UNIVERSITAS BHAYANGKARA JAKARTA RAYA
FAKULTAS TEKNIK
Kampus I: Jl. Harsono RM No.67, Ragunan, Pasar Minggu, Jakarta Selatan 12550
Telepon: (021) 27808121 - 27808882
Kampus II: Jl. Raya Perjuangan, Marga Mulya, Bekasi Utara, Jawa Barat
Telepon: (021) 88955882 Fax.: (021) 88955871
Web: *www.ubharajaya.ac.id/ft/*. Email: *ft@ubharajaya.ac.id*

SURAT TUGAS
Nomor: ST/618/I/2021/FT-UBJ

Pertimbangan : Bahwa dalam rangka Penelitian Universitas Bhayangkara Jakarta Raya sebagai penunjang Tri Dharma Perguruan Tinggi di Universitas Bhayangkara Jakarta, maka untuk itu perlu dikeluarkan Surat Tugas.

Dasar :
1. Keputusan Mendiknas RI Nomor : 184/V/2001, tanggal 23 Nopember 2001, tentang Pedoman, Pengendalian dan Pembinaan Program Diploma, Sarjana dan Pascasarjana di Perguruan Tinggi.
2. Keputusan Dirjen Dikti Nomor : 034/Dikti/Kep/2002, tanggal 3 Juli 2002, tentang Perubahan dan Peraturan Tambahan Pedoman Pengawasan Pengendalian dan Pembinaan Program Diploma, Sarjana dan Pascasarjana di Perguruan Tinggi.
3. Rencana Kerja dan Anggaran Pembelanjaan Universitas Bhayangkara Jakarta Raya Tahun 2020/2021.

DITUGASKAN

No.	NAMA	NIDN
1.	Dr. Rorim Panday, M.M., M.T.	0425025801
2.	Dovina Navanti, S.T., M.M.	0327037601

Untuk :
1. Bertugas untuk menulis artikel publikasi ilmiah dengan judul "INVENTORY MANAGEMENT EVALUATION AND INVENTORY FORECAST USING EOQ" pada : Jurnal Ilmiah Indonesia Vol. 6, No. 1, Januari 2021.
2. Melaporkan hasil pelaksanaan kegiatan tersebut secara tertulis kepada Dekan Fakultas Teknik Universitas Bhayangkara Jakarta Raya.
3. Melaksanakan perintah ini dengan penuh rasa tanggung jawab.

Dikeluarkan di : Jakarta
Pada Tanggal : 4 Januari 2021

Pjs. DEKAN FAKULTAS TEKNIK

Dr. ISMANIAH, S.Si., M.M.
NIP: 9604028

Paraf:
1. Ka. Prodi TLI.....

Syntax Literate : Jurnal Ilmiah Indonesia p–ISSN: 2541-0849
e-ISSN : 2548-1398
Vol. 6, No. 1, Januari 2021

INVENTORY MANAGEMENT EVALUATION AND INVENTORY FORECAST USING EOQ

Rorim Panday dan Dovina Navanti
Universitas Bhayangkara Jakarta Raya, Indonesia
Email: indripan@gmail.com dan dovina_navanti@yahoo.com

Abstract

The fashion industry that is gamis in Indonesia is growing rapidly because the majority of the population is Moslem. Elzatta is a company that does business on Moslem clothing, one of its products is the gamis. The company is experiencing problems with stockpiling in warehouses, because of models that were not sold, as well as outdated models. With the accumulation of products in warehouses in 2017 and 2018, many products will be damaged. For this reason, the company runs a buy one get one business strategy and sells products at low prices. As a result, the company suffered a substantial loss. For this reason, it is necessary to evaluate the inventory management that has been carried out using the EOQ model. For 2019, it is necessary to plan the number of products to be sold and apply the EOQ model. The results of evaluations in 2017 and 2018, by using EOQ the company could save 64.78% for 2017 and 63.40% for 2018. Whereas for 2019, after forecasting the number of sales using the seasonal model, sales projections are similar to the number of sales in the previous years, so that the number of products needed for a single order is 1364 pcs.

