Application of the Economic Order Quantity Method to Optimize Raw Material Inventory Control in Micro, Small and Medium Enterprises Cafe Kammari Gresik

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Abstract. Cafe Kammari Gresik is a business that operates in the food and beverage sector or selling food and drinks. Cafe Kammari only uses traditional methods to control raw material supplies. The Economic Order Quantity (EOQ) method can show an economical order quantity so that it can stabilize the supply of raw materials for Malaysian milo powder, lemon powder and lychee powder. This research uses descriptive qualitative research. Using the EOQ analysis method, Purchase Frequency, Safety Stock, Reorder Point, and Total Inventory Cost. The research results show that the EOQ method can minimize inventory costs. However, Cafe Kammari must pay attention to quantity demand, if it is stable then safety stock and reorder point calculations can be carried out. Apart from that, the results of calculations and implementation using the EOQ method show that it can minimize total inventory costs when compared to the Cafe Kammari Gresik policy.

Keywords: Economic Order Quantity, Safety Stock, Reorder Point, Total Inventory Cost.

1. Introduction

Efficiency in inventory activities is carried out by managing or controlling the inventory of raw materials. The control of raw material stock itself is an activity to control produced goods and raw goods that have not been processed. By controlling the inventory of raw materials, customer demands can be optimally met by the company, so that the goals of the company can be achieved. According to [3] Raw material inventory control is used to determine safety stock, and the time to reorder (reorder point).

The continuity of the production process in a company will be influenced by several factors, including: Capital, technology, raw material inventory, finished goods inventory and labor. Inventoryas an element of working capital is an asset that is always in a rotating state.

According to [5] raw materials are raw materials purchased from suppliers that need to be paid attention to because their role is very important in a production process. According to [4] the procurement of raw materials will determine the effectiveness of production levels, reduce production costs, and the selling price of the products produced can be competitive and can meet consumer demand, so that it is on time. With inventory, the company can serve customer requests on time, for which the company will carry out the purpose of establishing a company.
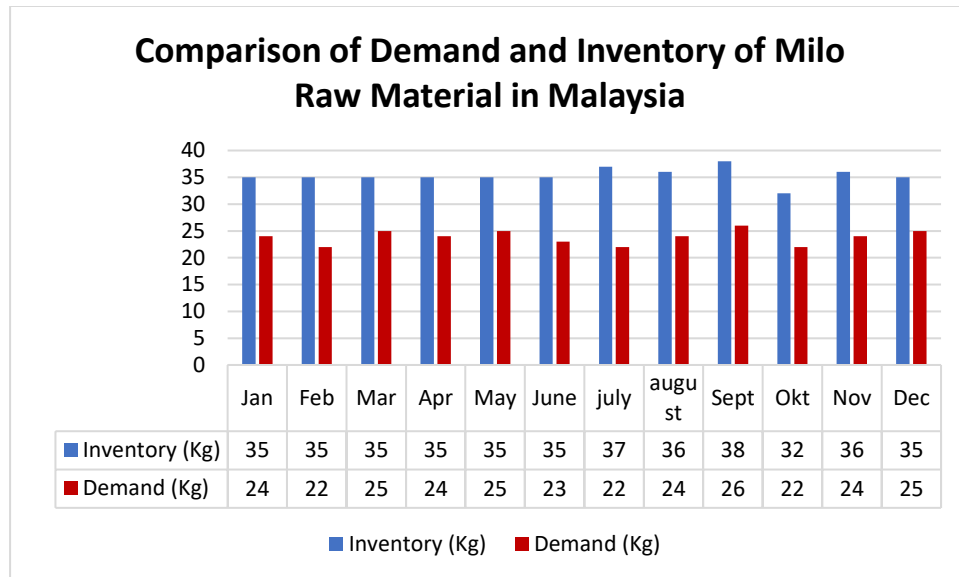
Inventory control, especially raw materials, is very important for the company to achieve the company's goals. However, not all companies implement inventory control accurately, if the inventory is not regulated accurately, it will cause a shortage or waste of raw materials. According to [13] Raw material storage capacity also needs to be considered, ordering a small amount of raw materials will result in the company not being able to meet the demand from consumers and if there are too many, there will be a large cost for the company. So it is necessary to use the right method to control the supply of raw materials.

in micro, small and macro enterprises (MSMEs), the production process is the spearhead of the business. The production process is a process, path, method, activity or technique, or a series and combination of processes, paths, methods or techniques used to produce a product (goods or services) to obtain the planned result. In the flow, if production is hampered, every process in the MSME is also hampered According to   [1] MSMEs, it is the sector that can most clearly absorb labor in Indonesia. The number of MSMEs continues to grow and is increasingly mushrooming, including in the city of Gresik.

Cafe Kammari is a micro, small and macro business (MSME) engaged in the food and beverage industry or commonly called Food and Beverage (F&B), which produces or processes food and beverages made from noodles, syrup, bread, milo, potatoes, coffee etc., which are processed into ready-to-eat food and beverage dishes. Cafe Kammari in purchasing its raw materials or in managing the level of raw material inventory still uses historical data in the past or based on experience in the field only, does not use special methods so that sometimes problems arise such as, inventory is greater than demand so that some raw materials that cannot be stored for too long will have defects or damage and the costs needed are greater due to excess stock (overstock). So that the process of controlling the supply of raw materials is not optimal.

In this study, three (3) menus were taken that were most in demand by consumers in 1 year at Cafe Kammari, namely Malaysian milo drinks, lemonade, and lychee tea where the raw materials used were Malaysian milo powder, lemon powder, and lychee powder. The taking of this product is due to the frequent overstock, the price of raw materials is more expensive, and the menu is in great demand by consumers. Therefore, inventory control should not be short or excess because if there is a shortage in the processing process it stops and vice versa if there is an excess then the costs incurred for the three raw materials are very high so that in the Kammari Cafe business in controlling the inventory is not optimal. due to the uncertainty of

different demand each month. Where the volume of raw material inventory and consumer demand in January 2023 – December 2023 varies. Therefore, in this study, the author chose the three raw materials.

