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ESTIMATION OF DISTRIBUTION FUNCTION UNDER MULTISTAGE MEDIAN RANKED SET SAMPLING

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SUMMARY

As a modification of ranked set sampling (RSS), multistage median RSS (MMRSS), is used for distribution function estimation. The performance of the empirical distribution function obtained by MMRSS is examined in terms of relative efficiency. The effect of the set size, number of cycles, and number of stages of MMRSS on the performance of the proposed estimator is addressed. Generally speaking, the empirical distribution function when using MMRSS is more efficient than when using simple random sampling for some quantiles. The comparison is carried out theoretically and numerically.

Keywords and phrases: Distribution function estimation, efficiency, ranked set sampling, Simple random sampling.

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