International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 09 September 2022
DOI: 10.47191/ijcsrr/V5-i9-48, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

Analysis of Inventory Management in Order to Reduce Overstock (Case Study of TVF Footwear)

Novia Fuji Lestari[1], Yuanita Handayati[2]
[1,2] School of Business and Management, Bandung Institute of Technology

ABSTRACT: TVF Footwear is a sandal and shoe brand originally from Bandung. It was founded in 2010 because, at that time, local industries were emerging, and they were motivated to make products that focus on the footwear category. TVF Footwear has an issue related to overstock inventory. The purpose of this research is to reduce overstock and improve inventory management in TVF Footwear. The root cause analysis is used Current Reality Tree (CRT) as a tool to find the root cause of overstock issue that faced by TVF Footwear. The result from root cause analysis are a lack of forecasting and deficient inventory management. The proposed solution is to prepare TVF footwear to apply the appropriate forecasting demand method for the next period and help the company to plan its inventory management by calculating the EOQ, ROP, and Safety stock. The result of the forecasting demand with the smallest forecasting error shows that the method chosen for Rainier is double exponential smoothing. The forecasting method that is suitable for Reiwal is trend analysis and the forecasting method that has the smallest error for Semeru is single exponential smoothing. The result for the EOQ method has a lower cost than the existing method. The total cost from the existing method is Rp 4.082.500.000 while the total cost using the EOQ method amounts to Rp 3.678.495.281. If the company can implement the EOQ method, the potential cost saving is Rp 404.004.718.

KEYWORDS: EOQ, Forecasting demand, Inventory management, Overstock, ROP, Safety stock.

1. INTRODUCTION

The fashion industry has increased over the past years. This sector has a significant contribution to Gross Domestic Product (GDP). According to kemenparekraf.go.id, the creative economy sector contributed IDR 1,134 trillion to Indonesia's Gross Domestic Product (GDP) in 2021. The contribution of each sub-sector is 41,5 % for culinary, 17,7 % for fashion, and 15 % for crafts, according to data from the Badan Pusat Statistik (BPS). The footwear industry is one of the subsectors of the fashion industry sector growing along the time. Based on information from idnfinancials.com, to boost their competitiveness, the Ministry of Industry continues to foster the growth of small and medium enterprises (SMEs) in the footwear industry. Referring to the article from Kemenperin.go.id, the footwear sector grew by 2.4 per cent in semester 1 of 2021 compared to the same period in 2020, which was still minus 4.5 per cent. The export value of this product group in January 2021 was USD 490.5 million, increased by 6.2% MoM and 15.6% YoY.

As described above, the Indonesian market's rapid expansion also suggests an enormous market potential, particularly in specific high-growth sectors. Entrepreneurs respond to the circumstances by expanding their businesses, one of which is TVF footwear, a fashion company. TVF Footwear is one of the brands that contribute to the growth of the creative economy, especially in the fashion industry, especially in footwear. TVF Footwear is a sandal and shoe brand originally from Bandung; it was founded in 2010 because, at that time, local industries were emerging, and they were motivated to make products that focus on the footwear category.

1.1 Business Issue

The increasing degree of competition in the footwear industry these days forces all companies to pay more attention to the market changes. Inventory is the most important component in a company and has a significant impact on business operations, therefore inventory optimization is required. TVF is a company that engaged in the sales of footwear especially sandals for casual. The problem that occurred in TVF Footwear is that the product ordered did not match with the demand that can cause an overstock. This problem affects the company performance, such as high cost, and ineffective inventory management. All production plan and ordering decisions at TVF Footwear are made based on the owner's judgement and does not take into consideration the historical data for the next period.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 09 September 2022
DOI: 10.47191/ijcsrr/V5-i9-48, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

Below is the comparation graph between demand and inventory, and the table of comparison cost between demand and inventory that occurred in 2021.

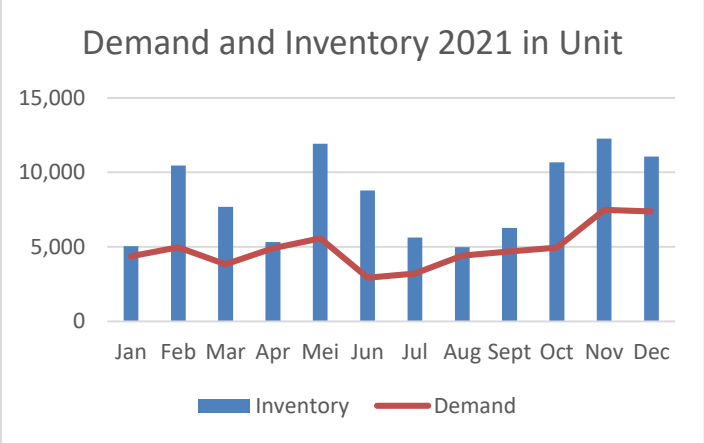


Figure 1.1 Comparison between demand and inventory in unit
(**Source:** Company database)

From the graph above, can be seen that the inventory level is high above the demand level in several months that cause an overstock. The highest excess inventory that occurred in 2021 is in November that has 12.259 units while the demand level is 7.483 unis. This excess inventory may have an impact on the costs incurred by the business. According to Almaktoom (2017), overstock is the natural result of excess inventories. This causes an issue to the company that has numerous negative consequences. One significant effect is an increase in cost. Storage and security fees rise and money is spent on non-essential products. This research will focus to improve the inventory for Rainier, Reiwal, and Semeru products that can represent other product within the company which has a significant contribution which gives 70,05% of total sales.

2. CONCEPTUAL FRAMEWORK

A conceptual framework is intended to direct the author as they conduct the study to find the solution to the issues that the company faced. It is helpful to describe the type of problem that needs to be solved, how the problem will be solved, and the recommendation for problem-solving. The issue from this research is that TVF Footwear facing an overstock problem in inventory. Below is the conceptual framework for this research.

