

# JPSM/MPSM

## Survey Methodology Seminar Series

### “Estimating survey errors of mixed-mode designs using survey-based benchmarks”

THOMAS KLAUSCH

Presenter

Post-doc at the Department of Methodology and Statistics at Utrecht University

**Monday, March 9, 2015**

**4:00-5:00pm**

Speaker will be at the University of Michigan  
Video Room 368 - ISR South Basement  
Room 1208 LeFrak Hall– Maryland

#### **Abstract**

We evaluated three types of bias – total, measurement, and selection – in three sequential mixed-mode designs of the Crime Victimization Survey (CVS): telephone, mail, and web, where nonrespondents were followed up face-to-face. In the absence of true scores, all biases were estimated against two different types of benchmarks. For the ‘single-mode benchmark’ (SMB), biases were evaluated against a face-to-face reference survey assuming both measurements and selection mechanism of this mode are optimal. In an alternative analysis, a ‘hybrid-mode benchmark’ (HMB) was used, where biases were evaluated against a mix of the measurements of a web survey and the selection bias of the face-to-face survey. The HMB is useful if the measurement of web but not the web selection mechanism is deemed optimal. We conducted a split-ballot experiment with the three mixed-mode designs (approx. n=1600 respectively) and a face-to-face benchmark survey (n=1639). In addition, we followed up the respondents in the first part of the sequential designs by face-to-face yielding a second observation on these units. We demonstrate how this data is used to multiply impute the potential answers that respondents in the mixed-mode surveys would have given under the face-to-face or web measurement benchmark modes. This information subsequently allows estimating all biases against the SMB and HMB. In the empirical part of our study, a range of 30 survey variables from the CVS was evaluated. We found that the best strategy for the CVS strongly depended on choice of the measurement but not the selection benchmark. The web and mail (but not telephone) mixed-mode strategies caused a strong total bias against face-to-face (SMB) primarily due to a measurement bias. The face-to-face follow-up could mitigate this bias to some extent but could not nullify it. Using the web/face-to-face HMB, the reverse was true: the telephone strategy showed strong measurement bias, whereas web and mail response samples did not. However, the F2F follow-up to web or mail increased the measurement bias against the HMB suggesting avoiding such a follow up to web or mail if the HMB is deemed optimal..