ELABORATED EVALUATION OF MODE EFFECTS IN MIXED MODE DATA

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Jorre Vannieuwenhuyze
jorre.vannieuwenhuyze@soc.kuleuven.be
Tel.: +32 16 323144

Geert Loosveldt
geert.loosveldt@soc.kuleuven.be
Tel.: +32 16 323154

Centre for Sociological Research (CeSO), Faculty of Social Sciences,
University of Leuven (K.U.Leuven)
Parkstraat 45 bus 3600 - 3000 Leuven

Increasingly, survey data are gathered from different sample members by different modes. Such a Mixed-Mode (MM) design can help reduce coverage error, nonresponse and nonresponse bias, and costs. However, by simultaneously generating nonresponse error (selection effects) and measurement error (measurement effects), mode effects can make MM data highly unusable.

Selection effects occur when different types of respondents choose different modes to complete the survey. Because of selection effects, MM surveys attract different and probably more respondents who might not participate in a single mode survey. Measurement effects refer to the influence of the survey mode on the answers respondents give, which might be different in different modes because of differences in measurement errors accompanying the specific modes.

The major problem of MM designs is that selection effects and measurement effects are inextricably bounded. Differences (or similarities) between the outcomes of the different modes may be caused either by differences between the respondents or by differences in measurement error. Exclusive focus on MM survey data precludes separate evaluation of selection effects and measurement effects. However, this problem is avoided by an extension of MM data with data from a comparable single-mode survey. Using a Bayesian analysis framework with simulation techniques, we develop a technique to measure and draw inferences from the different mode effects.

This technique is illustrated with data from a MM experiment within the European Social Survey (ESS) program, which is a biennial survey conducted in 30 European countries. In order to encourage

equivalence across countries, all ESS surveys have so far been carried out by face-to-face (FTF) personal interviews in all countries . However, in the Netherlands, a Mixed-Mode (MM) experiment was set up parallel to the 4th round (2008/2009). In contrast to the main ESS survey, sample members of the MM experiment could choose between three survey modes to complete the survey: a web questionnaire (CAWI), a telephonic interview (CATI), or a face-to-face personal interview at home (CAPI).

This study analyzes selection effects and measurement effects for three variables: political interest, perceived political complexity and voter turnout. These variables are argued to be extremely sensitive to measurement error caused by social desirability in the presence of an interviewer. Comparing the main ESS data with the MM experiment data will allow us to evaluate measurement effects on these variables between a CAPI survey and a combination of CAWI and CATI. Analogously, selection effects between respondents choosing CAPI and respondents choosing CAWI or CATI in the MM experiment can be measured.

We suggest two points for discussion. First, comparing the MM dataset with the single-mode main ESS dataset to evaluate mode effects implicitly assumes both datasets to be comparable but this comparability can be questioned. Consequently, the mode effects estimates are probably biased. However, the literature suggests to evaluate mode effects by matching respondents of different modes using 'mode-insensitive' variables (e.g. gender, age,…). Consequently, response differences between matched respondents should be caused by measurement effects. However, this approach assumes that the 'mode-insensitive' matching variables are closely related to the mode choice. This raises the question which assumption is the most stringent: the comparability assumption or the matching assumption?

Second, as a general conclusion, we suggest that future MM surveys should include a (small) comparative single-mode group, which can be used to disentangle selection effects and measurement effects by the technique developed.