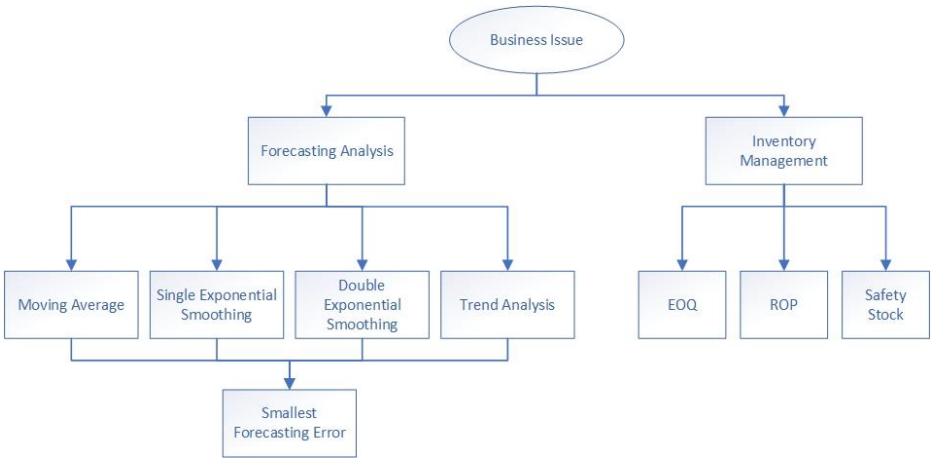


Figure 2.1. Conceptual Framework
(**Source:** Author's Analysis)

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 09 September 2022
DOI: 10.47191/ijcsrr/V5-i9-48, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

3. BUSINESS SOLUTION

3.1 Forecasting

This research will compare 5 methods of forecasting which are; Simple moving average 3 months, Simple moving average 4 months, Single Exponential Smoothing, Double Exponential Smoothing (Holt's Model), and Trend Analysis. After comparing those 5 methods, the method with the smallest forecasting error value in order to find the optimal method that will be used as sufficient insight for future demand.

3.1.1 Simple Moving Average 3 months

The simple moving average concept aims to average random fluctuations in a time series to discover the underlying direction in which the time series is changing (Jacob & Chase,2018).This research develops a forecast for the following month using the moving average from the previous three months. The calculation for this method is done by Minitab. Below is the calculation done by Minitab for Simple Moving Average 3 months for Rainier, Reiwal, and Semeru products.

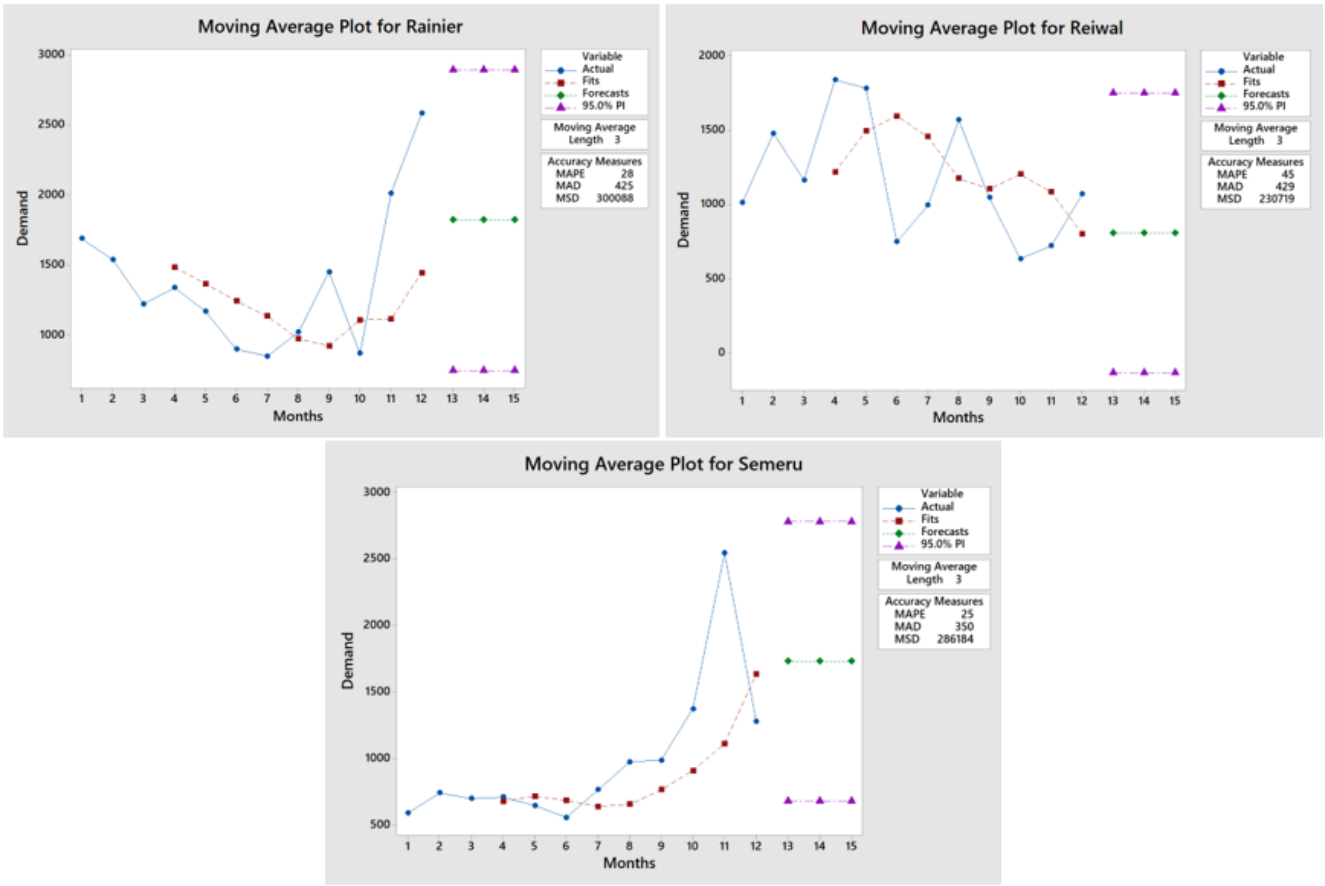


Figure 3.1. Simple Moving Average 3 months analysis of Rainie, Reiwal, and Semeru
(**Source:** Author's Analysis)

