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Construct the Prediction Model for China Agricultural Output Value Based on the Optimization Neural Network of Fruit Fly Optimization Algorithm

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Abstract: Since agriculture is the foundation of a country and the industry that people depend on for life, it is particularly important for the development of national economy, and it has a higher output value than forestry, fishery and animal husbandry, so it occupies a very important position in the economic development of a country.The aim of this paper is to strengthen the capacity of prediction mode for total agricultural output value. This paper provides relevant government departments a reference and solves the problem of the lack of predictive ability of prediction mode for total agricultural output value in previous study. Different from previous literature, this paper adopts the new CFOA to optimize the parameters of GRNN, which contains innovative and reference value in some degree. Besides the way to validate this new model is to take the agricultural output value of the past years as a research sample and test it repeatedly. The study resultshave indicated that the total agricultural production valueaccounts for a higher proportion of agriculture, forestry, fishery and animal husbandry and the proportion tends to decline year by year; it can be found through 4 evaluation indexes that the prediction model that optimizes the smoothing parameters of GRNN through CFOA has a better predictive ability than the other two prediction models.

Keywords:

1. INTRODUCTION

Fruit Fly Optimization Algorithm, Improved Fruit Fly Optimization Algorithm, Chaos Fruit Fly Optimization Algorithm, General Regression Neural Network, Total Agricultural Production Value.

Agriculture is the source of food and clothing and foundation of survival for human beings, and the cornerstone of the development of national economy, which is closely related to the national life. The development of agriculture and improvement of labor productivity will provide rich labor resources for the development of other sectors in national economy. However, China's agricultural production is relatively backward, which has become the weakest link in the national economy, and if not strengthened, it will be difficult to support the development of other sectors of the national economy; if the problem cannot be effectively resolved in agricultural development, it will greatly affect the people's quality of life, may hinder the development of national economy and may also affect the security and stability of the country itself. Therefore, the development of China's agriculture is the state affairs that the Chinese government shall pay attention . In the study, it will solve the problems in agricultural development by using output prediction model to analyze the factors affecting agricultural development.

At present, relevant literature devoted to the study of agricultural development such as Wang Yan (2015) has provided a feasible decision-making basis for the optimization of Shandong's agricultural production