was through interviews to the financial department, Malaya Mart Bangkinang input section. An interview is a meeting conducted by two people to exchange information or an idea with a question answer, so that it can be reduced to a conclusion or meaning in a particular topic. This research conducted interviews to the financial section and the input section in particular discussed orders, supplies, sales, inputs of goods in and out of Malaya Mart Bangkinang.

The data analysis method used in this study is quantitative descriptive analysis, since the data processed is tangible numbers to analyze inventory control using EOQ and ROP methods. Following are the measures of quantitative descriptive analysis in this study; (1) Collecting data on ordering goods and sales of goods in Malaya Mart Bangkinang; (2) Recognising ordering and sales data on malaya Mart Banking; (3) Calculating ordering data and sales in malaya mart banking; (4) Grouping and calculating costs incurred at the time of ordering products in Malaya; (5) Calculate inventories for 2020 using the EOQ method; (6) After calculating the EOQ and new safety stock, then can calculate the ROP; (7) hen make a comparison of controls carried out by the company and controls performed using the EOQ and ROP methods; (8) After the company's comparison and EOQ and ROP methods are known, then the final conclusion is drawn.

RESULTS AND DISCUSSION

Analysis Of Goods Supplies Using The EOQ Method

The calculation of the control of merchandise inventory using the EOQ method aims to know the optimal ordering rate on Malaya Mart Bangkinang where within the company can minimize the costs spent on ordering merchants as inventory.

Table of 1. Data Calculation Using The EOQ Method

No	Types of Trade	The EOQ Method
1	The Light Food	4.490 Dus
2	Cake, Cake And Bread	295 Dus
3	Drinking Cups	1.898 Dus
4	Breast Milk	1.900 Dus
5	Baby Pampers	1.838 Dus
6	Instant Kitchen Equipment	2.298 Dus
7	Soap And Shampoo	3.055 Dus
8	Products Of Beauty	319 Dus
9	Cleaning Goods	1.066 Dus
10	Warehouse Goods	924 Dus

Total cost of supply

To calculate the optimal inventory can by using the total inventory cost formula.

$$TIC = \left(\frac{Q}{2}\right) C + \left(\frac{R}{Q}\right) S$$

Calculating Reorder Point

After the EOQ is known, next before calculating the ROP it is necessary to know first safety stock or security stock is the unit of inventory that must be available in the company to anticipate the surplus, deficiency and exhaustion of stock on the supply of goods, determining the amount of safety stock with the formula:

$$\mathbf{SS = MaximumUsage - Average\ Usage}\ X\ Lead\ Time$$

Comparison Result

The comparison of the number of orders, frequency of ordering of goods and the cost of booking goods applied by the company with the EOQ method in Malaya Mart Bangkinang in 2020 can be seen in the table below:

Table 2. Data Comparison of Trade Stocks Between Malaya Mart Bangkinang with EOQ and ROP Methods

Goods Type	EOQ and ROP Method				
	Order Quantity	Order Frequency	Safety Stock	Reorder Point	Inventory Cost Total
Snacks	4490 dus	12x	68 Dus	22 Dus	Rp.15.295.544
Cakes	295 Dus	12x	1 Dus	1 Dus	Rp.1.005.463
Drinks	1898 dus	12x	23 Dus	9 Dus	Rp.6.465.457
Milk	1.900 dus	12x	9 Dus	9 Dus	Rp.6.473.206
Pampers	1838 dus	12x	4 Dus	9 Dus	Rp.6.260.895
Kitchen Goods	2298 dus	12x	9 Dus	11 Dus	Rp.7.828.202
Shoap And Shampoo	3055 dus	12x	5 Dus	15 Dus	Rp.10.408.583
Beauty Product	319 Dus	12x	1 Dus	1 Dus	Rp.1.087.559

From table 2 the company's policy of the type of retail goods for the quantity of orders of 3,974 dus with the frequency of bookings as many as 24 times a year, security inventory as well as re-reservation point does not exist, and the total cost of inventory of Rp.13.648.000. According to the EOQ and ROP method, the type of retail food goods has a quantity of orders of 4,490 dus with a frequency of 12 messages in a year, with a security supply of 68 dus and a re-booking point with 22 dus, with the total cost of supply of Rp.15,295.544.

