

Analysis Control Supply Material Raw Use Economic Order Quantity (EOQ) Methods and Periodic Order Quantity (POQ) on Resto Niswadi Sekayu

Fipiariny S¹, Rian Raga Satria², Nadilah Pratiwi³

Study Program of Accounting, Politeknik Sekayu¹²³

ABSTRACT

The purpose of this paper is to find out how to control the supply of raw materials at Resto Niswa, to find out the problems of controlling raw material supplies at Resto Niswa. The object of this research is Resto Niswa. The research method uses a Quantitative Descriptive method. From the results of the study it was concluded that raw material inventory control using the EOQ and POQ methods can minimize inventory costs and the frequency of ordering raw materials, where the EOQ method produces raw material inventories with a quantity of 12,857 Kg and a total inventory of Rp. 13,509,949 with 7 frequency orders. Meanwhile, according to the POQ method, it produces a total inventory of 3,390 kg of raw materials with an ordering frequency of 2 times and a total inventory of Rp. 3,562,027. To Simplify inventory calculations, you can use the POM – QM application for windows.

Keywords: Economic Order Quantity (EOQ), Periodic Order Quantity (POQ), Total Inventory Cost (TIC), POM-QM

Corresponding Author:

Fipiariny S
(vie.ariny@gmail.com)

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1. Business development in Indonesia develop very fast starting from business small, intermediate, nor big. Matter This naturally give rise to competition Which tight in the business world, so every business must own strategy special and increase efficiency in all field aim for maintain business continuity, to make it happen is with control supply material.

According to Handoko (2010) who quoted by Farida (2011) control supply is function managerial which is very important, because of the physical inventory Lots company involve investment largest rupiah in the current assets account, if company embed too Lots funds in inventory, causing costs excessive storage, have " *opportunity* " (fund can implanted in investment which more profitable). There by also, when company no have supply which sufficient, can result costs from there is a shortage of materials.

Material standard is goods which used in process production can easy and direct identified with goods or product So. According to Mulyadi (2010) Which in quote by Beautiful And Maulida (2012) Control supply material standard can done with calculation cost supply and frequency booking material standard Which patterned. There is two method control supply deviation this make need exists something comparison method for see comparison method which appropriate for company. Method control supply which used for achievement cost supply which optimal is Method *Economics Orders Quantity* (EOQ) for calculation with method effectiveness of the frequency of ordering materials standard The patterned one is the *Periodic Order method Quantity* (POQ).

Heizer (2014) which quoted by Repeat And Hassan (2019) explain that *Economics Orders Quantity* (EOQ) is Wrong One technique control supply Which most old And famous in a way wide, inventory control method answer 2 (two) important questions, when must order And How many Lots must order. Based on the results observation Resto Niswa still uses the autodidactic method or based on estimation in buy material standard so that result exists

running out menu when customer want to buying this thing will also make increased costs and time. In planning and control material standard The main problem that occurs is organize period supply material the most appropriate standard for the activity production is not interrupted, funds are planted in not excessive supplies. Based on the results of the author's interview find that need supply chicken actual Resto as much 6,708.33 Kg with amount customer range 5 until 10 customer Which buy chicken burn.

2. METHODS

In this research, the collection method data Which used by writer is interview and observation methods. As for source data Which used in this research is in the form of data and notebooks information on company. Type data which use in writing this research is data primary And datasecondary.

Data primary is source data which obtained in a way direct from source original. Data primary which used in the form of interview data. Secondary data used in this research is data that obtained through studies references like.

3. RESULTS AND DISCUSSION

According to data which obtained need material standard Resto Niswa each the month different in accordance with request raw material. Material inventory control standard on Resto Niswa not yet efficient where Resto Niswa is still a hit cost Which Enough Lots in obtain these raw materials, needs the most common raw material month April amount quantity 12,300 Kg with cost Rp. 336,000 And need The lowest raw materials occur in June with quantity 5,550 Kg with cost IDR 155,400 per year. Resto Niswa can do control supply material standard using the EOQ method (*Economic Order Quantity*) or POQ (*Periodic Order Quantity*) one method This can save costs for the restaurant Niswa Where Resto Niswa do booking Chicken 12 time in a year with cost Which minimal so Resto Niswa can apply method EOQ (*Economics Orders quantity*) or method P.O.Q (*Periodic Orders quantity*) can save cost.

