ANALYSIS OF RESPONSE REPRESENTATIVENESS IN CASE OF ADAPTIVE SURVEY DESIGN

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Abstract

In practice, researchers still focus mainly on reducing survey non-response through data collection, thus sometimes sacrificing representative response. To achieve representativeness, balancing of response levels across different groups of respondents has major importance. If the sample is not representative, the estimates of the variables of interest may deviate significantly from the population values, even those having high response rates. To address this issue, Schouten, Cobben, and Bethlehem (2009) introduced Representativeness Indicators (R-indicators). Representativeness is measured by degree of difference between respondents and non-respondents based on response propensities. Logistic regression model is a typical tool used to estimate response propensities. Consequently, R-indicators used in adaptive data collection to ensure representativeness of a sample can additionally help in non-response adjustment through weighting procedures aimed at reducing non-response bias by considering individual response propensities.

This study was conducted at the Central Statistical Bureau of Latvia and is focused on analyzing data from the Adult Education Survey 2022 (AES). The AES is aimed at gathering internationally comparable data on adult participation in lifelong learning activities – formal education, non-formal education and training, and informal learning. During AES data collection, an adaptive survey design (ASD) was implemented to improve response rates among underrepresented groups. The collected response datasets were fixed on assigned dates – before and after the adaptive design was implemented, assuming the fieldwork was over. It allows us to review possible results and examinate changes in R-indicators and partial R-indicators as well as changes in estimators used for target variables. We will assess ASD effectiveness by estimating accuracy of variable estimates and considering details of the weighting procedures at different stages of data collection. Target variables were estimated by using multiple weights with non-response correction, including homogeneity groups correction and calculations dependents on individual response propensities. The results were compared based on calculation of the variable of interest and precision estimates. The research was aimed at analyzing effects of adaptive design, testing different weighting schemes, evaluation of estimate quality and results produced. The goal of the study is to improve weighting and data collection process in the AES.

Keywords: non-response analysis; adaptive design; R-indicators; response propensity; weighting.

References

Schouten B., Cobben F., and Bethlehem J. (2009). Indicators for the representativeness of survey response. *Survey Methodology*, 35(1), 101-113.