

ABSTRACT

It is a common process in statistical inference to assemble two or more estimates of a definite parameter for improved precision, when it is assumed that they are the identical. The purpose of this study is to address two such assembling problems.

The Estimation of the improved estimators of the Generalized Logistic Distribution is considered in the presence of uncertain prior information (not in the form of prior distribution) on the parameter of interest. We will focus on how to combine sample and non-sample information together in order to achieve improved estimation performance. Three classes of point estimators, namely, the Linear Shrinkage (LS), the shrinkage estimator and shrinkage preliminary test estimator (SPTE) are proposed. Their asymptotic biases and mean-squared errors will be derived and compared. The relative dominance picture of the estimators is presented. A large-scale simulation experiment is used to examine the large sample properties of the proposed estimators. Our simulation investigations have provided strong evidence that verify with asymptotic theory. The suggested estimation methods are applied to a published dataset to illustrate the performance of the estimators in a real-life situation.

We compare the performance of these procedures through an extensive numerical simulation. We have compared the performance of these estimators by computing their asymptotic distributional quadratic risk under the sequence of local alternatives.