

Abstract

The main aim of this study was to assess the predictive qualities of odds related to football offered by betting companies when used as means of prediction, focusing on odds provided on the five major leagues in Europe. This was achieved by using machine learning algorithms, namely by using Decision trees and Neural networks. This study aimed to discover whether it is possible to use machine learning algorithms in conjunction with odds to predict match results. It also aimed to determine whether accuracy of odds as means of prediction has increased over the years and finally determining in which league were odds the most accurate. It is noted that the predictive quality differs based on the league being studied. A particular study states that improvements can be seen over the years when using odds to predict match outcomes. It also highlights how odds on the French league perform the worst, possibly due to equal level of quality between the teams, thus making matches harder to predict. Data was manually gathered from *football-data.co.uk*, which provides .csv files with match details and odds on the respective match from multiple betting companies. An application was developed using C# to parse the CSV files and store relevant information in an SQL database developed specifically for this study. Final datasets were then produced using an SQL query and saved as .csv files. R studio and machine learning techniques were used to examine the predictive qualities of odds across 18 seasons. When looking at the results obtained, it is noticeable that the accuracy levels are close to uniform over the years, suggesting that no significant improvement has been made. When looking at the odds of a single company, it is visible that accuracy levels are very similar to that obtained by other companies included in this study. This finding is in agreement with findings presented by (Marek, 2018) that the closeness in accuracy results suggests that models that are used to produce odds are similar between bookmakers. Results suggest that the predictive qualities of odds on football matches are not reliable as means of prediction, as most of the results rarely obtained accuracy higher than 50%. On average Odds on the Premier League are the most accurate when compared to other leagues, while odds on the Bundesliga performed the worst.