Comparison of Demand and Inventory of Milo Raw Material in Malaysia

	Jan	Feb	Mar	Apr	May	June	july	august	Sept	Okt	Nov	Dec
Inventory (Kg)	35	35	35	35	35	35	37	36	38	32	36	35
Demand (Kg)	24	22	25	24	25	23	22	24	26	22	24	25

■ Inventory (Kg) ■ Demand (Kg)

Source: Milo Malaysia Cafe Kammari Raw Material Inventory Data (2023)
Figure 1 Graph of Milo Raw Material Demand and Inventory in Malaysia

The condition of the supply of raw materials for milo malaysia Cafe Kammari is dominated by overstock conditionsso that the inventory costs incurred are greater.
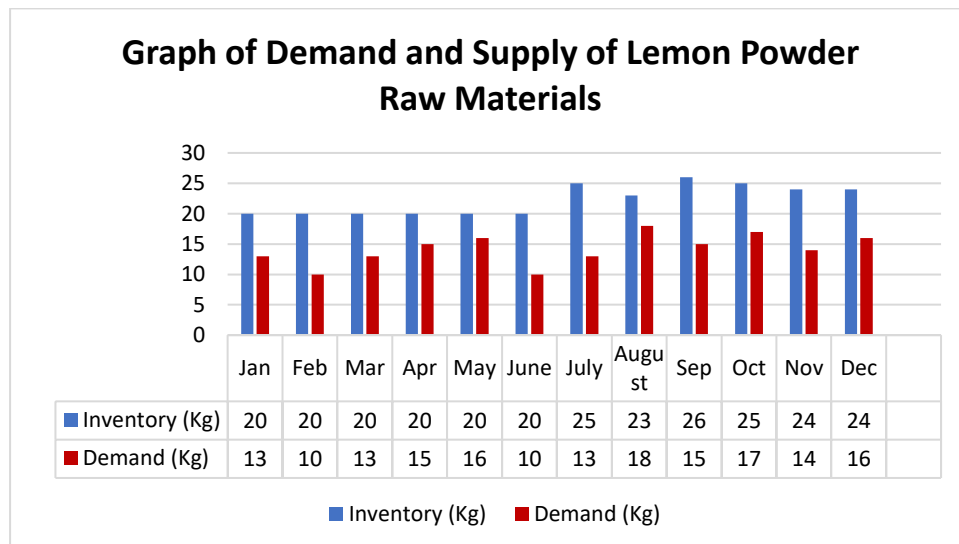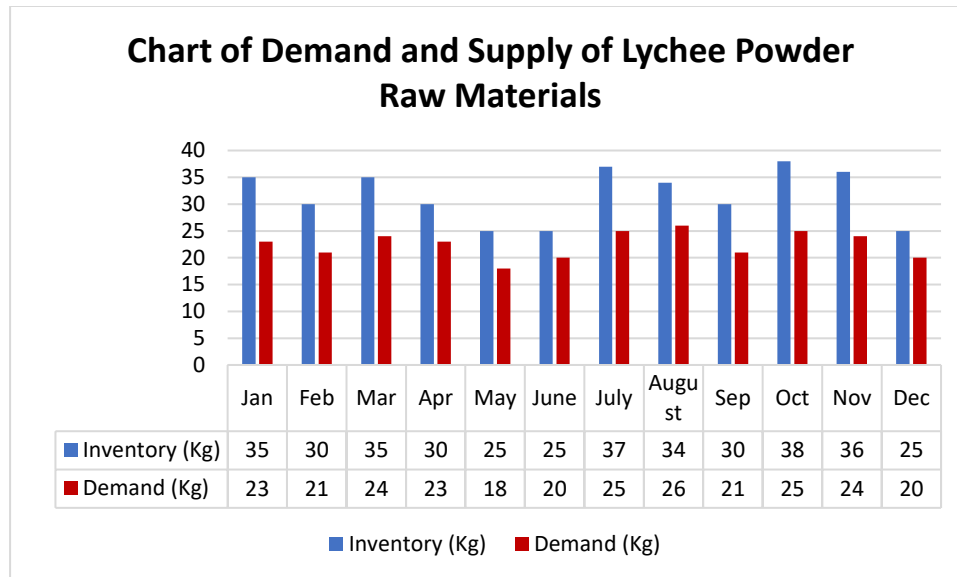
Graph of Demand and Supply of Lemon Powder Raw Materials

	Jan	Feb	Mar	Apr	May	June	July	August	Sep	Oct	Nov	Dec
Inventory (Kg)	20	20	20	20	20	20	25	23	26	25	24	24
Demand (Kg)	13	10	13	15	16	10	13	18	15	17	14	16

■ Inventory (Kg) ■ Demand (Kg)

Figure 2 Graph of Demand and Supply of Lemon Powder Raw Materials
Source: Lemon Cafe Kammari Powder Raw Material Inventory Data (2023)

The condition of the inventory of raw materials for Cafe Kammari lemon powder is dominated by overstock conditionsso that the inventory costs incurred are greater.

Chart of Demand and Supply of Lychee Powder Raw Materials

	Jan	Feb	Mar	Apr	May	June	July	August	Sep	Oct	Nov	Dec
Inventory (Kg)	35	30	35	30	25	25	37	34	30	38	36	25
Demand (Kg)	23	21	24	23	18	20	25	26	21	25	24	20

■ Inventory (Kg) ■ Demand (Kg)

Source: Lychee Powder Raw Material Inventory Data Kammari (2023)

Figure 3 Chart of Demand and Supply of Lychee Powder Raw Materials

The condition of the inventory of raw materials for Cafe Kammari lychee powder is dominated by overstock conditionsso that the inventory costs incurred are larger.

