

Estimation of Population Mean using Known Median of the Study Variable

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ABSTRACT

This present paper concerns with the estimation of population mean of the study variable by utilizing the known median of the study variable. A generalized ratio type estimator has been proposed for this purpose. The expressions for the bias and mean squared error of the proposed estimator have been derived up to the first order of approximation. The optimum value of the characterizing scalar has also been obtained. The minimum value of the proposed estimator for this optimum value of the characterizing scalar is obtained. A theoretical efficiency comparison of the proposed estimator has been made with the mean per unit estimator, usual ratio estimator of Cochran (1940), usual regression estimator of Watson (1937), Bahl and Tuteja (1991), Kadilar (2016) and Subramani (2016) estimators. Through the numerical study, the theoretical findings are validated and it has been found that proposed estimate or performs better than the existing estimators.

KEYWORDS: Study variable, Bias, Ratio estimator, Mean squared error, Simple random sampling