Resto Niswa do booking material standard as much 12 time with the quantity of chicken raw materials is 69,500Kg. according to method EOQ Resto Niswa You can order up to 7 times in a year with a quantity of 12,857 Kg, according to POQ Resto Niswa can do it booking 2 time with Quantity 3,309Kg from calculation comparison table above it can be seen that the POQ method can used For save cost when compared with the restaurant's actual data And method EOQ.

If Resto Niswa apply the EOQ method then the Resto will save on ordering costs or costs storage. If Resto Niswa apply method P.O.Q with amount booking as much 2 time It means company will buy material standard every 6 month very in One year so in worry that the raw materials will become damaged its quality when stored for time which is quite long because as a company those who work in the culinary sector must provide food Which quality. Based on Figure 1 below, it is known calculation supply material standard chicken method EOQ use application POM-QM's obtained is :

Optimal Order Quantity (Inventory Optimum): 12.861 / 12.8

Average Inventory (Supply Average) :6,430

Orders Per Period (Frequency Booking) : 7time

Total Inventory Cost (Cost Variable Supply) : 13,505

INSTRUCTION: There are more results available in additional windows. These may be opened by using the SOLUTIONS menu in the Main Menu.

Module tree: Hide Panel

Decision point: Order Quantity (Q=EOQ)

No reorder point
 Compute reorder point

1000 Solution

Parameter	Value	Parameter	Value
Demand rate(D)	96 500	Optimal order quantity (Q*)	12 861.9
Setup/ordering cost(S)	900	Maximum Inventory Level (Imax)	12 861.9
Holding/carrying cost(H)	1,05	Average inventory	6.430.95
Unit cost	28	Orders per period/year	7.5
		Annual Setup cost	6.752.5
		Annual Holding cost	6.752.5
		Total Inventory (Holding + Setup) Cost	13.505
		Unit costs (PD)	2.702.000
		Total Cost (including units)	2.715.505

Figure 1. Results Calculation Method EOQ And P.O.Q Use Application POM-QM

INSTRUCTION: There are more results available in additional windows. These may be opened by using the SOLUTIONS menu in the Main Menu.

Module tree: Hide Panel

Decision point: Order Quantity (Q=EOQ)

No reorder point
 Compute reorder point

1000 Solution

Parameter	Value	Parameter	Value
Demand rate(D)	96 500	Optimal order quantity (Q*)	43 408.29
Setup/ordering cost(S)	900 000	Maximum Inventory Level (Imax)	43 408.29
Holding/carrying cost(H)	836.037	Average inventory	20 329.5
Unit cost	8.71	Orders per period/year	2.27
		Annual Setup cost	8 130 111.0
		Annual Holding cost	2 130 111.0
		Total Inventory (Holding + Setup) Cost	4 272 222.0
		Unit costs (PD)	517.332
		Total Cost (including units)	4 810 944.0

Figure 2. Result Calculation Supply Method P.O.Q Use Application POM-QM

Based on figure 2. calculation supply method P.O.Q use application POM QM that is :

Optimal Ordering Quantity (Supply Optimum): 406.6

Maximum Inventory Levels (Supply Maximum) : 406.6

Average Inventory (Supply Average) :203.3

Orders Per Period (Frequency Booking) : 2time

TIC (Variable Costs Supply) : 4,272

4. CONCLUSION

Based on the results of analysis and discussion Which has done on chapter previously, so on chapter This writer will give a number of conclusion And suggestion Which can useful For progress Resto Niswa, that is as follows: Based on the calculation results EOQ and POQ methods using the POM QM application or manually, the results are the same. Inventory control with EOQ and POQ methods generate amount booking Which more small in inventory control.

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