PERENCANAAN AGGREGAT PRODUKSI MINUMAN HERBAL DI CV GENTONG MAS

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ABSTRAK

Pada tahun 2019 CV Gentong Mas putus kontrak kerjasama dengan PT Oriya Khazanah Sejahtera. Akibat dari putus kontrak tersebut CV Gentong Mas mengalami permintaan yang tidak stabil. Lalu saat pandemi covid-19 terjadi di Indonesia pada bulan Maret 2020 permintaan sempat mengalami peningkatan meskipun tidak signifikan, yaitu sebesar 15900 karton, Sementara itu pada bulan Februari permintaan hanya mencapai 10650 karton. Sehingga ada peningkatan sebesar 5250 karton. Sehingga ada peningkatan sebesar 5250 karton. Akan tetapi pada bulan-bulan berikutnya permintaan konsumen bervariatif lagi setiap bulannya, bahkan mengalami penurunan. Seperti pada bulan April total permintaannya ialah 11890 karton, sehingga terdapat penurunannya sebesar 4010 karton.

Pada penelitian ini akan dilakukan peramalan dan perencanaan aggregate. Peramalan menggunakan 3 metode yaitu *Autoregressive integrated moving average* (*Arima*), *Seasonal Autoregressive integrated moving average* (*Sarima*) dan *Holt-Winters*. 3 Metode tersebut digunakan untuk mengetahui hasil peramalan mana yang terbaik untuk 1 tahun mendatang, terhitung sejak September 2020 hingga Agustus 2021. Hasil peramalan ini di lihat dari 2 aspek. Yaitu Nilai MSE terkecil dan uji validasi. Sedangkan untuk perencanaan aggregat menggunakan 5 metode, yaitu *constant regular time employee (level strategy), constant with initial employee (level strategy), up-to-demand with regular time employee, up-to-demand with regular and overtime employee* dan *up-to-demand with no hiring/dismissal.* Hasil perencanaan aggregat ini di lihat dari total biaya produksi paling kecil/minimum.

Berdasarkan hasil pengolahan data peramalan menggunakan aplikasi *minitab,* perbandingan nilai MSE dan uji validasi hasil peramalan menunjukkan bahwa metode terbaik ialah metode *arima.* Karena hasil peramalannya mendekati hasil permintaan yang sebenarnya. Sedangkan hasil pengolahan data perencanaan aggregat menggunakan aplikasi *winqsb*, dan perbandingan hasil total biaya produksi menunjukkan bahwa metode terbaik yang dapat digunakan perusahaan ialah metode *Constant regular time employee (level strategy), Constant with initial employee (level strategy)* dan *Up-to-demand with no hiring/dismissal.* tiga metode ini menghasilkan total biaya produksi paling rendah yaitu sebesar Rp 170.660.600.

Kata Kunci: Peramalan, Perencanaan Aggregat, Biaya Produksi

AGGREGATE PLANNING FOR HERBAL BEVERAGE PRODUCTION IN CV GENTONG MAS

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ABSTRACT

In 2019 CV Gentong Mas terminated the cooperation contract with PT Oriya Khazanah Sejahtera. As a result of the termination of the contract, CV Gentong Mas experienced unstable demand. Then when the covid-19 pandemic occurred in Indonesia in March 2020, the demand had increased even though it was not significant, which was
15900 cartons. Meanwhile, in February the demand only reached 1 0650 cartons, so there was an increase of 5250 cartons. However, in the following months consumer demand varied again every month, and even decreased. As in April the total demand was 11890 cartons, so there was a decrease of 4010 cartons. In this study, forecasting and aggregate planning will be carried out. Forecasting uses 3 methods, namely Autoregressive integrated moving average (Arima), Seasonal Autoregressive integrated moving average (Sarima), and Holt-Winters. 3 These methods are used to find out which forecasting results are the best for the next 1 year, starting from September 2020 to August 2021. The results of this forecasting are seen from 2 aspects, namely the smallest MSE value and validation test. Meanwhile, for aggregate planning using 5 methods, namely constant regular time employee (level strategy), constant with initial employee (level strategy), up-to-demand with regular time employee, up-to-demand with regular and overtime employee and up-to-date employee. to-demand with no hiring/dismissal. The results of this aggregate planning are seen from the smallest/minimum total cost of production.
Based on the results of forecasting data processing using the minitab application, the comparison of MSE values and the validation test of the forecasting results shows that the best method is the Arima method. Because the forecasting results are close to the actual demand results. Meanwhile, the results of processing aggregate planning data using the winqsb application, and the comparison of the results of total production costs indicate that the best method that can be used by the company is the method of Constant regular time employee (level strategy), Constant with initial employee (level strategy) and Up-to-demand with no hiring/dismissal. These three methods produce the lowest total cost of production, which is Rp. 170.660.600.

Keywords*: Forecasting, Aggregate Planning, Production Costs*