

Comparative Analysis of Deep Learning Models for Forecasting Turkiye's Seafood Exports

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ABSTRACT

As the income level of countries increases with the increasing world population, the demand for aquaculture products increases. As a result of technological developments in the storage and distribution of seafood products, it has become an important sector for national economies. The aim of this study is to determine whether machine learning and deep learning methods can be utilized in forecasting Türkiye's seafood exports and to test which forecasting models will give better results. For this purpose, the performance parameters of LSTM, RNN, BiLSTM and GRU models are compared. The findings show that deep learning method can be utilized in forecasting Türkiye's seafood export volume and better results are obtained with GRU and BiLSTM performance parameters compared to the other two models. Developments in foreign trade in recent years have had a positive impact on aquaculture trade. With its existing potential and the use of modern and advanced technologies, Türkiye's aquaculture sector has made significant progress, and this has had a positive impact on exports. In this sense, estimating Türkiye's aquaculture export volume will help producers to plan supply and sales and exporters to develop marketing strategies.

Keywords: Seafood export, deep learning, machine learning, time series analysis

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