

## Title: Investigating Mode Effects on Interviewer Variance

### Abstract:

As mixed-mode designs become increasingly popular, their effects on data quality have attracted much scholarly attention. Most studies focused on the bias properties of mixed-mode designs; however, few of them have investigated whether mixed-mode designs have heterogeneous variance structures across modes. While many factors can contribute to the interviewer variance component, this study investigates whether interviewer variances are equal across modes in mixed-mode studies. We use data collected with two designs to answer the research question. In the first design, when interviewers are responsible for either face-to-face or telephone mode, we examine whether there are mode differences in interviewer variance for 1) sensitive political questions, 2) international attitudes, 3) and item missing indicators, using the Arab Barometer wave Jordan data with a randomized mixed-mode design. In the second design, we draw on Health and Retirement Study (HRS) 2016 core survey data to examine the question on three topics when interviewers are responsible for both modes. The topics cover 1) the CESD depression scale, 2) interviewer observations, and 3) the physical activity scale. To account for the lack of interpenetrated designs in both data sources, we include respondent-level covariates in our models to control for interviewer selection effects.

We find significant differences in interviewer variances on one item (twelve items in total) in the Arab Barometer study; whereas for HRS, the results are four out of eighteen. Overall, we find the magnitude of the interviewer variances larger in FTF than TEL on sensitive items.