

Calibration versus other reweighting methods in surveys

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Reweighting of survey data of the respondents is required for several reasons, especially due to problems in frame coverage and frame data quality on one hand, and due to selective unit non-response, on the other. Over years, a number of methods have been proposed and used. The appropriate methodology requires necessarily auxiliary data. Two types of auxiliary data are basically available, macro vs micro. Macro auxiliary data are in most cases consisting of known population totals of different kinds of aggregates such as concerning gender, age groups, region, education levels or industries. Respectively, micro auxiliary variables can be from the same variables in addition to many others, but they are available for gross sample individuals. The latter ones are often downloaded from registers or other administrative sources or they can be collected during the fieldwork by interviewers as well. The macro variables, at contrary, are derived from most recent statistics or other statistical sources. Moreover, both types of auxiliary variables can be used at the same time in post-survey adjustments, and this strategy is even recommended by me. Nevertheless, such a double strategy is not a typical case. It seems that the most common strategy in reweighting is calibration, since 1990's, in particular. New powerful and intelligent calibration methods are naturally developed during these 20 years, but their principles are still similar. Calibration as the only strategy is understandable if micro auxiliary variables are not available as it is the situation in many countries. Respective methods are still used much in such countries where good both macro and micro auxiliary variables do exist. It is surprising to some extent. This paper examines both reweighting strategies and compares calibration against such methodology that exploits response propensity modeling first, and continues then with rather 'basic' calibration. This calibration takes advantage of stratification macro auxiliary variables that are most commonly available and being of high quality. Unfortunately, the possibility to find good macro auxiliary variables is limited and hence calibration methodology is not any excellent alternative in many cases.

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