Keywords: *economic order quantity; forecasting; seasonal model*

Coresponden Author
Email: indripan@gmail.com

Introduction

The development of the moslem fashion industry that is gamis in Indonesia is growing rapidly because the majority of the population is Moslem. This dress is used to cover genitalia, especially Moslem women, has the potential to continue to grow. Moslem fashion companies in Indonesia are diverse and many, one of which is Elzatta, a subsidiary of Elcorps, which produces hijab, gamis, tunic, socks, cuffs, ciput, skirt, pants, mukena, and koko clothes. One of the targets of this company is how consumers can easily get the clothes they need. For that the company must be supported by a good distribution and marketing system, so the company can compete with other companies in capturing new customers. Elzatta is a brand that has been developing for more than 20 years in Moslem fashion retail, built-in 2012. In 2015 Elzatta has established one hundred

and five stores throughout Indonesia building togetherness with partners for mutual benefit.

One of Elzatta Gallery is located in Pondok Ungu Permai, Bekasi City, using an online system through Instagram and Facebook and a conventional distribution system, as well as providing opportunities for customers who want to become agents. Elzatta Gallery changes catalog every four months or always releases the latest models of Moslem clothing such as gamis, hijab, tunic, and sturdy clothes. For ordering products done once a year with the delivery of goods more than 1 time, submitted to the head office in Bandung.

Each product is required to order for each model at least 6 pcs for the gamis, tunic, koko, and hijab products. From these orders, every year there is excess product stock, resulting in a buildup of products in the warehouse. This has an impact on finding the products needed to be difficult and requires a relatively long time. Another impact can damage the product because it is too dense in the existing product warehouse. Due to the buildup, Elzatta Gallery had to sell products at low prices, even sold by way of Buy One Get One Free or by holding promos to give customers gifts. The following is the actual excess stock data from the Elzatta Pondok Ungu Permai Gallery.

Table 1
Elzatta Gallery Over-Stock Products in 2017 and 2018

Product	Stock (pcs)	
	2017	2018
Gamis	162	185

Resource : Galeri Elzatta Pondok Ungu Permai

Gamis products have excess stock in 2017 amounted to 162 pcs and in 2018 amounted to 185 pcs, this resulted in the product having to be sold as a promo at a discount of 30% - 40%. From the above background, it can be proposed the formulation of the problem that how to prevent the inventory of Moslem fashion products at the Elzatta Pondok Ungu Permai Gallery not to pile up? The purpose of this study was to find out how to optimize the inventory of Moslem fashion products at Elzatta Pondok Ungu Permai Gallery. In this study focused on the inventory of Gamis Moslem fashion.

Literature Review

Inventory management is part of production and operations management, therefore managing inventory is closely related to production costs (Panday, Rachmat, & Navanti, 2020).

Inventory management is a management system related to order, reorder time, number of items to be ordered, average inventory level. The purpose of inventory management is to maximize service to customers in anticipation of meeting demand, maximizing the efficiency of purchases in production, minimizing stock investment, maximizing profits in activities that produce goods or services. Too much inventory will

cause increased inventory costs, while too little inventory will result in increased ordering costs and excessive ordering frequency. (Panday et al., 2020) Type of inventory according to (Heizer, J., & Render, 2014) (Hillier & Lieberman, 2010) (Blumenfeld, 2009)) as raw material inventory, work-in-process inventory, maintenance repair operating, finish-good inventory.

