

ABSTRAK

CV Mitra Jogja Karya Persada (MJKP) merupakan salah satu distributor personal produk Sari Roti yang bertugas untuk mendistribusikan produk Sari Roti dari PT NIC, Semarang secara konsinyasi di toko dan *retail* daerah Sleman, Yogyakarta selain Indomaret dan Alfamart. CV MJKP menjadi distributor tetap harus menjual produk minimal sebesar Rp800.000.000,-. Metode penetapan pemesanan produk ke PT NIC masih dilakukan secara intuisi tanpa melakukan sistem perhitungan data secara akurat, sehingga selama ini distributor menerima kerugian dari banyaknya produk yang tidak terjual akibat masa kadaluarsa yang sudah lewat. Oleh karena itu diperlukan perencanaan pengalokasian anggaran produk.

Penelitian ini menggunakan model inventori *multi item single period* dalam mengolah data. Model inventori ini berdasarkan data rekapitulasi penjualan 1 bulan, serta mengumpulkan data harga jual, harga beli, harga obral, dan biaya *penalty* tiap kategori produk. Tahap yang dilakukan yaitu iterasi ukuran pemesanan optimum dengan menggunakan nilai *Lagrange Multiplier* dari 0 hingga 1. Sebagai validasi, besarnya biaya penjualan dibandingkan dengan besarnya anggaran yang ditetapkan PT NIC dan biaya penjualan pada sistem nyata.

Hasil pengolahan data menggunakan model inventori *multi item single period* dapat disimpulkan bahwa jumlah persediaan pesanan roti (Q_i) optimal ke 500 toko dan *retail* sebaiknya saat nilai $M=0$ membutuhkan biaya penjualan sebesar Rp658.762.000,-, dengan rincian produk tiap jenisnya yaitu $A_1=3.982$ unit, $A_2=37.395$ unit, $A_3=2.973$ unit, $A_4=9.075$ unit, $A_5=3.227$ unit, $A_6=3.552$ unit, $A_7=2.336$ unit, $B_1=624$ unit, $B_2=1.342$ unit, $B_3=475$ unit, $B_4=1.851$ unit, $B_5=180$ unit, $B_7=1.692$ unit, $B_8=2.840$ unit, $C_1=3.073$ unit, $C_2=2.723$ unit, $C_3=2.849$ unit, $C_4=1.580$ unit, $D_1=695$ unit, $D_2=1.271$ unit, $D_3=224$ unit, $D_4=1.001$ unit, dan $D_5=868$ unit, $D_6=487$ unit, $D_7=113$ unit, $E_1=892$ unit, $E_2=3.412$ unit, $E_3=614$ unit, $E_4=1.175$ unit, $E_5=1.217$ unit, $E_6=640$ unit, $E_7=562$ unit, $F_1=1.098$ unit, $F_2=2.262$ unit, $F_3=866$ unit, dan $F_4=3.182$ unit.

Kata kunci: Model Inventori *Multi Item Single Period*, Anggaran, Nilai *Lagrange Multiplier*

ABSTRACT

CV Mitra Jogja Karya Persada (MJKP) is a distributor of Sari Roti personal products that is related to complement Sari Roti products from PT NIC, Semarang with consignment in stores and retail in the Sleman, Yogyakarta area through Indomaret and Alfamart. CV MJKP being a distributor, still has to sell products of at least Rp800,000,000,-. The method of determining product orders to PT NIC is still carried out intuitively without doing an accurate data calculation system, so that so far the distributor has received excess of unsold products according to the expiration period that has passed. Therefore we need a product budget allocation planning.

This study uses a single period multi-item inventory model in processing data. This inventory model is based on 1-month sales recapitulation data, and collects data on selling prices, buying prices, clearance prices, and penalty prices for each product category. The stage taken is the comparison of the optimal order size using the value of the Lagrange Multiplier from 0 to 1. As validation, the amount of sales costs is compared with the amount of the budget set by PT NIC and the cost of sales on a real system.

Results Processing data using a multi-period inventory model single period can be concluded that the optimal number of orders of bread (Q_i) to 500 stores and retail when the value of $M = 0$ requires a sales cost of Rp658,762,000, - using the product according to demand type $A_1 = 3,982$ units, $A_2 = 37,395$ units, $A_3 = 2,973$ units, $A_4 = 9,075$ units, $A_5 = 3,227$ units, $A_6 = 3,552$ units, $A_7 = 2,336$ units, $B_1 = 624$ units, $B_2 = 1,342$ units, $B_3 = 475$ units, $B_4 = 1,851$ units, $B_5 = 180$ units, $B_7 = 1,692$ units, $B_8 = 2,840$ units, $C_1 = 3,073$ units, $C_2 = 2,723$ units, $C_3 = 2,849$ units, $C_4 = 1,580$ units, $D_1 = 695$ units, $D_2 = 1,271$ units, $D_3 = 224$ units, $D_4 = 1,001$ units, and $D_5 = 868$ units, $D_6 = 487$ units, $D_7 = 113$ units, $E_1 = 892$ units, $E_2 = 3,412$ units, $E_3 = 614$ units, $E_4 = 1,175$ units, $E_5 = 1,217$ units, $E_6 = 640$ units, $E_6 = 640$ units; units, $E_7 = 562$ units, $F_1 = 1,098$ units, $F_2 = 2,262$ units, $F_3 = 866$ units, and $F_4 = 3,182$ units.

Keywords: Single Period Multi-Item Inventory Model, Budget, Lagrange Multiplier Value