BACKPROPAGATION ARTIFICIAL NERVE NETWORK TO PREDICTE HUMAN DEVELOPMENT INDEX IN WONOSOBO DISTRICT

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ABSTRACT

One of the sustainable development agendas agreed by world countries until 2030 is the Human Development Index (HDI). The Human Development Index (HDI) is a tool for measuring the status of human development which focuses on the progress and achievements of programs as well as studies with national programs to see the success of developing the quality of human life in a place. The United Nation for Development Program (UNDP) made changes to the HDI assessment index because it was no longer relevant. Improving HDI with the new method has four basic components, including Life Expectancy (LE), Expected Years of Schooling (EYS), Average Years of Schooling (AYS), whereas previously the old method only had three dimensions. The problem of changing the HDI assessment index is that it certainly changes the value and calculation of the HDI itself. With these problems, this research was conducted to predict the HDI percentage in the following year which can be used as a benchmark for the success of existing work programs, especially in Wonosobo Regency. Data regarding HDI in Wonosobo Regency was obtained through the Wonosobo Central Statistics Agency. The method for processing data uses Backpropagation Artificial Neural Networks (ANN). ANN has quite good capabilities for analyzing complex data and has better accuracy than several other methods. The data scheme that will be used consists of 80% training data and 20% test data. The hope is that this research will produce an overview or prediction of the percentage of HDI values in the following year and provide answers to whether the calculations and reality will be the same.

Keywords: Artificial Neural Network, Backpropagation, Human Development Index.