CONCLUSION AND SUGGESTION

Conclusion

Based on the above discussion, it can be concluded that the company's policy in making orders of goods, the frequency of orders and the total cost of inventory have a great value, and the company policy does not have a calculation for the security of inventories and re-order points. Compared to EOQ and ROP methods, frequency values and total cost of inventory have small values. The EOQ and ROP methods also calculate the security inventory for the stock of merchandise inventories as well as the re-order of inventories to control the inventory of goods.

Suggestion

The advice that the writer can give to the company is that it is best for the company to start studying, analyzing, and applying the EOQ and ROP methods, because the inventory control calculation presented in the EOQ method and the ROP already takes into account the expenses issued, so that such expenses do not become large expenses and other financial expenses in the operational supply of commodities. Enterprises can use the EOQ and ROP methods to control the supply of goods and the costs incurred by the company.

REFERENCES

Asdi, Rizal, S., & Nurhayan. (2019). Analisis Pengendalian Persediaan Bahan Baku Produk Mie Pada Perusahaan Mie Baji Minasa Di Kota Makassar. *Jurnal Manajemen Dan Organisasi Review (MANOR)*, 79-88.

Budi, Saksono, & Wulandari, F. C. (2021). Analisis Pengelolaan Persediaan Barang Dagang Pada Perusahaan Herbal. *Jurnal Penelitian Implementasi Akuntansi (JPIA)*, 1-11.

Budianto, Herwin, & Ferriswara, D. (2017). Penerapan Metode Pencatatan Dan Penilaian Persediaan Barang Menurut SAK ETAP Pada CV. Tjipto Putra Mandiri Indonesia. *Jurnal Aplikasi Administras*, 124-138.

Elisawati, & Riduan, M. H. (2016). Sistem Inventory Suku Cadang Sepeda Motor Untuk Menghitung Estimasi Stok Menggunakan Metode Economic Order Quantity (Studi Kasus : PT. Suzuki RJC Ombak). *Jurnal Informatika, Manajemen Dan Komputer*, 1-7.

Ginting, sari, R. P., & Sagala, L. (2019). Analisis Anggaran Biaya Produksi Sebagai Alat Perencanaan Dan Pengendalian Biaya Produksi Pada PT. Indapo Batu Rongkam. *Jurnal Ilmiah Smart*, 40-46.

Harto, Budi, & Dinda. (2018). Analisis Pengendalian Barang Dagang (Inventory) Dengan Menggunakan Metode Economic Order Quantity (EOQ) Pada Rabbani Asysa. *Jurnal Riset Akuntansi Dan Bisnis*.

Luthfi, Wachid, Santoso, E. B., & Dhiana, P. (2018). Analisis Pengendalian Persediaan Bahan Baku Dengan Menggunakan Metode Economic Order Quantity (EOQ) Untuk Mencapai Kelancaran Produksi. *Journal of Accounting*, 1-10.

Mail, A., Asri, M., Padhil, A., Takdir, & Chairany, N. (2018). Pengendalian Persediaan Bahan Baku Menggunakan Metode Min-Max Stock Di PT. Panca Usaha Palopo Plywood. *Journal of Industrial Engineering Management*, 9-14.

Syafitri, Yuli, & Misgianti, E. (2017). Membangun Sistem Informasi Persediaan Barang Dagang (Studi Kasus CV Sumber Sejahtera Bandar Lampung). *Jurnal Cendikia* , 26-32.

Tamodia, W. (2013). Evaluasi Penerapan Sistem Pengendalian Intern Untuk Persediaan Barang Dagangan Pada PT. Laris Manis Utama Cabang Manado. *Jurnal EMBA*, 20-29.

Zahirah, Hassanah, S., & Arista, A. (2016). Pengendalian Persediaan Dengan Menggunakan Metode Economy Order Quantity Pada Distributor Makanan. *Computer and Science Industrial Engineering (COMASIE)*.