



ON THE ESTIMATION OF COEFFICIENT OF VARIATION IN PPS SAMPLING

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Abstract

This paper addresses the estimation of Coefficient of Variation in a finite population when the samples are selected using PPSWR scheme. Two estimators are proposed and the mean square errors of these estimators are derived to the order of $O(n^{-1})$. In many situations, applied researchers use an estimator based on SRS scheme for the estimation of the parameter when the samples are selected using any other design. 23 estimators of C.V derived under SRS scheme are proposed as estimators of C.V under PPS scheme. Extensive simulation indicates that regression estimator using population variance of the auxiliary variable emerges as the best estimator. Sample C.V also emerges as one of the best estimator and outperforms the estimators exclusively derived under PPS scheme. Many estimators proposed under SRS scheme are efficient estimators of C.V under PPS scheme. This finding gives a theoretical justification for the common practice among the applied researchers regarding the estimation of C.V.

Key words : Coefficient of variation, PPSWR sampling, Relative efficiency, Model-based comparison.