Some of the benefits of inventory in meeting company need, namely: 1. Minimizing the risk of late delivery of raw materials or goods. 2. Reducing the risk if the raw materials or goods ordered are not good, 3. Reducing the risk of rising goods prices or inflation, 4. To save raw materials produced seasonally, 5. Get profit from purchases based on quantity discounts and 6. Provide services to customers with the availability of goods needed. According to (Heizer, J., & Render, 2014) (Hillier & Lieberman, 2010) (Blumenfeld, 2009), There are three types of costs in inventory, among others:

1. Holding cost.
2. Ordering cost
3. Setup cost

EOQ (Economic Order Quantity)

EOQ is one of the inventory management models, to determine the number of goods / raw materials with minimal costs (Heizer, J., & Render, 2014) (Hillier & Lieberman, 2010) (Blumenfeld, 2009) (Kalaiarasi, 2011). The aim of the EOQ method is to achieve the efficiency of inventory levels by low cost and easily adjusted according to company needs. (Yuliana, Topowijono, & Sudjana, 2016) (Yopan Maulana, 2018) (Saragi & Setyorini, 2014) (Fahmi Sulaiman, 2015).

According to (Heizer, J., & Render, 2014) Economic Order Quantity (EOQ) is one of the oldest and most widely known inventory control techniques, this inventory control method answers 2 (two) important questions, when to order and how much to order. The EOQ must meet the following assumptions (Maisuriya & Bhathawala, 2013) (Heizer, J., & Render, 2014) (Hillier & Lieberman, 2010):

1. The number of requests known to be relatively constant and independent.
2. The waiting time between order and receipt of an order is known and is constant.
3. Supplies are immediately received and complete in full. In other words, ordered supplies arrive in one group at a time.
4. Quantity discounts are not available.
5. Variable costs are just the cost of ordering and the cost of storing inventory for a certain time.
6. Out of stock can be completely avoided if the order is made promptly.

According to (Heizer, J., & Render, 2014) (Hillier & Lieberman, 2010) (Blumenfeld, 2009) (Onawumi, Oluleye, 2011) (Birbil, Bulbnul, J.B.G.Frenk, n.d.) (Tibrewala & Kleinstein, 2000) to determine the amount of economic order, use the following formulas:

Table 2

The formula of Economic Order Quantity

$\mathbf{EOQ\ atau\ Q^* = \sqrt{\frac{2DS}{H}}}$	EOQ or Q^*: Optimal order amount (in units) D: Number of demand per year (in units). S: Ordering cost. H: Holding cost per unit. N: Frequency of orders for one year
$\mathbf{N = \frac{D}{Q^*}}$	
$\mathbf{TCC = \frac{Q}{2}H}$	TCC: total holding cost TOC: total ordering cost Q: EOQ H: ordering cost D: demand S: holding cost
$\mathbf{TOC = \frac{D}{Q}S}$	
$\mathbf{TC = TOC + TCC}$	TC: Total cost
$\mathbf{ROP = (Lxd) + SS}$	ROP: Reorder point L: Lead time d: rate of need per day SS: safety stock
$\mathbf{Standart\ Deviasi = \sqrt{\frac{\sum(x - \bar{x})^2}{n}}}$	X: The number of goods needed $\bar{x}$: Average amount of goods needed n: Amount of data SD: Standard deviation Z: Safety factor
$\mathbf{SS = Sd\ x\ Z}$ or $\mathbf{SS = Sd\ x\ 1,65}$	

Forecasting *Seasonal Model*

Seasonal models are used for time-series data that have seasonal properties. Seasonal data is data that has the value of changing data at certain times / certain months so that seasonal data has an index called the seasonal index. Seasonal data can be said to be abnormal data in certain months, therefore the data must be removed from the seasonality, which is called deseasonalization. To become a data of normalization using the formula:

$S_t = \alpha (D_t/I_{t-L}) + (1-\alpha) S_{t-1}$

Then the seasonal index is calculated using the formula:

$I_t = \gamma (D_t/S_t) + (1 - \gamma) I_{t-L}$

Then the forecasting is done using the following formula:

$F_{t+1} = S_t I_{t-L}$

Where:

