

Estimation in randomized response models

Sat Gupta¹, Pedro Corte Real², Javid Shabbir³,
and Rita Sousa²

¹*University of North Carolina at Greensboro, USA*

²*New University of Lisbon, Portugal*

³*Quad-I-Azam University, Pakistan*

Abstract

Randomized response models are a powerful data collection tool in social sciences. Since the original work of Warner (1965), many types of RRT models have been introduced in the literature. We take a look at several such models and introduce a new family of RRT models. Mean square error of the proposed model is compared with that of the basic RRT model using both a first order approximation and a second order approximation. We also present an extensive simulation study to further reflect on this comparison. It is observed that the MSEs based on first and second order approximations can be quite different for small sample size.