Abstract

In this study, we consider the parameter estimation of a half normal distribution having two parameter with mean μ and variance σ^2. Usually sample information is used to estimate unknown population parameter, but in our study we will use the non-sample information with the sample information to construct some improve estimators of the parameter σ^2 when μ assume to be known. These improve estimation strategies was linear shrinkage estimator, Preliminary test estimator and Shrinkage preliminary test estimator. A large sample test statistic based on the sample information is constructed to test the non-sample information that is $\sigma^2 = \sigma_0^2$ where σ_0^2 the value. Using the local alternative we will calculated the asymptotic bias and asymptotic mean square error of the estimators. A detailed simulation study was planned to compare the simulated relative efficiency of the estimator relative to unrestricted estimator in R. It has been observed that preliminary test estimator is performed better as compare to other estimators.