

## Abstract

This is a theoretical study of the Least Absolute Deviations (LAD) fits. In the first part, fundamental mathematical properties of LAD fits are established. Computational aspects of LAD fits are shown and the Barrodale-Roberts Algorithm for finding LAD fits is presented. In the second part, the statistical properties of LAD estimator are discussed in the concept of linear regression. It is shown that LAD estimator is a maximum likelihood estimator if the error variables follow Laplace distribution. We state theorems establishing strong consistency and asymptotic normality of LAD estimator and we discuss the bias of LAD estimator. In the last section, we present the results of numerical experiments where we numerically showed consistency of LAD estimator, discussed its behaviour under different distributions of error variables with comparison to the Ordinary Least Squares (OLS) estimator. Lastly, we looked at the behaviour of LAD and OLS estimators in the presence of corrupted observations.