An Application of Modified M-out-of-N Bootstrap Method to Heavy-Tailed Distributions

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Abstract : This study is an extension of a prior study on the modification of the existing m-out-of-n (moon) bootstrap method for heavy-tailed distributions in which modified m-out-of-n (mmoon) was proposed as an alternative method to the existing moon technique. In this study, both moon and mmoon techniques were applied to two real income datasets which followed Lognormal and Pareto distributions respectively with finite variances. The performances of these two techniques were compared using Standard Error (SE) and Root Mean Square Error (RMSE). The findings showed that mmoon outperformed moon bootstrap in terms of smaller SEs and RMSEs for all the sample sizes considered in the two datasets.