The result of forecasting error analysis using simple moving average 3 months above, Rainier product has 28 for MAPE and 425 for MAD and 300.088 for MSD. The forecasting error result for Reiwal is 45 for MAPE and 429 for MAD and 230.719 for MSD. The result for Semeru product is 25 for MAPE and 350 for MAD and 286.184 for MSD.

3.1.2 Simple Moving Average 4 months

Another method that is used in this research to develop a forecast for the following month is using the moving average from the previous four months. The calculation for this method is done by Minitab. Here is the calculation done by Minitab for Simple Moving Average 4 months for Rainier, Reiwal, and Semeru products.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 09 September 2022
DOI: 10.47191/ijcsrr/V5-i9-48, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

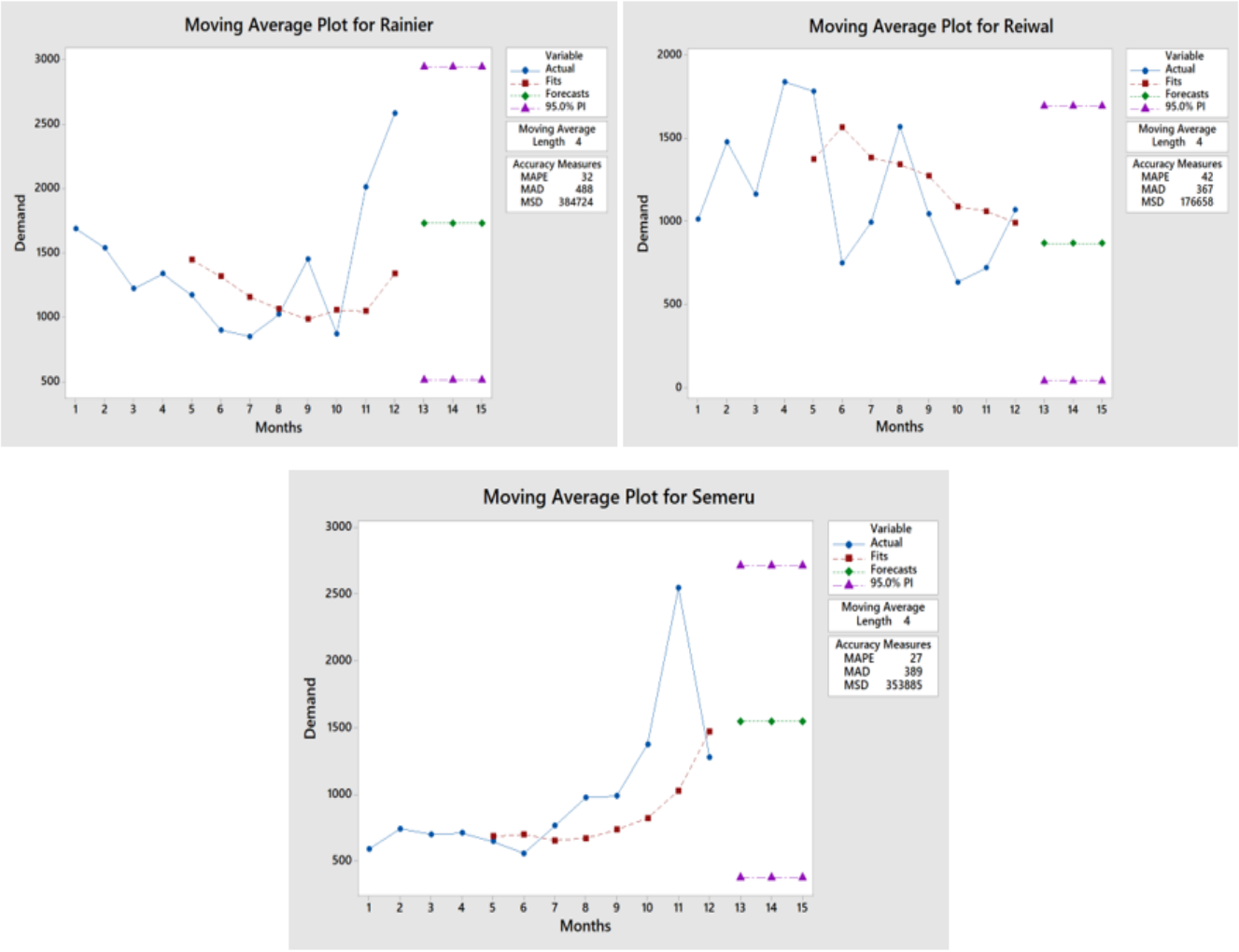


Figure 3.2. Simple Moving Average 4 months analysis of Rainier, Reiwal, and Semeru
(**Source:** Author's Analysis)

From the figure above, the forecasting error result for simple moving average 3 months for Rainier product is 32 for MAPE, 488 for MAD and 384.724 for MSD. For Reiwal product is 42 for MAPE, 367 for MAD and 176.658 for MSD. And for the last product, Semeru is 27 for MAPE, 389 for MAD and 353.885 for MSD.

