



The Empirical Edgeworth Expansion for a Studentized Trimmed Mean

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We establish the validity of the empirical Edgeworth expansion (EE) for a studentized trimmed mean, under the sole condition that the underlying distribution function of the observations satisfies a local smoothness condition near the two quantiles where the trimming occurs. A simple explicit formula for the $N^{-1/2}$ term (correcting for skewness and bias; N being the sample size) of the EE is given. In particular our result supplements previous work by P. Hall and A.R. Padmanabhan, On the bootstrap and the trimmed mean, J. of Multivariate Analysis, v. 41 (1992), pp. 132-153. and H. Putter and W.R. van Zwet, Empirical Edgeworth expansions for symmetric statistics, Ann. Statist., v. 26 (1998), pp. 1540-1569. The proof is based on a U-statistic type approximation and also uses a version of Bahadur's representation for sample quantiles.

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