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Modified Regression Type Estimators in the Presence of Non-Response

It is a common experience in sample survey that data cannot always be collected for all units selected in the sample at the first attempt and even after some call-backs. An estimate obtained from such incomplete data may be misleading because of the non-response in the data. In addition, the population mean of the auxiliary variable from the previous census may not be available. In this paper, Modified regression type estimators proposed by Tum et al. (2014) in single phase sampling, assuming complete response, have been proposed to estimate the population mean of the study variable in the presence of non-response under two phase sampling scheme. The expression of mean squared errors (MSE) based on the proposed estimators have been derived under two phase sampling to the first degree of approximation. A comparison of the proposed estimators with the usual unbiased estimator and existing estimators under two phase sampling scheme have been carried out. The proposed Modified regression type estimators have been found to be the most efficient compared to the existing estimators and they are recommended for use in practice.

Keywords

Modified regression type estimators, Study variable, Auxiliary variables, Mean Square Error, Non-response.

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