Based on Figures 1, 2, and 3, it can be concluded that Cafe Kammari is still not optimal in controlling the inventory of raw materials, so it needs to be done with a special method so that the order level is optimal by minimizing the cost of inventory or purchase costs, namely using the Economic Order Quantity method (EOQ) so that with this method, Cafe Kammari can further optimize the control of its raw material inventory. With this EOQ method, it can also be searched for reorder points and safety stock. According to [3] Economic Order Quantity (EOQ) is a decision that shows the relationship between the cost of placing an order, the cost for inventory and the number of orders in one order time. According to [7] said that the use of the EOQ method provides more economical and efficient results in controlling the cost of controlling raw material inventory.

2. Literature Review

Supplies

According to [9] an important point for management in developing inventory policy is to be able to minimize the total costs related to the production process of a company. The functions of the inventory are:

a. The Independence function is carried out so that the company can carry out the production process even though the supplier cannot undertake the number and time of ordering goods made by the company quickly

b. The Economic Function is carried out so that the company can use all the resources owned by the company in carrying out the company's operational activities

c. The Anticipation function is carried out so that companies can anticipate changes in consumer demand.

According to [10] The division of types of supplies based on their objectives consists of:

a. Safety stockis an inventory that is carried out to anticipate elements of uncertainty in demand and supply.

b. Inventory Stabilization stock is inventory that is carried out to deal with fluctuations in demand that can be predicted in advance.

c. Work in process stock is inventory in delivery which is divided into two parts, namely external transit stock and internal transit stock.

Inventory Control

According to [12] An inventory control system can be defined as a series of control policies to determine the level of inventory that must be maintained, when orders to increase inventory must be held. This system determines and guarantees the availability of the right inventory in the right quality and time.

Inventory Management

According to [10] Inventory management is an activity in determining the composition of inventory in order to be able to regulate and supervise the implementation of ordering and storing goods needed by the company based on the quantity and time needed at the lowest cost.

Raw Materials

According to [10] raw materials are a number of goods purchased from suppliers and will be used for the production process so as to produce products. Raw materials are divided into two parts, namely direct raw materials and indirect raw materials. According to [16] inventory is a

material or item that will be stored or used to meet a specific purpose. Inventory can be in the form of raw materials, auxiliary materials, goods in process, finished goods, or spare parts.

Economic Order Quantity (EOQ)

According to [2] EOQ (Economic Order Quantity) is the amount of inventory ordered at a time that minimizes the cost of annual inventory. According to [6] the EOQ calculation formula is:

$$EOQ = \sqrt{\frac{2DS}{C}}$$

Note:
D = Estimated usage or demand per time period
S = Order cost (order preparation and machine) per order
C = Storage cost per unit per year

Safety *Stock*
According to [18] Safety Stock is an extra inventory done to serve insurance against fluctuations in demand.

$$SS = (Maximum\ Usage - Average\ Usage)\ x\ Lead\ Time$$

Note :
SS	= Number of anticipated inventory (units)
Maximum Usage	= Maximum unit usage
Average Usage	= Average unit usage per month (units)
Lead Time	= Time it takes to receive an order (months)

Reorder *Points*

According to [6] Reorder Point (ROP) is a point or limit of the amount of inventory that exists at a time when an order must be reordered.

$$ROP = (LT\ x\ AU) + SS$$

Note:
ROP	= Reorder points
LT	= Grace period
AU	= Average usage in a given unit of time
SS	= Safety precautions

Total Inventory *Cost*
The calculation of total inventory cost is used to prove that with the optimal amount of raw material purchase, which is calculated using the EOQ method, the minimum total cost of raw material inventory will be achieved.

$$Total\ Inventory\ Cost\ (TIC) = \sqrt{2 \times D \times S \times H}$$

Note:

TIC   = Total Inventory Costs
S   = Booking Fee (Rp/order)
D   = Demand/demand for goods (Unit/year)
H   = Storage Fee (Rp/Unit/year)

3. Research Method

An interactive model case study approach is used in this investigation. Researchers in this case study can identify and empathize with their participants, Qualitative researchers are better able to draw meaningful conclusions about the phenomenon. The data collection method uses interviews, field observations, documentation and descriptive data in the form of written or oral words from company leaders.

The object of the research is to understand a phenomenon related to the optimization of raw material control of Cafe Kammari Gresik. The results of the research are expected to provide input to the leadership of Cafe Kammari Gresik regarding efficiency in the process of purchasing raw materials. A case study is a research in which the researcher explores a certain phenomenon (case) in a time and activity (program, event, process, institution or social group) and collects information in detail and depth using various data collection procedures over a certain period.

Type of Research

In conducting this research, the author uses a type of qualitative descriptive research. According to [11] Qualitative research methods are research methods based on the philosophy of postpositivism. According to [11] descriptive research is research conducted to find out the independent value of either one or more (Independent) without making comparisons or relationships with the researched.

This research was conducted at Cafe Kammari which is located on Jl. H. Samanhudi No. 17 – 19, Gresik. In this study, a descriptive research method was used to find out how the raw material inventory policy at Cafe Kammari and how to determine the amount of raw material inventory using the economical order quantity method or can be called Economic Order Quantity (EOQ) at Cafe Kammari, as well as how to determine safety stocks (Safety Stock), reorder points (Reorder Point) and Total Inventory Cost (TIC) is carried out by Cafe Kammari.

Unit of Analysis

The unit of analysis in research is a specific unit that is observed or researched as a research subject. The unit of analysis in this study is the supply of raw materials for Malaysian milo powder, lemon powder, lychee powder at Cafe Kammari Gresik. According to [11] an informant is a person who has relevant knowledge and information about the research topic to be able to provide answers and information needed to answer questions related to the research topic. In addition, the analysis unit of this study is 2 (two) key informants, namely the owner and purchasing manager *of* raw materials of Cafe Kammari Gresik.