3.1.3 Single Exponential Smoothing

Single Exponential Smoothing is another forecasting method that is used in this research. This method requires an alpha value (α) for smoothing constants. The smoothing constant value α for each product is generated by Minitab with optimal ARIMA. Here is the calculation done by Minitab for Single Exponential Smoothing for Rainier, Reiwal, and Semeru products.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 09 September 2022
DOI: 10.47191/ijcsrr/V5-i9-48, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

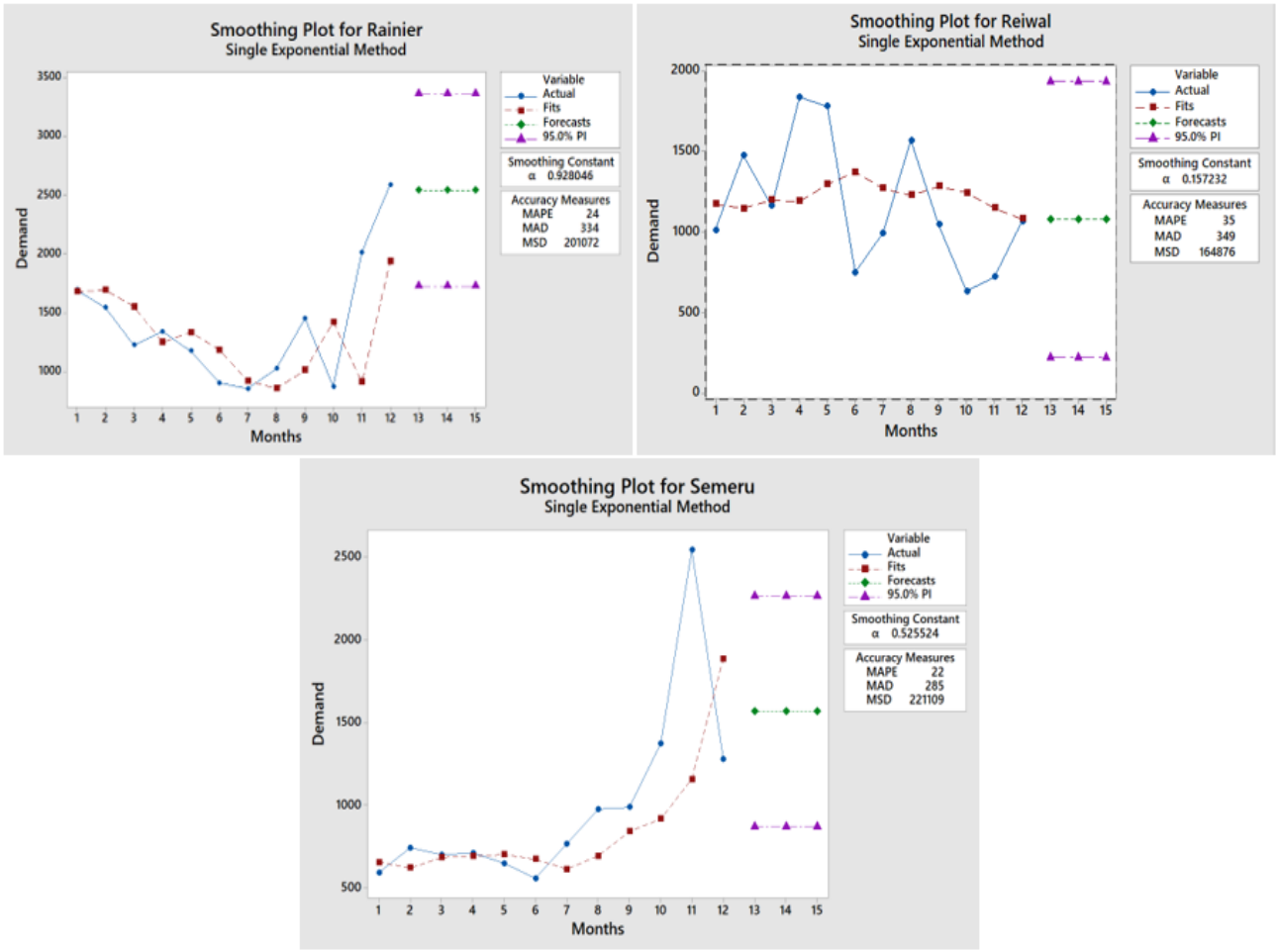


Figure 3.3. Single Exponential Smooting analysis of Rainier, Reiwal, and Semeru
(**Source:** Author's Analysis)

From the figure above, the forecasting error result for the Rainier product is 24 for MAPE, 334 for MAD, and 201.072 for MSD. For Reiwal product is 35 for MAPE, 349 for MAD and, 164.876 for MSD. And for the last product, Semeru is 22 for MAPE, 285 for MAD, and 221.109 for MSD.

3.1.4 Double Exponential Smoothing

Double exponential smoothing or Holt's Method method requires two value of smoothing constants as level value (α) and trend value (γ). In this research, the α value and γ value are generated by Minitab with optimal ARIMA. Below is the calculation done by Minitab for Double Exponential Smoothing for Rainier, Reiwal, and Semeru products.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 09 September 2022
DOI: 10.47191/ijcsrr/V5-i9-48, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

