

A Dexterous Optional Randomized Response Model

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Abstract

This article addresses the problem of estimating the proportion π_S of the population belonging to a sensitive group using optional randomized response technique in stratified sampling based on Mangat model that has proportional and Neyman allocation and larger gain in efficiency. Numerically, it is found that the suggested model is more efficient than Kim and Warde stratified randomized response model and Mangat model.

Keywords

randomized response technique, estimation of proportion, stratified random sampling, sensitive attribute, bias, mean squared error

Introduction

One of the important things for obtaining data pertaining to human population is the social survey. To measure opinions, attitudes, and behaviors that cover a wide band of interests, the social survey has been established as being

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