Figure 4 Research Framework
Source : Prepared by the Author (2023)
Types and Data Sources

According to [11] is a data source that directly provides data to data collectors to receive information directly. Primary data is obtained from interview notes or observations conducted by researchers in the field to collect information and field observations by collecting information about situations and events in the form of notes.

Primary data was obtained through interviews with informants who are the owners and purchasing raw materials of Cafe Kammari Gresik who have knowledge of the control of raw material inventory that has been carried out in the company. The informants in this study are Mr. Rizky as the owner of Cafe Kammari and Mr. Bahar as the *purchasing manager*.

According to [11] explained that secondary data is not a source of information that provides information directly to the data collector. Secondary data in this study are data on the purchase and demand for raw materials for Malaysian powder, lemon powder and lychee powder as well as data on costs incurred to manage inventory at Cafe Kammari Gresik in the period January – December 2023.

Data Collection Techniques

The data collection method is something very important in research, because the main purpose of research is to obtain valid data. The main purpose of the research is to obtain data, data collection can be done with various sources and methods of interviews, documentation, and observation.

According to [11] when researchers have a clear idea of what information they need to gather, they can use structured interviews. Therefore, the researcher uses written questions in the form of research instruments during interviews. In addition to the devices used for interviews, data collectors also use tools such as voice recorders, photos, brochures and other items to ensure smooth conversations.
This interview will later be used to obtain data in the form of the inventory control process that has been used by Cafe Kammari, all obstacles, and various costs incurred for the process of controlling the supply of raw materials for Malaysian milo powder, lemon powder and lychee powder by interviewing the owner and purchasing manager of Cafe Kammari Gresik raw materials.

According to [11] explained that a document is a record of events that have passed, documents can be in the form of writings, drawings or monumental works of a person. The researcher collected secondary data in the form of a documentary on the purchase of raw materials for January - December 2023 by requesting it from *the purchasing* manager.

In the observation made by the researcher in this study is non-participant observation. According to [11] non-participant observations are research participants who are not directly

involved in the operation of Cafe Kammari Gresik and only as observers in these activities. The observation made by the researcher is a direct observation at Cafe Kammari Gresik to find out how to manage the supply of raw materials.

Analysis Techniques

1. Data Reduction is carried out after obtaining the next stage of data, namely analyzing the data through data reduction, data reduction, namely summarizing, selecting and sorting out the main things, focusing on the things that are important to look for in the theme and pattern.
2. Data presentation in the form of narrative / words text and easy to understand.
3. Data Verification where researchers make conclusions based on data that has been processed through data reduction and data exposure.

Economic Order Quantity (EOQ)

In this analysis, it will be compared between the calculation with the company's method with the Economic *Order Quantity method* in minimizing the cost of raw material inventory.

$$EOQ = \sqrt{\frac{2 \times D \times S}{H}} \ \text{......... (1)}$$

Note:

EOQ	= Economical Order Quantity
S	= Booking Fee Per Order (Rp/Order)
D	= Use of Goods (Unit/Year)
H	= Storage Cost Per Unit

Purcahese Frequency (F)

According to [17] the frequency of inventory orders is the number of times a company has to place an order.

$$F = \frac{D}{EOQ} \text{......... (2)}$$

Note :

F	= Order Frequency
EOQ	= *Economic Order Quantity* (order quantity)
D	= Raw Material Usage per year

Safety Stock

According to [8] safety *stock* is an additional stock that is held to protect or maintain the possibility of stock-out.

$$SS = (d\ max - d) \times l \text{......... (3)}$$

Note :

SS   = *Safety Stock* (safety provisions)
d   = average daily needs
d max   = Maximum usage per day
l   = *leadtime*

Reorder *Point*

According to [6] Reorder *Point* is the level of inventory where the inventory has reached the level of reordering. *Reorder Points* are used to determine when to place a reorder. If there is an error in ordering goods, it will result in stockpiling or running out of inventory.

$$Reorder\ Point\ (ROP)\ =\ d\ x\ l\ +\ ss \ldots\ldots\ldots (4)$$

Note :
ROP   = *Reorder Point* (reorder point)
d   = Average daily needs/requests
l   = Standby Time (days) / *leadtime*
Ss   = Safety Supplies (*Safety Stock*)

Total inventory cost

The calculation of total *inventory cost* is used to prove that with the optimal amount of raw material purchase, which is calculated using the EOQ method, the minimum total cost of raw material inventory will be achieved.

$$Total\ Inventory\ Cost = \frac{D}{EOQ}S + \frac{EOQ}{2}H \ldots\ldots\ldots (5)$$

Note :
TIC   = Total Inventory Costs (*Total Inventory Cost*)
S   = Booking Fee Per Booking
D   = Needs/demand of goods per year
H   = Storage Cost per unit
EOQ   = Purchase of economical raw materials (*Economic Order Quantity*)
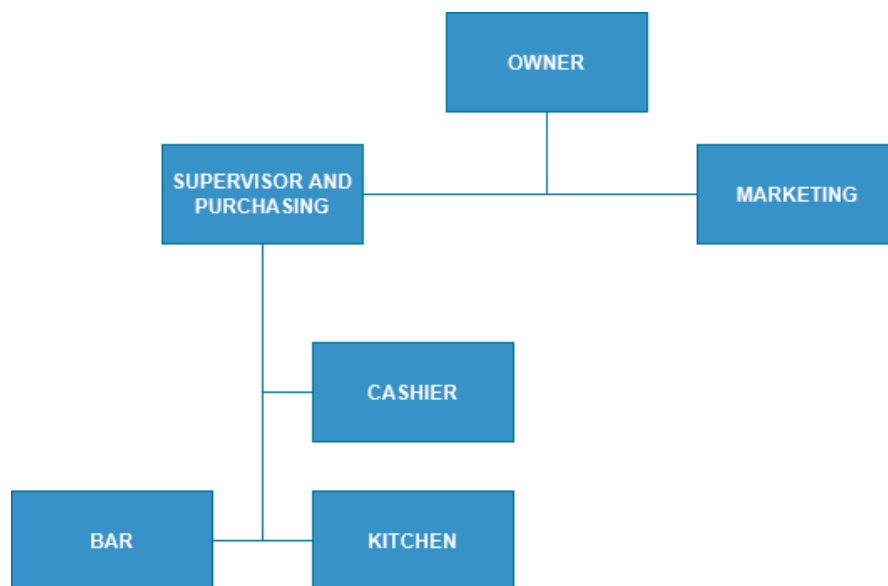
Data Validity Test

