An Efficiency and Consistency Based Approach for Selecting the Best Cricket Team

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Abstract
Devising a scientific method for the sports team selection remains an area of interest for the scholars. Existing literature related to the team selection and performance measurement of the players in cricket is primarily efficiency driven and limited to short time span. Longer time span facilitates a player’s consistency measurement. It is evident that there is an absence of a method that considers both efficiency and consistency. Here, we employ a DEA model to compute efficiency. To capture the consistency of the players, we devise a consistency index based on the semi variance approach. Finally, we develop a single performance index integrating both the efficiency score and the consistency score. In this paper, an extensive numerical analysis is performed to validate the procedure by selecting all-time best one day international XI. This method is applicable to other formats of cricket like test cricket and twenty-twenty cricket. From a practitioner’s perspective, it can be useful for team selection at the national level or the club level and to assess the rank of cricketers in different player categories. This team selection method can be applied to any sports by choosing appropriate input and output parameters.

Keywords
Data envelopment analysis (DEA); Decision support systems, Statistics, Sports

Biography
Arnab Adhikari is currently a doctoral candidate of operations management area at Indian Institute of Management Calcutta. Prior to that, he worked in WIPRO Technologies for two years as a SAP consultant. He has done his engineering in Electronics and Communication engineering from National Institute of Technology, Durgapur, India. He is currently doing his thesis on designing coordination mechanism and risk hedging strategy for apparel supply chain. Apart from this, his research interests include innovative application of operations research techniques like DEA in real life problems, novel application of statistical tools and techniques in real life scenarios, transportation and logistics etc.

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