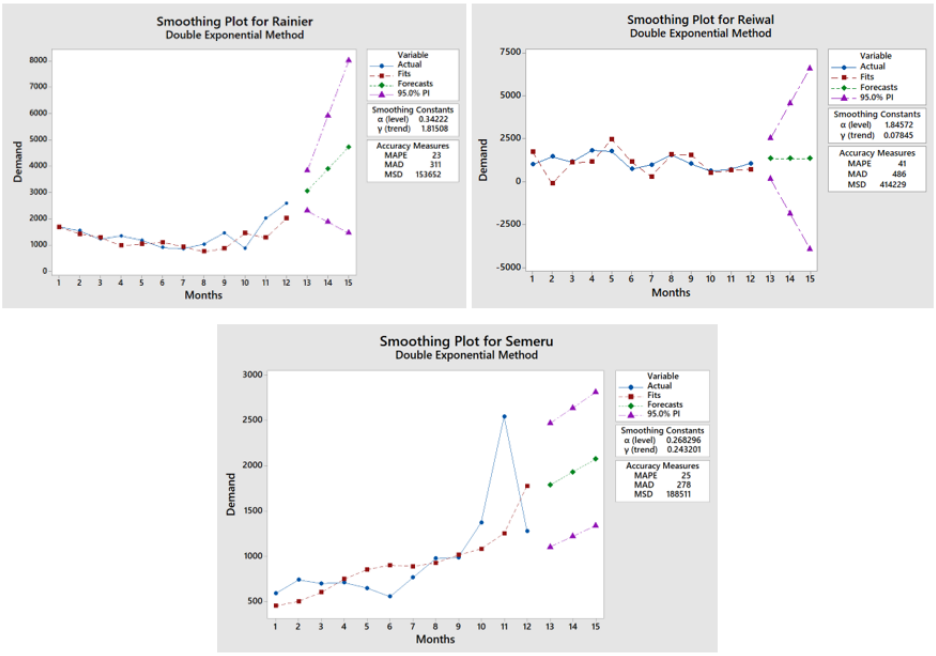


Figure 3.4. Double Exponential Smooting analysis of Rainier, Reiwal, and Semeru
(**Source:** Author's Analysis)

From the figure above, the forecasting error result for the Rainier product is 23 for MAPE, 311 for MAD and 153.652 for MSD. For Reiwal product is 41 for MAPE, 486 for MAD and 414.229 for MSD. For the last product, Semeru is 25 for MAPE, 278 for MAD, 188.511 for MSD.

3.1.5 Trend Analysis

Trend analysis will be used for forecasting in this research. The result of the analysis can be seen on the figure below.

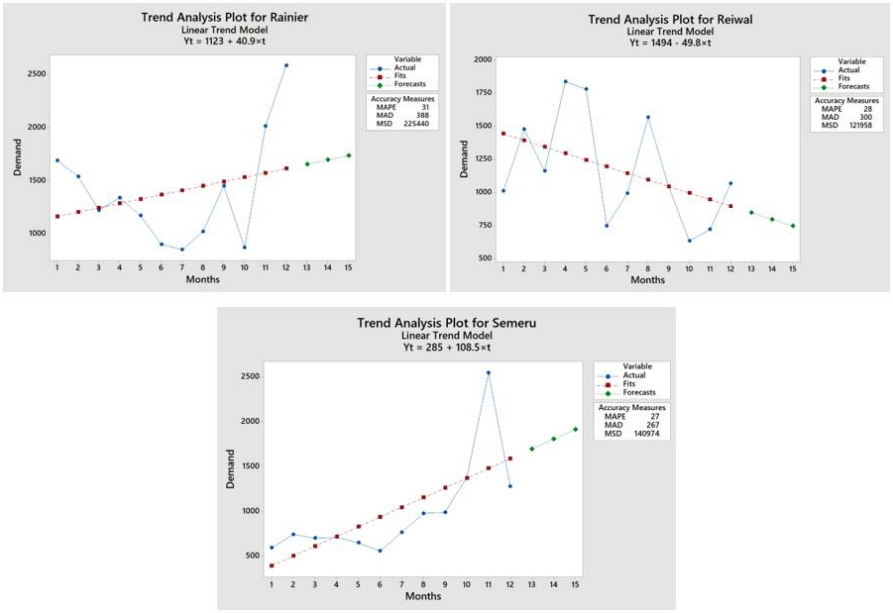


Figure 3.5. Trend Analysis Analysis of Rainier, Reiwal, and Semeru
(**Source:** Author's Analysis)

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 09 September 2022
DOI: 10.47191/ijcsrr/V5-i9-48, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

From the figure above, the forecasting error result for the Rainier product is 31 for MAPE, 388 for MAD, and 225.440 for MSD. For Reiwal product is 28 for MAPE, 300 for MAD, and 121.958 for MSD. And for the last product, Semeru is 27 for MAPE, 267 for MAD, and 140.947 for MSD.

3.1.6 Summary of Forecasting Error

After analyze the forecasting error from several methods above, the next step is to compare those forecasting errors and find the smallest one. The smallest forecasting error can help to find the optimal method that can be applied by the company. Here is the summary table for forecasting error from each method for Rainier, Reiwal, and Semeru products.

Product	Method	MAPE	MAD	MSD
Rainier	Simple Moving Average 3 Months	28	425	300,088.2
	Simple Moving Average 4 Months	32	488	384,724
	Single Exponential Smoothing	24	334	201,072
	Double Exponential Smoothing	23	311	153,652
	Trend Analysis	31	388	225,440
Reiwal	Simple Moving Average 3 Months	45	429	230,719
	Simple Moving Average 4 Months	42	367	176,658
	Single Exponential Smoothing	35	349	164,876
	Double Exponential Smoothing	41	486	414,229
	Trend Analysis	28	300	121,958
Semeru	Simple Moving Average 3 Months	25	350	286,184
	Simple Moving Average 4 Months	27	389	353,885
	Single Exponential Smoothing	22	285	221,109
	Double Exponential Smoothing	25	278	188,511
	Trend Analysis	27	267	140,974

Figure 3.6. Summary of Forecasting Error
(**Source:** Author's Analysis)

From the result above, can be seen that the smallest forecast error for Rainier products is from the Double Exponential Smoothing method which has 23 for MAPE, 311 for MAD, and 153,652 for MSD. The smallest forecast error for Reiwal products is from the Trend Analysis method which has 28 for MAPE, 300 for MAD, and 121,958 for MSD. And for Semeru products, the smallest forecast error is from Single Exponential Smoothing method which has 22 for MAPE, 285 for MAD, and 221,109 for MSD. Those methods with the smallest error is the optimal forecasting method for the company to gain more information to prepare for the upcoming demand.

