

# Abstract

The purpose of this thesis is to forecast one day international matches and then develop player rating based on these forecasts. We forecast the one day international (ODI) cricket matches based on ball by ball probabilities by using binary logistic regression as we have a categorical response variable (match outcome). In order to find best models, we used different tools such as: Akaike Information criterion, Nagelkerke's  $R^2$ , classification table and found that lead, wicket and winning difference ratio (WDR) are suitable for modelling. Graphical representation of coefficients shows the behavior of covariates throughout the match. To assess the accuracy of results based on ball by ball probabilities, we compared them with bookmaker's odds that showed that proposed models performs well.

Rating in cricket could be of two types: player's rating and team's rating. We only discussed player's rating in this work. In player's contribution we encountered batting, bowling and fielding contribution based on the probabilities obtained from models. Calculation of batting contributions of players are based on the runs scored, number of balls faced, maintaining of the run rate and the situation in which player's performance. Similarly, bowling contributions are based on the number of wickets taken, runs conceded, fielding contributions are based on wicket-taking chances that fielder avails in the form of catches, run outs, stumped out. The player who gets maximum contributions, declare as the best player of the match.