According to [11] in qualitative research, there is no difference between what the researcher reports and what actually happens to the object being studied, so the data can be said to be valid. In this study, *member checks* are used as a way to validate the data reported by the researcher. *Member check* is the process of checking data obtained by researchers to informants with the aim of finding out how far the level of data matches what is provided by the informant. The implementation can be individually or in group discussions together with the informant [11]

4. Result and Discussion

Overview of Research Subjects

Cafe Kammari is a business engaged in food and beverages that have good quality products. Cafe Kammari has many variants of raw materials needed to make food and beverages. Among them are Malaysian milo powder, lemon powder and lychee powder, then the raw materials are processed into drinks that have their own taste for connoisseurs.

Cafe Kammari was established in 2022 which is located on Jl. H. Samanhudi no. 17 – 19, Gresik Regency. Cafe Kammari has a vision to revive the golden era of Gresik old town and a mission to activate the potential of the Gresik old town area through creative methods. Cafe Kammari also has a company organizational structure so that the people involved in Cafe Kammari can carry out their duties well and pay attention to time efficiency and low costs so that they can achieve the vision and mission of Cafe Kammari. The number of employees of Cafe Kammari is 9 people, of which 2 are cashiers, 2 are bars, 2 are kitchens, 1 supervisor and raw material purchase, 1 is marketing, and 1 HRD. The following is the organizational structure of Cafe Kammari which is used as a tool to help Cafe Kammari owners and manage the activities carried out so that Cafe Kammari can do its job properly and smoothly.

Source : Cafe Kammari Gresik Document (2022)

Figure 5 Organizational Structure Chart

The following is the procurement flow of Cafe Kammari Gresik.
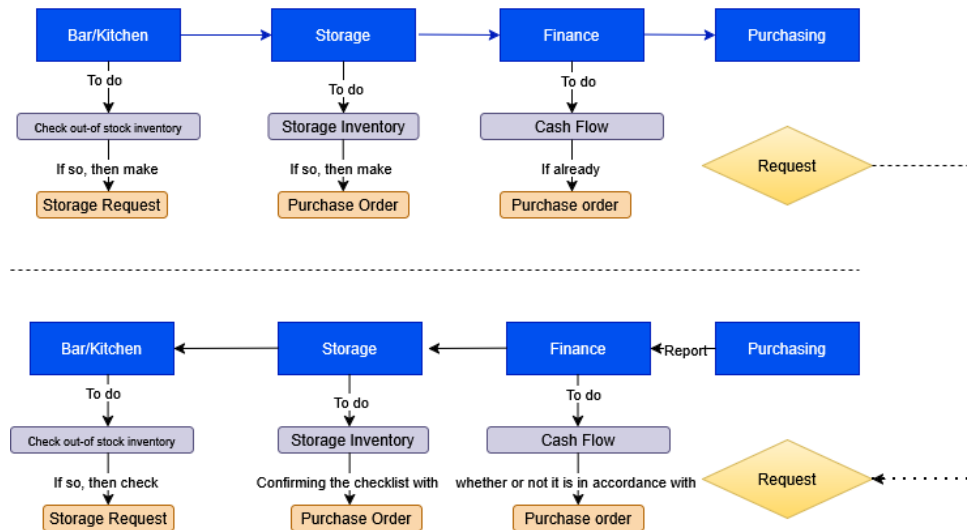
Figure 6 Procurement Flow of Cafe Kammari Gresik

Source : Kammari Gresik Cafe Document (processed 2024)

Discsussion

In the results of this study, the researcher collected primary and secondary data which will be presented by conducting observations and interviews. In this study, the respondents were the owners and purchasing managers of Cafe Kammari Gresik. Furthermore, after obtaining interview data from respondents, the researcher conducted *a member-check* which aimed to find out how far the data obtained was in accordance with what was provided by the informant.

Control of Raw Material Inventory of Cafe Kammari Gresik

In controlling the supply of raw materials Cafe Kammari Gresik will look at based on usage. Therefore, when the raw materials used are small, Cafe Kammari will purchase raw materials. Cafe Kammari Gresik in controlling the supply of raw materials does not have provisions in the supply of raw material security in its operations. This is supported by statements from informants:

"If there is a problem with the supply of raw materials, due to the uncertainty of the seller of raw materials and the price that goes up and down, so in the purchase of raw materials for Malaysian milo powder, lemon powder and lychee powder we usually buy in large quantities so that the price is not too high and we buy these raw materials every week. From there we often experience excess stock and rarely have a shortage of stock, but the cost we incur is quite

