

Survey Nonresponse Adjustments in the Application of Methods for the Treatment of Sensitive Questions

Leonardo Trujillo*

Luz Mery Gonzalez

National University of Colombia, Bogota, Colombia, ltruji00@unal.edu.co

Randomized response and item count techniques have originally been designed as statistical methods to reduce nonresponse as well as not reliable answers from the respondents. However, understanding how these methods work by the respondents could be a very difficult task and still sometimes it is possible to obtain a big proportion of people refusing to collaborate in the fear of the protection of their confidentiality. In a particular survey, the elements in the sample are exposed to a specific set of survey operations. In the case of randomized response techniques, an additional stage of introducing the methods to both interviewers and respondents and convincing them how the confidentiality of the former is protected is necessary. In this paper, a simple but powerful method is formulated in order to describe the unknown response mechanism for the sample as accurately as possible. This corresponds to the very well-known response homogeneity group. However, as far as the authors know these models have not been applied to randomized response techniques. Data are assumed as missing at random within sample subgroups, conditionally on the sample. This is a substantial improvement on assuming that data are missing at random throughout the population. At the end, a simulation study shows the effects of ignoring the nonresponse on the bias and the variance of the estimators obtained under the application of these techniques and in particular to the seminal Warner randomized response model and some item count techniques available in the literature.

Key Words: Item Count Techniques, Model Based Inference, Randomized Response Techniques, Survey Sampling.