

**MODELLING RECORD-BREAKING ODI CRICKET BATTING
PERFORMANCES WITH EXTREME VALUE THEORY**

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This study aimed to explore the highest individual scores recorded in One Day International (ODI) cricket matches through extreme value theory which further uncovers an area that has not been extensively studied in previous research. Data for this study was downloaded from ESPNcricinfo, covering the period from 1971 to 2024. The dataset comprised the career highest scores of 1,171 cricket players across eight countries with 24 variables, including player names, country, matches played, highest scores, strike rates, and other relevant metrics. Preliminary analysis reveals that the highest individual score recorded is 264, while the lowest is 0, with an average highest score of 60.85. It was observed that top-order and opening batters tend to have the highest ODI scores compared to players in other positions. Additionally, a multiple linear regression analysis identifies factors such as the number of matches played, batting average, and the number of fours and sixes have a significant effect on achieving a higher score throughout the career of a player. Also, players with longer careers tend to have the highest individual scores. Furthermore, extreme value theory was used to model the career highest scores recorded by individual players. Among the widely known extreme value distributions, it was revealed that the Weibull distribution is the most appropriate extreme value distribution for modelling. The estimated Weibull distribution parameters (scale = 1.00, shape = 60.85) indicate that the career highest scores are distributed with a heavy tail with a broader spread out to cover a wide range of highest scores. Furthermore, Weibull distribution is fitted for each country, and it is found that the distribution of the career highest scores for players from England is significantly different from other countries. The findings of this study will be valuable for sports analysts and coaches in understanding and optimizing extreme batting performances in cricket.

Keywords: Cricket, Extreme value theory, Weibull distribution