decent. For delays in the delivery of raw materials, it is rare." (Interview with Mr. Rizky as the owner of Cafe Kammari Gresik)
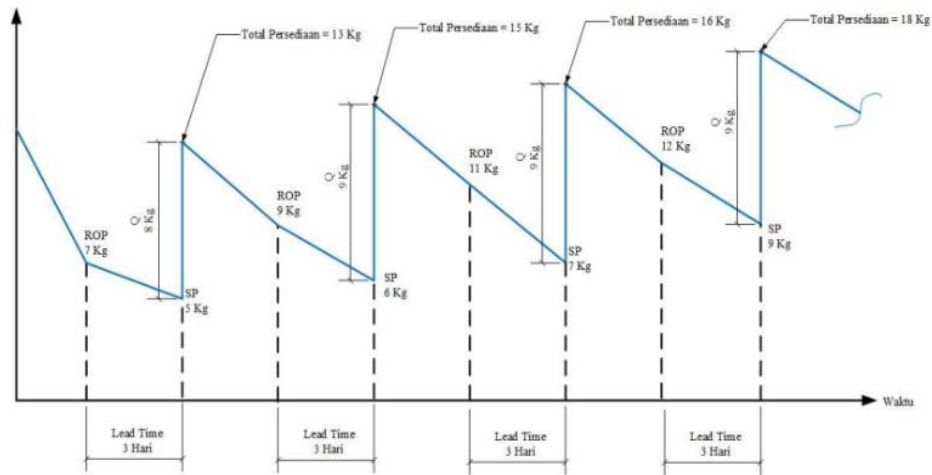
"For the problem of mas, especially in these 3 raw materials, in the previous year 2022 there was often a shortage of stock and ran out of mas, therefore we evaluate for the future we will buy the raw materials once a week." (Interview with Mr. Bahar as the manager ofpurchasing). In addition, Cafe Kammari also does not specify the point where Cafe Kammari must reorder raw materials. Cafe Kammari in controlling the supply of raw materials only uses traditional methods. This is supported by statements from informants:

"So here when managing the supply of raw materials, it only uses traditional methods. Every procurement of raw materials here always sees a small stock in the warehouse and usually a lot of product demand. When the raw materials of milo powder malaysia, lemon powder and lychee powder are seen little in the warehouse then we will make the purchase of raw materials milo powder malaysia, lemon powder, lychee powder. For now, Cafe Kammari can be said to have and do not have a mass SOP, but we have done it according to the purchasing flow only in the supply of raw materials. For the supply of raw materials, we just follow the flow." (Interview with Mr. Rizky as the owner of Cafe Kammari Gresik)

"It can be said that there is and is not yet a written procedure system / SOP, but in terms of procurement flow we have done mas, it's just that some items that we are required to buy weekly. We still use weekly repurchasing with a forecast approximately, but we have a flow of the raw material procurement process." Interview with Mr. Bahar as the purchasing manager).

The following is an illustration of the procurement of raw materials which includes Malaysian milo powder, lemon powder, and lychee powder which occurred in December 2023.
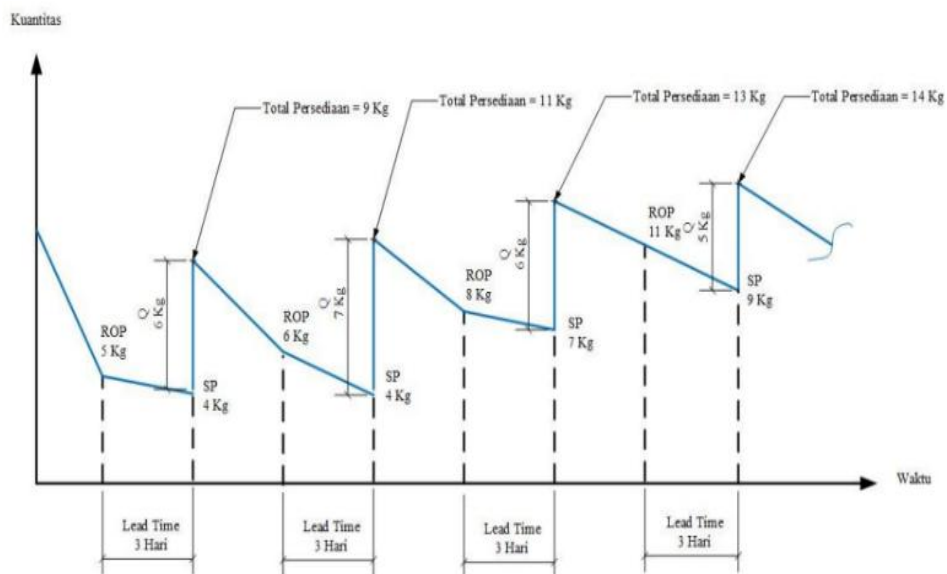
1. Inventory for Milo Powder Malaysia

Figure 7 Illustration of the procurement of raw materials for Malaysian Milo powder for the period of December 2023

2. Inventory for Lemon Powder

Figure 8 Illustration of Procurement of Lemon Powder Raw Materials for the December 2023 Period
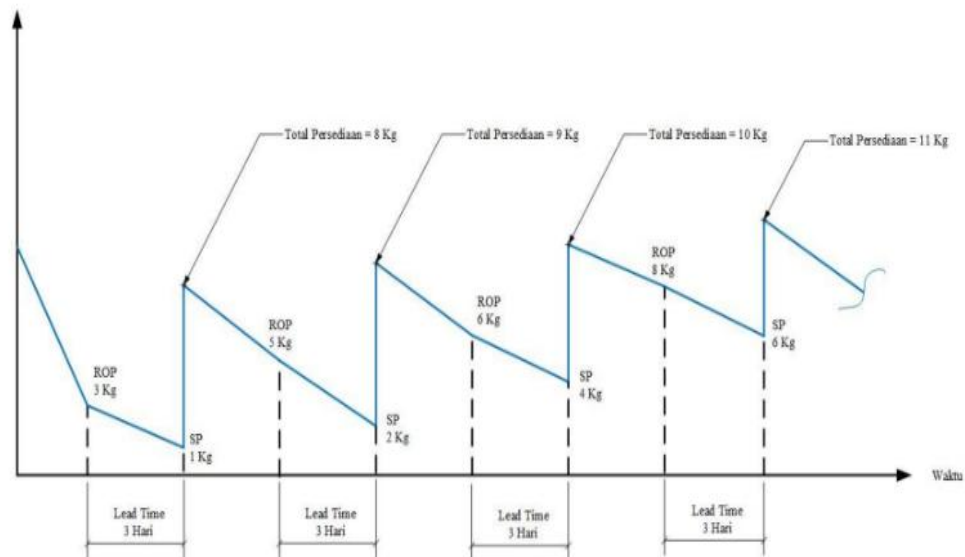
4.   Inventory for Lychee Powder

