ABOUT EXTREME RANKED SET SAMPLES WITH APPLICATION
TO THE ESTIMATION OF DISTRIBUTION FUNCTIONS AND
PERCENTILES

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ABSTRACT

We studied the relationship between the extreme ranked set sample (ERSSs) and median ranked set sample (MRSS) with simple random sample (SRS). For a random variable say $X$, we showed that, the distribution function estimator, using ERSSs and MRSS are more efficient than using SRS, for some value of $x$. We showed that using ERSSs and MRSS can substantially reduce the necessary sample size by a factor of 1 to 4 when we estimate the median of the distribution. Asymptotic results, for the estimation of the distribution and quantiles are given, for ($p=0.5$). Real data example about the bilirubin level of baby's staying in neonatal intensive care is used to illustrate the method.