L = Length of season

I = Seasonal Index

α = deseasonalization Constanta

γ = Reducer constants for seasonal indexes

Prior research

Research using EOQ to optimize inventory and costs has been used in research (Wahyudi, 2015) to sandals inventory at Samarinda's New Era store, (Nurhasanah, 2012) conducting Solar Inventory Analysis Using the Economic Order Quantity Method (EOQ) at PT. Anugrah Bara Kaltim, (Fahmi Sulaiman, 2015) researching Raw Material Inventory Control Using the EOQ Method in a furniture company, (Gede Agus Darmawan, Wayan Cipta, 2015) the application of Economic Order Quantity (EOQ) in the management of flour raw material inventories at the Pia Ariawan business in Banyuning Village, (Asrori, 2013) on Sengon wood raw material inventory PT. Abhirama Kresna with the EOQ method, and (Indrayati, 2007) in the analysis of raw material inventory control by the EOQ method at PT. Tipota Furnishings Jepara. (Rorim Panday; Hernawati, 2015) use EOQ in the inventory of raw materials for Akadril cough syrup. From the previous research above it can be concluded that the studies are still in line with the research conducted by the author.

Methodology

This research is a quantitative study, conducted at the Elzatta Pondok Ungu Permai Gallery, Bekasi, from March 2019 to May. The calculation method uses Economic Order Quantity, and forecasting. The data needed is inventory data which includes sales data, ordering costs, storage costs, and product ordering data. After collecting all data, a calculation is made using the Economic Order Quantity formula. Then a comparative analysis is carried out on the implementation of inventory management and inventory forecasting for the next year using a seasonal model.

Result and Discussion

Actual sales of gamis products in 2017 and 2018.

Table 3
Data Sales Gamis Products 2017 and 2018

Month	Gamis Sales 2017	Gamis Sales 2018
January	146	106
February	128	98
March	231	128
April	254	179
May	342	382
June	495	486
July	260	427
August	123	146
September	203	216
October	197	203
November	186	163

December	218	172
Jumlah	2.783	2.706

Sources : Galeri Elzatta Pondok Ungu Permai

At table 3, the sale of gamis products in 2017 amounted to 2,783 and in 2018 amounted to 2,706. Holding costs are costs incurred concerning holding an inventory of goods, by formula according to (Heizer, J., & Render, 2014) is:

H = (Total holding cost/Total Sales of product)

Ordering costs are costs incurred for the activities of ordering goods, since ordering until the availability of goods in the warehouse. For ordering products, the company makes an order to Bandung using a private car. The formula of the booking fee according to (Heizer, J., & Render, 2014) is:

S= (Total ordering cost/Frequency of ordering)

Order frequency = 1 time in one year. The following are the 2017 ordering and holding costs for 2018.

Table 4
Data holding and ordering costs

Types of holding costs	The year 2017	The year 2018
Electricity cost	9.600.000 IDR	9.865.000 IDR
Number of Gamis	3.015 pcs	2.950 pcs
Holding cost	3.184 IDR/pcs	3.344 IDR/pcs
Type of ordering cost		
Transportation cost	750.000 IDR	850.000 IDR
Sum	10.350.000 IDR	10.715.000 IDR

Source: Data processed, 2019

The computation EOQ, dan ROP

The computation of EOQ gamis product in the year 2017 and year 2018

Table 5
EOQ calculation results

	EOQ 2017	EOQ 2018
EOQ	1.145 pcs	1.173 pcs
Frequency	2,4 ≈ 3 kali	2,3 ≈ 3 kali
Interval ordering time (T)	104 days	104 days
Ordering cost/ year	Rp 1.822.883	Rp 1.961.063
Holding cost /year	Rp 1.822.883	Rp 1.961.063
Total cost/year	Rp 3.645.766	Rp 3.922.126
$\overline{\text{Average sales/ month}} = \overline{X}$	231,92 ≈ 232	225,5≈225
Standard deviation	98,75	125,45
Safety stock	162,94≈ 163 pcs	206,99 ≈ 207 pcs
L= Lead time	30 days	30 days
d =Average sale per day	7,73 ≈ 8 pcs per-day	7,51 ≈ 8 pcs per-day
ROP= Reorder Point	403 pcs	447 pcs