Source : Researcher (processed 2024)

Figure 9 Illustration of Procurement of Lychee Powder Raw Materials for the December 2023 Period

Based on figures 7, 8 and 9, it can be seen that the ordering of raw materials for Malaysian milo powder, lemon powder, and lychee powder by Cafe Kammari is carried out by estimating whether the remaining raw materials must be re-ordered. So that in each period the point of reordering raw materials is different. This is certainly not good because it can increase inventory costs and is feared When ordering excess raw materials with minimum demand will cause a buildup of raw materials. This can be strengthened through the results of existing interviews.

"I don't remember for sure, but what is clear is that we order raw materials for Malaysian milo powder, lemon powder and lychee powder every week, usually we buy once a week but immediately in large quantities, so if in total in 1 month we order raw materials for Malaysian milo powder, lemon powder and lychee powder 4 times in 1 month, if in 1 year then 48 times." (Interview with Mr. Rizky as the owner of Cafe Kammari)
"For the raw materials of Malaysian milo powder, lemon powder and lychee powder, we make purchases once a week, so in 1 month we can make up to 4-5 purchases." (Interview with Mr. Bahar as the manager of*purchasing*).

Control of Raw Material Inventory Using the Economic Order Quantity Policy

Table 1 Results of *Economic Order Quantity* (EOQ) Calculation

Parameters	Milo Powder Malaysia	Lemon Powder	Lychee Powder
Purchase Quantity	221 kg	106 kg	135 kg
Order Frequency	2 times	2 times	2 times
Security Supplies	9 kg	6 kg	9 kg
Reorder Points	12 kg	9 kg	12 kg
Total Inventory Costs	IDR 147,910	IDR 119,177	IDR 95,993

Source : Researcher (processed 2024)

Based on table 1, the following are the results of the *Economic Order Quantity* (EOQ) policy if applied in the field, which is illustrated as follows:
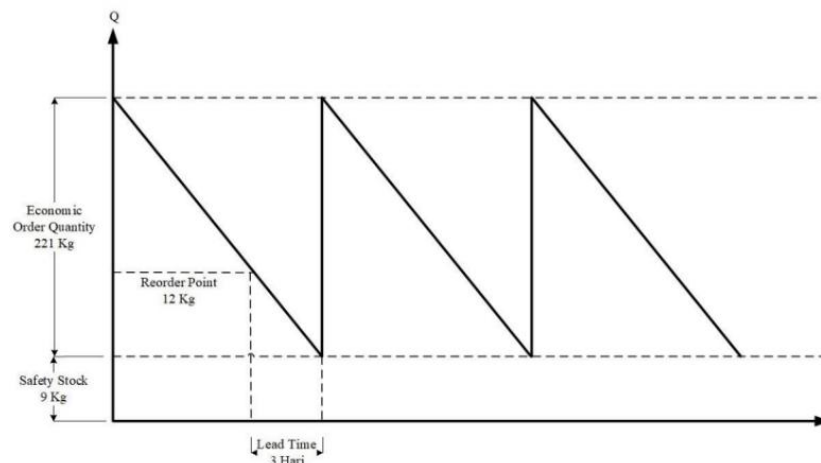
a. Milo Powder Malaysia

Figure 10 Illustration of the Implementation of *Economic Order Quantity* of Malaysian Milo Powder

Source : Researcher (processed 2024)

Figure 10 above explains the relationship between Economic Order Quantity, Reorder Point and Safety Stock of Malaysian milo powder. If the Malaysian milo powder supply reaches 12 kg, it is required to reorder the point with an economic order quantity of 221 kg. With a waiting time for the arrival of Malaysian milo powder for 3 days. For 3 days, orders will come at the point of inventory reaching 9 kg (safety stock). When the order comes, the inventory will reach the point of 230 kg.
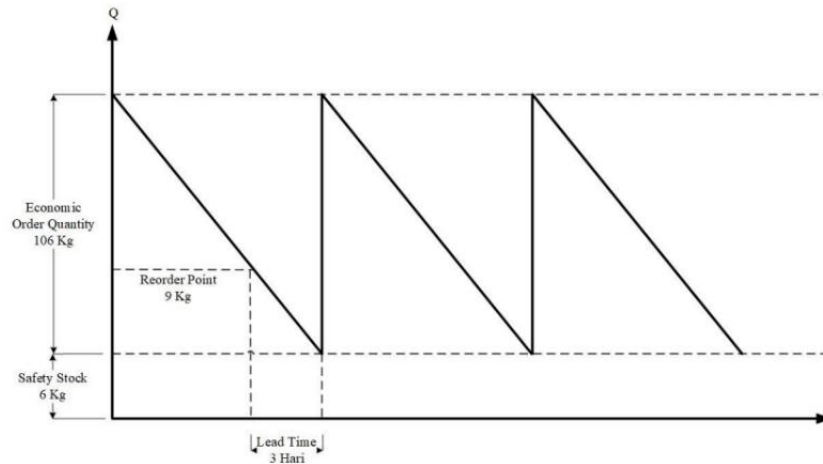
b.   Lemon Powder

Figure 11 Illustration of the Implementation of *Economic Order Quantity* of Lemon Powder

