Analisis Peramalan Permintaan Barang Consumer Goods dengan Menggunakan Neural network dan ARIMA = Forecast Analysis of Consumer Goods Demand Using Neural network and ARIMA

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Abstrak

Pertumbuhan ekonomi mengakibatkan tingkat konsumsi masyarakat meningkat, termasuk didalamnya adalah tingkat konsumsi barang consumer goods. Peningkatan tingkat konsumsi memberikan peluang bagi perusahaan-perusahaan untuk meingkatkan margin keuntungannya. Dengan persaingan dengan kompetitor yang begitu ketat, perencanaan produksi menjadi hal yang sangat vital bagi perusahaan. Peramalan jumlah permintaan barang yang akurat dibutuhkan untuk memperoleh operasi produksi yang efektif dan efisien. Metode ARIMA merupakan metode peramalan yang cukup populer untuk peramalan data time series dan terbukti memberikan hasil peramalan yang cukup akurat pada beberapa penelitian yang telah dilakukan sebelumnya. Sedangkan metode neural network memiliki keunggulan untuk mendeteksi pola nonlinear yang ada di dalam data sehingga memiliki performa yang baik saat digunakan untuk melakukan peramalan untuk data yang sifatnya nonlinear. Metode hybrid yang mengkombinasikan ARIMA dengan neural network juga diajukan dalam penelitian ini untuk menganalisis performa kombinasi model gabungan dalam melakukan peramalan. Dalam penelitian ini, neural network menjadi model dengan tingkat akurasi yang lebih baik dibandingkan metode lain.
.....Economic growth results in increased consumptions levels of the citizen, including the consumption level of consumer goods. An increased level of consumption provides opportunity for companies to raise the profit margin. With tight competition against the competitor, production planning is very vital for the company. Forecasting an accurate number of demands is required to obtain production operation which are efficient and effective. ARIMA is one of the forecasting method which is a fairly popular for forecasting time series data and proven to give a fairly accurate forecasting result based on some researches that has been done before. While neural network method has advantages for detecting nonlinear patterns in the data, resulting a good performance when forecasting for the nonlinear nature of data. Hybrid method which combines the ARIMA with neural network also proposed in this study to analyze the performance of combination forecasting models. In this study, the neural network model with a better accuracy than other methods. <hr> Economic growth results in increased consumptions levels of the citizen, including the consumption level of consumer goods. An increased level of consumption provides opportunity for companies to raise the profit margin. With tight competition against the competitor, production planning is very vital for the company. Forecasting an accurate number of demands is required to obtain production operation which are efficient and effective. ARIMA is one of the forecasting method which is a fairly popular for forecasting time series data and proven to give a fairly accurate forecasting result based on some researches that has been done before. While neural network method has advantages for detecting nonlinear patterns in the data, resulting a good performance when forecasting for the nonlinear nature of data. Hybrid method which combines the ARIMA with neural network also proposed in this study to analyze the performance of combination forecasting models. In this study, the neural network.