ABSTRACT

Distribution of products is a vital part in the operations management process for each book publishing company. One of the important processes in the distribution is to determine the exact proportion of the number of products to be distributed to the company's sales agents. Agents do not let lack of inventory when demand increases, and do not let excess inventories if demand turns out a little. Inventories of goods in the warehouse had to be proportionate, must be sufficient to meet the increasing demand for agents suddenly occur and reduce the excessive accumulation of goods.

During the prediction in the number of products still using the limited knowledge and manual calculation of the marketing manager. Sometimes this division does not match the estimates, can be predicted that the company did not get the maximum benefit. One way to overcome this problem is created a system that can predict product supply books to the agents of the company that supplies goods to suit it needs. This system was built to help company to making decision through data analysis and policy manipulation using the algorithmsv model.

The algorithm used for prediction case is multifarious. But in this used Grammatical Evolution (GE) algorithm to forcast the time series data. GE using Backus Naur Form grammar (BNF) defined in accordance with the characteristics of the problem so that later can create potential solutions to candidates on a case. With these advantages, GE can do a search for the very many possible predictive models, both linear and non-linear.

Based on the testing that has been done can be seen that Grammatical Evolution can be used in cases of product supply forcasting based Pustaka Arafah book sales. However, the system has not been satisfactory degree of accuracy in forcasting the N periods ahead. So, should made the BNF definition that more suitable to the characteristics of data.

Key words:forcasting, supply of product, time series, Evolutionary Computation (EC), grammatical evolution (GE)