

## ABSTRACT

Randomized response technique is a research method used in structure survey interview. Randomized response decrease the impact of social desirability bias in assessing attitudes in a collective group. We proposed a generalized two stage optional randomized response model. Privacy protection of the model has also been checked. A class of generalized exponential ratio type estimator using single and two auxiliary variable based on two stage optional randomized response technique are suggested to improve the efficiency mean estimator. The expressions for the mean square error (MSE) and bias, up to first-order approximation, have been obtained. The conditions are derived under which the suggested class of estimators perform better than some existing estimators. Another class of generalized ratio type estimator based on Gupta et al. (2014) optional randomized response technique is proposed. Bias and mean square error up to second order approximation are derived. We also develop a class of generalized ratio type estimator in two phase sampling based on Gupta et al. (2014) ORRT and derived the expression of bias and mean square error up to second order approximation . Simulation Study is carried out to assess the performance of our suggested estimators and it is concluded that our suggested estimator are more efficient than the existing estimator based on randomized response technique.