Source: Data processed, 2019

Comparison of actual inventory with 2017 EOQ inventory and 2018 EOQ inventory

Table 6
Comparison of Actual Inventories and EOQ Inventories

	EOQ Inventory 2017		EOQ Inventory 2018	
	Actual	EOQ	Actual	EOQ
Sales	3.015 pcs	1.145 pcs	2.950 pcs	1.173 pcs
Frequency order	1 time	3 time	1 time	3 time
Time inteval	-	104 days	-	104 days
Total Cost	10.350.000IDR	3.645.766IDR	10.715.000IDR	3.922.126IDR
Lead Time	30 days	30 days	30 days	30 days
Safety Stock	-	163 pcs	-	207 pcs
ROP	-	403Pcs	-	447 pcs

Source: Data processed, 2019

For year 2017 EOQ total cost become more efficient at 6,704,234 IDR or 64.78%, for the order frequency of 3 times, where each order is 1145 pcs. For year 2018 EOQ total cost becomes more efficient at 6,792,874 IDR or 63.40%, for the frequency of ordering 3 times, where each order is 1173 pcs.

Ordering cost and holding cost of the year 2019

Table 7
Costs of 2019

Ordering cost of the product	
Transportation cost	950.000 IDR
Holding cost	
Electricity cost	9.875.000 IDR
Purchasing of Gamis	3.165 pcs
Holding cost (H) Per pcs Gamis	3.120 IDR/pcs

Source*: Data processed, 2019*

Sales Forecasting, EOQ and ROP, and Analyses of Gamis in 2019

Sales forecasting for 2019 uses the Seasonal model, because the data for 2017 and 2018 show a similar graph (see Figure 1 and Figure 2), therefore the data is seasonal. Based on these reasons, for 2019, the data is forecast using the seasonal model (see Figure 3 and Table 8).

Table 8
result of the seasonal model computation

Gamis sales	Month	Data	St	It	Ft
2017	January	146		0.629527	
	February	128		0.551914	
	March	231		0.996033	
	April	254		1.095205	
	May	342		1.474646	
	June	495		2.134357	
	July	260		1.121076	
	August	123		0.530355	
	September	203		0.875302	
	October	197		0.849431	
	November	186		0.802001	
	December	218	218	0.939979	
2018	January	106	213.038	0.589938	137.237
	February	98	209.4906	0.526681	117.5788
	March	128	201.3925	0.887896	208.6596
	April	179	197.5972	1.038409	220.5661
	May	382	203.742	1.594729	291.3861
	June	486	206.1382	2.201342	434.8582
	July	427	223.6127	1.357619	231.0966
	August	146	228.7802	0.562699	118.5942
	September	216	230.5794	0.893743	200.2517
	October	203	231.4198	0.85776	195.8612
	November	163	228.602	0.775309	185.5988
	December	172	224.0401	0.888301	214.8811
2019	January	330	257.5741	0.797312	132.1698
	February	207	271.1195	0.597727	135.6593
	March	132	258.8741	0.774497	240.7258
	April	146	247.0467	0.90418	268.8171
	May	531	255.6392	1.739454	393.9724
	June	396	248.0643	2.019848	562.7494
	July	343.5	248.5595	1.364922	336.7768
	August	134.5	247.6062	0.55685	139.8642
	September	209.5	246.2864	0.88081	221.2962
	October	200	244.9743	0.845355	211.2545
	November	174.5	242.984	0.758163	189.9309
	December	195	240.6376	0.864915	215.8431
					191.8633

