

COMPARATIVE STUDY OF ROBUST ESTIMATORS OF LOCATION USING MAHALANOBIS DEPTH

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ABSTRACT

The sample mean is not a robust estimator of location and thus can produce misleading information when the data are not normally distributed. In this paper we studied three different robust estimators of location and compared their performance in providing better Mahalanobis depth with that of median (another robust measure) and mean. Comparing the performance of the five different estimators of location we have that M-estimator is more efficient than the other four methods in providing better depth for the significant test of equal population mean vectors when the data is free from outlier. In the presence of outlier median and trimmed mean seems to be better than the others. The whole five measures produced inconsistent result when the data are normally distributed.

KEYWORDS: Trimmed Mean, MCD Estimator, M-Estimator of Mean, Mahalanobis Depth, Kruskal-Wallis Test