PERFORMANCE OF EIGHT INDIAN BATSMEN IN THE TWENTY 20 MATCHES - A CLASSICAL SURVIVAL ANALYSIS AND COMPETING RISK APPROACH

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Abstract

The game of cricket is enjoyed by millions of fans across Globe. Twenty20 (T20) is the shortened game format of cricket. In T20, every team have a single innings each, which is restricted to a maximum of 20 overs. India is perusing the game like anything. Though, at present many local tournaments like IPL were conducted in India, the ability of the batsman and their pattern of scoring runs where reflected by the amount of runs they score in the T20's between Countries. When taking the event of interest for our study as Batsman "getting out" and censored as 'not getting out'. Different types of getting out like Runout, Bowled, Caught, Stumped and LBW may considered as Competing risks in Survival Analysis Approach.

Survival Analysis comes in handy in predicting the probabilities of such events. This study, in this perspective, considers the 8 batsmen in India Team. The study uses Classical survival models with Log-rank test for comparison. Kaplan-Meier's product limit estimator and Cox Proportional Hazard model were used to estimate the survival probabilities and their Hazard rates of getting out in a randomly selected game. Also, the study makes use of Accelerated Failure Time Parametric model to compare the relative performance of the selected batsmen. When considering Competing risks, the approaches Comparing Cumulative Incidence curves, significance of covariates by Cause Specific Hazard Model and Sub Distribution Hazard Model were used. The details of the performance of each Batsman, was taken from www.espncricinfo.com. Packages in R were used for this analysis.

Key Words: Survival Analysis; Kaplan-Meier's Estimate; Cox Proportional Hazard; Cause Specific Hazard and Sub Distribution Hazard.