

Estimating Mode Effects in Panel Surveys: A Multitrait Multimethod Approach

Martin Kroh, Anna Karmann, Simon Kühne

Bielefeld University

Keywords: panel surveys, mode effects, measurement error, multi-trait-multi-method

An increasing number of longitudinal studies worldwide cover societal change over decades. Fieldwork of these panel surveys experienced notable technological advancements and often switched modes of data collection over time. A large body of literature documents that the mode of data collection matters for respondent behavior, however, empirical evidence of mode effects on estimates of reliability and validity is surprisingly scarce. The paper proposes to adapt the experimental Multitrait Multimethod (MTMM) approach to observational data. For this purpose, we use the longitudinal data from the German Socio-Economic Panel (SOEP), an annual panel study started in 1984 with interviewer-administered paper and pencil interviews and nowadays additionally using computer assisted personal interviewing as well as self-administered questionnaires, both mailed and web-based. While mode changes in the SOEP are not randomly assigned to respondents, we augment our approach by propensity score weighting to reduce selection bias in estimates of mode effects. Our analysis suggests moderate but statistically significant differences in reliability and validity estimates between modes of data collection. Generally, method effects are more prevalent in interviewer-administered compared to self-administered survey data.