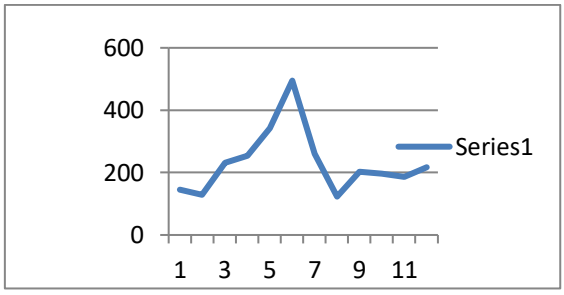

Figure 1
Sales data

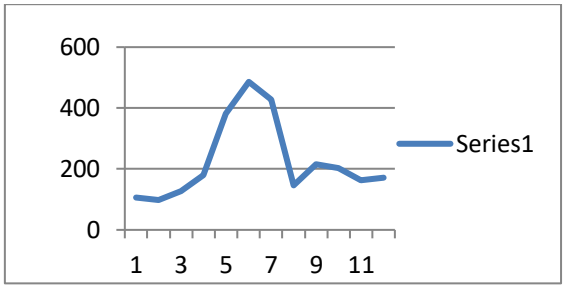

Figure 2
Sales data in 2018

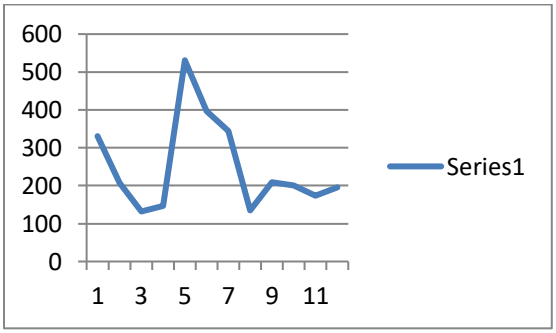

Figure 3
Sales data forescasting in 2019

Table 9
Data Forecasting of Gamis Product at 2019 From July to December

Month	Forecast	
January	330	Data
February	207	Data
March	132	Data
April	146	Data
May	531	Data
June	396	Data
July	337	Forecast
August	140	Forecast
September	221	Forecast
October	211	Forecast
November	190	Forecast
December	216	Forecast
Sum (D)	3056.9656	

Source: Data processed, 2019

EOQ computation of gamis at 2019

Using forecast data for 2019, the computation of EOQ gamis product as follows:

Table 10
The result of EOQ at 2019

EOQ	1364
Frequency	2.24~ 3 times
Interval ordering time (T)	104.00 days
Ordering cost/ year	2,128,500.61 IDR
Holding cost /year	2,128,500.61 IDR
Total cost/year	4,257,001.21 IDR
$\text{Average sales/ month} = \bar{X}$	255 pcs
Standard deviation	115.3821794 pcs
Safety stock	190.380596 ≈ 190
L= Lead time	30 days
d =Average sale per day	8.49 ≈ 9 pcs per day
ROP= Reorder Point	460 pcs

From the calculation of 2019 product inventory using EOQ, it can be concluded as follows:

a. The amount of demand for 1 year for gamis products is 3057 pcs.
b. The optimal number of orders is 1364 pcs.
c. The frequency of ordering for 1 year is 3 times
d. The total cost for one year is 4,257,001.21 IDR
e. Safety Stock of gamis products as much as 190 pcs.
f. The company will place an order again if there are only 460 pcs left of the gamis.

Conclusions

From the results of previous inventory calculations, the following conclusions can be made: 1) By using EOQ, the results of evaluations in 2017 and 2018, the number of purchases of goods becomes less, with more frequency, but provides efficiency in significant financing. 2) By implementing EOQ, a very safe Safety Stock is obtained for Inventory in 2017 and 2018. 3) Elzatta Gallery Management can reorder when the 2017 gamis stock is 403 pcs, and to know 2018 at 447 pcs. 4) The optimal number of orders in 12019 is 1364 pcs, with Safety Stock of gamis products as much as 190 pcs, and reorder point on 460 pcs left.

REFERENCES

Asrori, H. (2013). *Analisis Pengendalian Persediaan Bahan Baku Kayu Sengon Pt Abhirama Kresna Dengan Metode Eoq*. *Journal Of Chemical Information And Modeling*. Https://Doi.Org/10.1017/Cbo9781107415324.004

Birbil, Bulbnul, J.B.G.Frenk, M. (N.D.). On The Economic Order Quantity Model With Transportation Costs.

