Comparing Soft Computing Techniques for Estimating Demand of Season Ticket Holders

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Abstract

Sports have macroeconomic effects and profound impacts on the level of development of countries. Therefore, sports economics deserves and receives attention in the literature. In this study, season ticket holders (STHs), who have a significant effect on sports economics, are the main concern. STHs have strategic and financial importance to professional sports teams. STHs play a key role on stadium economics of soccer teams. Considering these points, soft computing techniques, adaptive neuro-fuzzy inference system (ANFIS) and artificial neural network (ANN), were utilized to predict demand of season ticket holders of soccer clubs in this study. Real data of soccer clubs from multiple countries were used in the training and testing processes of the models. The performance measures indicated that both of the proposed models could be used for prediction purposes effectively. However, the ANFIS model with hybrid optimization outperformed the ANN model. Contrary to the studies concentrating on analyzing determinants of the STH demand, this study is the first for predicting the demand of season ticket holders by using two competitive methods.
References


**Index Terms**

Computer Science      Artificial Intelligence

**Keywords**

Stadium Economics; ANFIS; Demand Forecasting; ANN