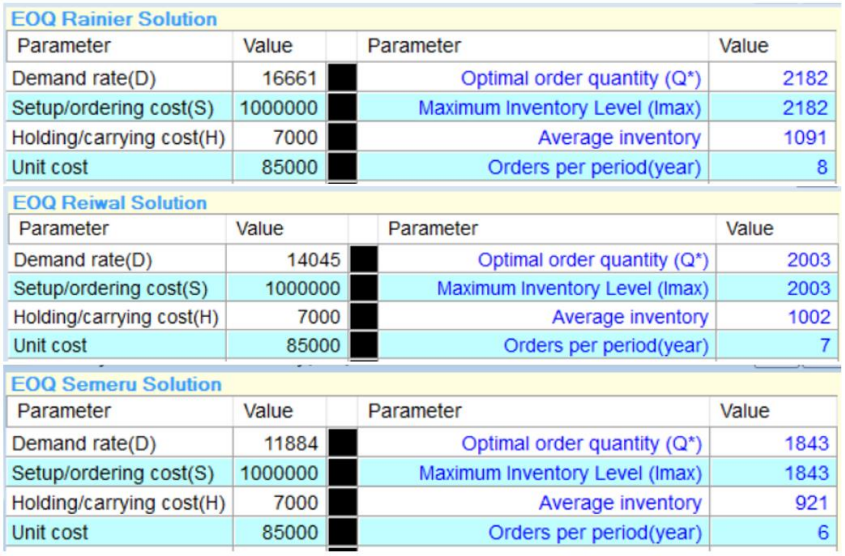
3.2 Inventory Management

According to the business issue above, managing the inventory can help the company in order to reduce the overstock in TVF footwear. The method that is used in this research are calculating the EOQ, ROP and Safety Stock. This method's output illustrates how much inventory has to be ordered, when the order needs to be placed, and to overcome the uncertainty.

3.2.1 Economic Order Quantity (EOQ)

EOQ is the number of orders that can minimize the total cost of inventory, and optimal purchases that can be the alternative solution for issue that faced by TVF Footwear. This method helps to determine how much total product that needs to be bought for each order to fulfil the demands for a period. EOQ calculation require data of annual demand in units (D), ordering cost (S), and holing cost (H). Here is the EOQ calculation for Rainier, Reiwal and Semeru product using POM QM software.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 09 September 2022
DOI: 10.47191/ijcsrr/V5-i9-48, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org



EOQ Rainier Solution

Parameter	Value	Parameter	Value
Demand rate(D)	16661	Optimal order quantity (Q*)	2182
Setup/ordering cost(S)	1000000	Maximum Inventory Level (Imax)	2182
Holding/carrying cost(H)	7000	Average inventory	1091
Unit cost	85000	Orders per period(year)	8

EOQ Reiwal Solution

Parameter	Value	Parameter	Value
Demand rate(D)	14045	Optimal order quantity (Q*)	2003
Setup/ordering cost(S)	1000000	Maximum Inventory Level (Imax)	2003
Holding/carrying cost(H)	7000	Average inventory	1002
Unit cost	85000	Orders per period(year)	7

EOQ Semeru Solution

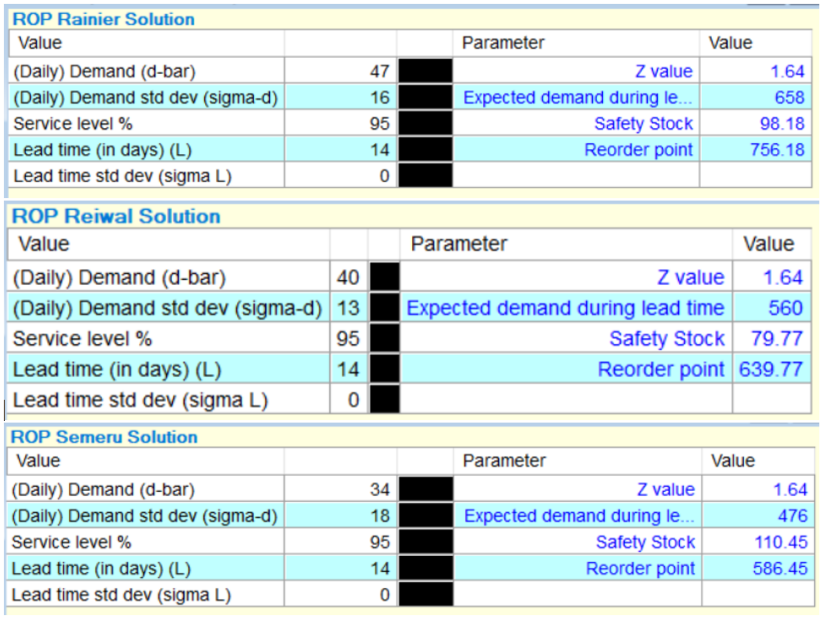
Parameter	Value	Parameter	Value
Demand rate(D)	11884	Optimal order quantity (Q*)	1843
Setup/ordering cost(S)	1000000	Maximum Inventory Level (Imax)	1843
Holding/carrying cost(H)	7000	Average inventory	921
Unit cost	85000	Orders per period(year)	6

Figure 3.7. EOQ Calculation for Rainier, Reiwal and Semeru
(**Source:** Author's analysis)

From the figure above, can be summarize that the optimal order quantity or EOQ for Rainier is 2.182 unit per order and the expected number of orders is 8. The EOQ result for Reiwal product is 2.003 unit with expected number of order amounting to 7. Last is EOQ result for Semeru product which amounting to 1.843 unit and the expected number of orders is 6.