Blumenfeld, D. E. (2009). *Operations Research Calculations Handbook* (Second Edi). New York: Boca Raton London New York Crc Press.

Fahmi Sulaiman, N. (2015). Pengendalian Persediaan Bahan Baku Dengan Menggunakan Metode Eoq Pada Ud. Adi Mabel. *Jurnal Teknovasi*, *02*(1), 1–11.

Gede Agus Darmawan, Wayan Cipta, N. N. Y. (2015). Penerapan Economic Order Quantity (Eoq) Dalam Pengelolaan Persediaan Bahan Baku Tepung Pada Usaha Pia Ariawan Di Desa Banyuning Tahun 2013. *Jurnal Bisma Universitas Pendidikan Ganesha*.

Heizer, J., & Render, B. (2014). *Operations Management* (7th Editio). New Jersey: Pearson Education.

Hillier, F. S., & Lieberman, G. J. (2010). *Introduction To Operation Research* (Ninth Edit). New York: Mcgraw-Hill.

Indrayati, R. (2007). *Analisis Pengendalian Persediaam Bahan Baku Dengan Metode Eoq (Economic Order Quantity) Pada Pt . Tipota Furnishings Jepara*. Universitas Negeri Semarang.

Kalaiarasi, R. (2011). Optimization Of Economic Order Quantity Model On The Boundaries Of The Fill Rate, *6*(63), 3101–3110.

Maisuriya, A. R., & Bhathawala, P. H. (2013). A Deterministic Economic Order Quantity Model With Delays In Payments And Price Discount Offers. *Journal Of Engineering Research And Applications*, *3*(5), 384–385.

Nurhasanah. (2012). Analisis Persediaan Solar Dengan Menggunakan Metode Economic Order Quantity (Eoq) Pada Pt Anugerah Bara Kaltim. *Eksis*.

Onawumi, Oluleye, A. (2011). An Economic Order Quantity Model With Shortages , Price Break And Inflation, *1*(September), 465–476.

Panday, R., Rachmat, B., & Navanti, D. (2020). Evaluation Of Operating Cost For Money Packaging. *International Journal Of Scientific And Technology Research*, *9*(3), 6736–6741.

Rorim Panday; Hernawati. (2015). Application Methods Economic Order Quantity (Eoq) For Raw Materials Inventory Cost Analysis. In *Semnas & Call Of Paper, Apmmi 2015* (Pp. 300–306). Manado: Program Magister Manajemen Fakultas Ekonomi Dan Bisnis Universitas Sam Ratulangi Manado.

Saragi, G. L., & Setyorini, R. (2014). Analisis Pengendalian Persediaan Bahan Baku Daging Dan Ayam Dengan Menggunakan Metode Economic Order Quantity (Eoq) Pada Restoran Steak Ranjang Bandung. *E-Proceeding Of Management*, *1*(3), 542–553.

Tibrewala, & Kleinstein, A. (2000). Quantitative Methods In Business Problem #5: Economic Order Quantity Models, 1–17.

Wahyudi, R. (2015). Analisis Pengendalian Persediaan Barang Berdasarkan Metode Eoq Di Toko Era Baru Samarinda. *Ejournal Ilmu Admistrasi Bisnis*.

Yopan Maulana, T. R. (2018). Analisis Pengendalian Persediaan Bahan Baku Dengan Menggunakan Metode Economic Order Quantity (Eoq) Dalam Upaya Meminimumkan Biaya Produksi Pada Cv. Delapan-Delapan Kuningan. *Indon Journal Of Strategic Managementesian*, *1*(1), 1–8.

Yuliana, C., Topowijono, & Sudjana, N. (2016). Penerapan Model Eoq (Economic Order Quantity) Dalam Rangka Meminimumkan Biaya Persediaan Bahan Baku (Studi Pada Ud . Sumber Rejo Kandangan-Kediri). *Jurnal Administrasi Bisnis (Jab)*, *36*(1–9).