Figure 11 above explains the relationship between *Economic Order Quantity*, *Reorder Point* and *Safety Stock* of lemon powder. If the stock of lemon powder reaches the 9 kg point, it is required to reorder with a purchase quantity of 106 kg. Where is the time to wait for the arrival of lemon powder for 3 days. For 3 days, orders will come at the point of inventory reaching 6 kg (*safety stock*). When the order comes, the inventory will reach the point of 112 kg.
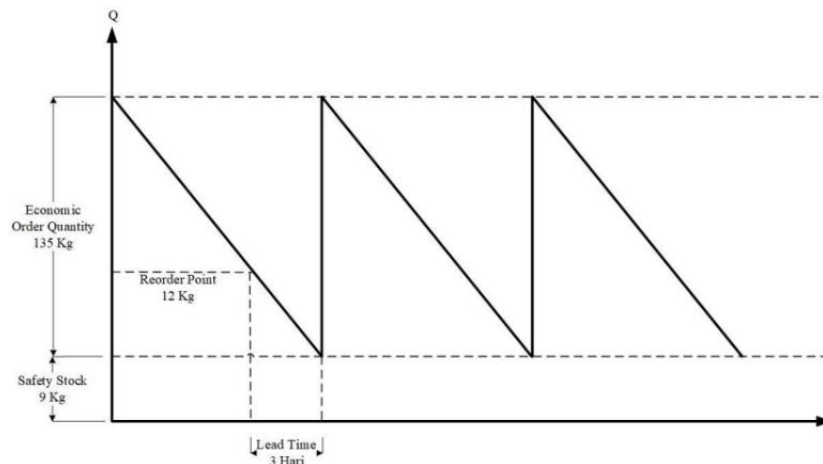
c.   Lychee Powder

Figure 12 Illustration of the Implementation of *Economic Order Quantity* of Lychee Powder

Figure 11 above explains the relationship between Economic Order Quantity, Reorder Point and Safety Stock of lemon powder. If the supply of lychee powder reaches the point of 12 kg, it is required to reorder at a reorder point with an economic order quantity of 135 kg. The time to wait (leadtime) for the arrival of lychee powder is 3 days. For 3 days, orders will come at the point of inventory reaching 9 kg (safety stock). When the order comes, the inventory will reach the point of 144 kg. So that from the illustration can avoid overstock and stockout.

Therefore, based on the illustration of the application of the Economic Order Quantity (EOQ) method of raw materials for Malaysian milo powder, lemon powder and lychee powder are able to provide input and organize the supply of raw materials at Café Kammari Gresik.

Acceptance of Economic Order Quantity
To be able to avoid which method is more effective in the provision of raw materials for Malaysian milo powder, lemon powder and lychee powder, a comparison is needed between the supply of raw materials according to Cafe Kammari Gresik and the supply according to the calculation of *the Economic Order Quantity method*. The comparison is presented in the form of the following table 2.

Table 2 Comparison of Cafe Kammari Gresik Policy and EOQ Policy

Thing	Milo Powder Malaysia		Lemon Powder		Lychee Powder	
	Company Policy	EOQ Method	Company Policy	EOQ Method	Company Policy	EOQ Method
Purchase Quantity	-	221 kg	-	106 kg	-	135 kg
Order Frequency	48 times	2 times	48 times	2 times	48 times	2 times
Security Supplies	-	9 kg	-	6 kg	-	9 kg
Reorder Points	-	12 kg	-	9 kg	-	12 kg
Total Inventory Costs	IDR 702,257	IDR 147,910	IDR 449,692	IDR 119,177	IDR 296,376	IDR 95,993

Source : Researcher (processed 2024)

After the calculation results were obtained, the researcher conducted a Focused Group Discussion to discuss the implementation of the EOQ policy in the field. Cafe Kammari Gresik can accept the EOQ method which will later be applied in several branches of Cafe Kammari that will be established. This is based on the costs incurred and the quantity produced by EOQ is indeed no problem if applied in the field.

"Wow, it turns out that so far in terms of storage costs, etc., we have spent more than the results of this EOQ Method, with this method we can save on the cost of our inventory and this method is more efficient to save our inventory costs, and actually this method can help, in the future we will realize and the results of this EOQ will be our benchmark to purchase these three raw materials." (Interview with Mr. Rizky as the owner of Cafe Kammari Gresik).

"From the point of view of numbers, it is good, in terms of the supply chain this is very efficient, but there are several obstacles, namely in the form of time and damage to raw materials due to rat bites, etc. due to the large amount of raw materials in the warehouse. And we really accept this method because numerically it can also be our benchmark and we can apply it later in several branches of Cafe Kammari that will stand up." (Interview with Mr. Bahar as the manager ofpurchasing)

5. Concluison

Conclusion

Based on the results of the research and discussion in the previous chapter, the following conclusions can be drawn:

1. Cafe Kammari in the procurement of raw materials if the raw materials of Malaysian milo powder, lemon powder and lychee powder are seen in small quantities in the warehouse or based on estimates. Cafe Kammari Gresik only relies on traditional methods in controlling the supply of raw materials. There is no procedural/SOP system owned by Cafe Kammari Gresik in controlling the supply of raw materials. In terms of procurement of raw materials, Cafe Kammari Gresik looks at the stock in the warehouse and product demand. When the raw materials look a little in the warehouse, Cafe Kammari will procure raw materials.

2. The Economic Order Quantity *method* is able to provide input in arranging the inventory of raw materials. Controlling the inventory of raw materials for Malaysian milo powder using EOQ, namely 221 kg, 106 kg for lemon powder and 135 kg for lychee powder in one order, placing orders at the point of supply of 12 kg for malaysian milo powder, 9 kg for lemon powder and 12 kg for lychee powder with a total inventory cost of Rp. 147,910 for Malaysian milo powder, Rp. 119,177 for lemon powder and Rp. 95,993 for lychee powder.

3. Cafe Kammari Gresik is able to implement the EOQ policy. In terms of costs incurred, Cafe Kammari Gresik's policy costs more than the EOQ policy. The raw material purchasing department also acknowledged that the quantity produced by EOQ is indeed not a problem if applied in the field. Later this EOQ method will be applied in several branches of Cafe Kammari that will be established

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