3.2.2 Reorder Point (ROP) and Safety Stock

According to Nobil et al. (2020), the reorder point is a crucial milestone for businesses to determine the best time to place orders so they may prevent overstocking or shortages. Safety stock is extra stock to allow for uneven demand; a buffer (Heizer et al.,2017). Here is the calculation of ROP and safety stock for Rainier, Reiwal and Semeru in 2021 by POM QM application with the 95% sevice level and 14 days lead time.



ROP Rainier Solution

Value		Parameter	Value
(Daily) Demand (d-bar)	47	Z value	1.64
(Daily) Demand std dev (sigma-d)	16	Expected demand during le...	658
Service level %	95	Safety Stock	98.18
Lead time (in days) (L)	14	Reorder point	756.18
Lead time std dev (sigma L)	0		

ROP Reiwal Solution

Value		Parameter	Value
(Daily) Demand (d-bar)	40	Z value	1.64
(Daily) Demand std dev (sigma-d)	13	Expected demand during lead time	560
Service level %	95	Safety Stock	79.77
Lead time (in days) (L)	14	Reorder point	639.77
Lead time std dev (sigma L)	0		

ROP Semeru Solution

Value		Parameter	Value
(Daily) Demand (d-bar)	34	Z value	1.64
(Daily) Demand std dev (sigma-d)	18	Expected demand during le...	476
Service level %	95	Safety Stock	110.45
Lead time (in days) (L)	14	Reorder point	586.45
Lead time std dev (sigma L)	0		

Figure 3.8. ROP and Safety Stock Calculation for Rainier, Reiwal and Semeru
(**Source:** Author's analysis)

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 09 September 2022
DOI: 10.47191/ijcsrr/V5-i9-48, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

From the figure above, can be seen that the ROP for Rainier product are 757 units and the safety stock for Rainier product are 99 units. The result of ROP for Reiwal product are 640 units and 80 units for safety stock. And the result of ROP for Semeru product are 587 units and 111 units for safety stock.

3.2.3 Analysis of Alternatives

Comparing the existing method applied by the company with the EOQ method allows for the determination of the optimal inventory management strategy for TVF Footwear. The comparison for inventory cost between the existing method applied by TVF Footwear and the EOQ method is shown below. Both methods using the ordering cost per order amounting to Rp 1.000.000, the holding cost amounting to Rp 7.000 per unit per year and the purchasing cost is Rp 85.000 per unit. Below is the comparison between existing method and EOQ method.

Existing Method								
No.	Product	Actual Order	Order Frequency	Ordering Cost	Holding Cost	Total Inventory Cost	Total Purchasing Cost	Total Cost
1	Rainier	4,000	4	Rp 4,000,000.00	Rp 28,000,000.00	Rp 32,000,000.00	Rp 1,360,000,000.00	Rp 1,392,000,000.00
2	Reiwal	4,000	4	Rp 4,000,000.00	Rp 28,000,000.00	Rp 32,000,000.00	Rp 1,360,000,000.00	Rp 1,392,000,000.00
3	Semeru	2,500	6	Rp 6,000,000.00	Rp 17,500,000.00	Rp 23,500,000.00	Rp 1,275,000,000.00	Rp 1,298,500,000.00
					Total	**Rp 87,500,000.00**	**Rp 3,995,000,000.00**	**Rp 4,082,500,000.00**
EOQ Method								
No	Product	EOQ	Order Frequency	Ordering Cost	Holding Cost	Total Inventory Cost	Total purchasing Cost	Total Cost
1	Rainier	2,182	8	Rp 8,000,000.00	Rp 15,272,655.30	Rp 23,272,655.30	Rp 1,483,629,372.28	Rp 1,506,902,027.58
2	Reiwal	2,003	7	Rp 7,000,000.00	Rp 14,022,481.95	Rp 21,022,481.95	Rp 1,191,910,965.63	Rp 1,212,933,447.58
3	Semeru	1,843	6	Rp 6,000,000.00	Rp 12,898,682.10	Rp 18,898,682.10	Rp 939,761,124.66	Rp 958,659,806.77
					Total	**Rp 63,193,819.35**	**Rp 3,615,301,462.58**	**Rp 3,678,495,281.93**
					Difference	**Rp 24,306,180.65**	**Rp 379,698,537.42**	**Rp 404,004,718.07**

Figure 3.9. Comparison of total cost between Existing Method and EOQ Method
(**Source:** Author's Analysis)

From the figure above, the result of total cost from existing method is Rp 4.082.500.000 while the total cost using EOQ method amounting to Rp 3.678.495.281. This means that the potential cost saving by TVF Footwear is Rp 404.004.718 or it can also be called decreasing the cost up to 10% annually. Moreover, the frequency of order is relatively increase by using EOQ method while the quantity order is decrease for Rainier, Reiwal, and Semeru product. This result can help TVF Footwear in order to prevent company from overstock. Additionally, EOQ generates fewer inventory than the current method and still manages to cut down the overstock.

4. CONCLUSION

According to the analysis and alternative business solution for inventory issue that occur in TVF Footwear conducted in previous chapter, the author comes to the following conclusion:

1. There are several factors that causes the overstock problem in TVF Footwear. It might happen due to the planning that is not based on the historical data. So that TVF Footwear are unable to accurately plan their inventory purchase due to this. Without forecasting the demand to know the sufficient insight for future demand. Moreover, TVF Footwear has a deficient inventory management system. The company places the order based only on the owner's estimation without considering the level of demand. TVF Footwear also had anticipated losing potential customers by stocking the product more than the demand to avoid lost sales that cause an overstock problem.
2. The solution that can be applied by TVF Footwear in order to solve the overstock problem are doing the forecasting and inventory management. Both methods might help the company in developing a more accurate plan. Based on the forecasting analysis result (see Table 2.6), the best method to forecasting the demand for Rainier is Double Exponential Smoothing. The best forecasting method for Reiwal is Trend Analysis and the best forecasting method for Semeru is Single Exponential Smoothing.
3. Based on the inventory management calculation using EOQ method, the quantity of Rainier product that should be ordered is 2.182 unit per order for 8 times order. For Reiwal product, the EOQ method result is 2003 unit per order for 7 times order.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 09 September 2022
DOI: 10.47191/ijcsrr/V5-i9-48, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

Last, for the Semeru product, the quantity of products that should be ordered based on EOQ method calculation is 1843 unit per order for 6 times order. This result can help TVF Footwear in order to prevent company from overstock. Additionally, EOQ generates fewer inventory than the current method and still manages to cut down the overstock. Moreover, the EOQ method generate a decrease total cost from those three products compared with the existing method from TVF Footwear. The result of total cost from existing method is Rp 4.082.500.000 while the total cost using EOQ method amounting to Rp 3.678.495.281. This means that the potential cost saving by TVF Footwear is Rp 404.004.718.

5. RECOMMENDATION

Based on the observation and analyze that have been conducted in the previous chapter, the recommendations proposed by the author to solve the problem of overstock that occur in TVF Footwear in order to improve the inventory management for the next period, as follows:

1. Company should consider to apply the forecasting analysis using historical data to gain an information regarding demand estimation for the next period.
2. Develop an EOQ, ROP, and Safety stock to avoid overstock or stockout. This method also proposed a better financial condition by cost efficient.
3. This research is only focusing on data in 2021. Therefore, the company should review the forecasting demand analysis, EOQ, ROP, and safety stock periodically to improve inventory management in the future.

6. IMPLEMENTATION PLAN

The aim of implementation plan is to provide the timeline regarding the propose solution for the business issue. Considering the analysis from this research, the implementation plan for an optimal inventory management and applying the forecasting method at TVF Footwear can be seen in the table below:

Activity	October				November				December			
	1	2	3	4	1	2	3	4	1	2	3	4
Socialization regarding the solution to improve inventory management system to TFV Footwear												
Coordinating to apply forecasting calculation												
Coordinating to apply EOQ method												
Collectin data												
Execution the analysis												
Implementing the result												
Inventory management evaluation												

Figure 3.10. Implementation Plan
(**Source:** Author's Analysis)

REFERENCES

1. Almaktoom, A.T., (2017) *Stochastic Realibility Measurement and Design Optimization of Inventory Management System.* Journal of Complexity 11(9). DOI: https://doi.org/10.1155/2017/1460163
2. Ananda, R.P. (2021). Menparekraf Sandiaga Ungkap Industri Fashion Salah Satu Tulang Punggung Ekonomi Kreatif Indonesia. Retrivied from: https://www.inews.id/travel/belanja/menparekraf-sandiaga-ungkap-industri-fashion-salah-satu-tulang-punggung-ekonomi-kreatif-indonesia. [Accessed on 2 February 2022]
3. Barney, Jay B. and Hesterly, William S. (2019). *Strategic Management and Competitive Advantage.* United Kingdom: Pearson Education Limited.
4. Jacobs, F. Robert and Chase, Richard B. (2018). *Operations and Supply Chain Management 15th Edition*. New York: McGraw-Hill Education Ltd.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 09 September 2022
DOI: 10.47191/ijcsrr/V5-i9-48, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

5. Kusuma,Y.A. (2019). *Supply Arrangement of Raw Material and Sugar Stock to Organize Overstock Risk in Warehouse.* Journal of Physics: Coference Series, 21(3). DOI: https://doi.org/10.1088/1742-6596/1375/1/012048
6. Nobil, A.H., Sedigh A.H., & Cardenas-Barron, L.E. (2020). *Reorder Point for The EOQ Inventory Model with Imperfect Quality Items.* Journal of Ain Shams Engineering (11). DOI: https://doi.org/10.1016/j.asej.2020.03.004
7. Render, Barry, Heizer, Jay, Munson, Chuck. (2017). *Operation Management : Sustainability and Supply Chain Management 12th Edition*. England: Pearson Education Limited.
8. Seyedan, M., Mafakheri, F., & Wang, C. (2022). *Cluster-based Demand Forecasting using Bayesian Model Averaging: An Ensemble Learning Approach.* Journal of Decision Analytics (3). DOI: https://doi.org/10.1016/j.dajour.2022.100033
9. Thomopoulus, N. T. (2015). *Demand Forecasting for Inventory Control*. Switzerland: Springer.
10. Kemenparekraf (2021). *Siaran Pers: Menparekraf Optimistis 2021 Jadi Tahun Pemulihan Ekonomi Kreatif Global.* Retrivied from https://www.kemenparekraf.go.id/berita/Siaran-Pers-:-Menparekraf-Optimistis-2021-Jadi-Tahun-Pemulihan-Ekonomi-Kreatif-Global [Accessed on 2 February 2022]
11. Kemenperin. (2021). Penguat Ekosistem Industri Alas Kaki Melalui Program Kemitraan BPIPI Retrivied from: https://kemenperin.go.id/artikel/22842/Penguatan-Ekosistem-Industri-Alas-Kaki-Melalui-Program-Kemitraan-BPIPI [Accessed on 2 February 2022]
12. Lestari, Reni (2021). Ekonomi Membaik, Industri Alas Kaki Diproyeksi Catatkan Kinerja Puncak Tahun Ini. Retrivied from: https://ekonomi.bisnis.com/read/20211205/257/1474005/ekonomi-membaik-industri-alas-kaki-diproyeksi-catatkan-kinerja-puncak-tahun-ini. [Accessed on 2 February 2022]

Cite this Article: Novia Fuji Lestari, Yuanita Handayati (2022). Analysis of Inventory Management in Order to Reduce Overstock (Case Study of TVF Footwear). International Journal of Current Science Research and Review, 5(9), 3670-3680