

# Data Collection in Panel Surveys

## Editorial

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During the course of the last decades, panel surveys have gained an increasing importance in the social science infrastructure worldwide and the number of panel studies has risen accordingly, with new panel studies popping up constantly.

The German Data Forum (Rat für Sozial- und Wirtschaftsdaten) has recently identified 77 longitudinal surveys in Germany in the area of social science and economic research, the majority of them panel surveys (Rat für Sozial- und Wirtschaftsdaten forthcoming).

The current success of panel studies is due to at least two specific advantages of this kind of data when compared to cross sectional surveys:

- A. The ability to follow individual change across time: The possibility of identifying individual trajectories over the life course is very helpful in many research areas like education, poverty, labour market or public health.
- B. The potential for a more rigorous causal argumentation: Unobserved heterogeneity between units of observation is a major threat to causal inference. In panel studies this can be excluded by using within-unit-estimators like fixed-effects estimators which reduce the problem to unobserved heterogeneity within units of observation. In particular, all kinds of treatment evaluation require measurements before the treatment, especially if the treatment is not or cannot be randomized.

However, panel surveys are complex endeavours and in addition to the many error sources known in cross sectional surveys, additional problems arise.

In Germany, the German Data Forum as well as the German National Academy of Sciences (Leopoldina) have just discussed the significance and the challenges of panel surveys and published recommendations (Nationale Akademie der Wissenschaften Leopoldina 2016, Rat für Sozial- und Wirtschaftsdaten forthcoming).

The German Data Forum's recommendations specifically address the requirement of more and more systematic survey methodological research on the growing

number of longitudinal surveys while the Leopoldina recommendations emphasize the need for a better methodological qualification of students and early career researchers.

On an international scope, the Panel Survey Methods Workshop series has been initiated and biannual workshops have been held since 2008 with the goal of discussing methodological issues that are specific to panel surveys. Again, on the German national level, a similar workshop series has been started in 2009 and has resulted in 10 meetings with an ever growing number of participants since then.

Thus, panel specific methodological research is currently on a rising trend, but more of this is certainly needed due to the burgeoning number of panel studies. Therefore, this special issue on data collection in panel surveys intends to foster this trend by bundling panel methods research papers. The contributions in this issue reflect the broad range of methodological questions that are unique to panel surveys.

Panel attrition – the dropout of former panel members in later waves – is a specific form of nonresponse that can be considered extremely costly. Not only does it threaten to bias results if dropout is non-random. Cases that attrite in wave 2 of a panel can never be used for longitudinal analyses although already considerable costs have been invested in these cases up to this point. Moreover, statistical power decreases continuously as more and more cases from the original sample drop out. Consequently, panel attrition is a major topic in this special issue.

One widely applied instrument to minimize attrition is financial incentives. Different incentives can easily be assigned randomly to respondents. Thus, many studies have been devoted to the effect of incentives. Kretschmer and Müller continue this tradition. They experimentally investigate the effect of switching from promised to prepaid incentives during the course of a panel study. Their outcome is not only the attrition rate, but sample composition and fieldwork effort as well.

A different answer to attrition might be adaptive or responsive fieldwork designs that allow to target respondents at risk of attriting before they attrite and pay them extra attention. Plewis, Calderwood and Mostafa investigate in how far interviewer observations of the interview situation (like whether the respondent enjoyed the interview) might be a useful tool to inform such designs in helping the researcher to detect potential dropouts. Furthermore the potential of these observations in nonresponse correction via imputation or weighting is discussed.

All surveys require a dual inference: From the participants who answer to a certain survey question to the target population of the study (representation) and from the answer to a survey question to a latent or manifest trait of the respondent (measurement).

While the studies on attrition focus on the representation side of panel surveys, the paper by Brüderl, Castiglioni, Ludwig, Pforr and Schmiedeberg focuses on a specific kind of measurement error that is unique to panel surveys: The seam effect

that results from inconsistent reporting of events or states at the seam of consecutive waves. The authors demonstrate experimentally how dependent interviewing integrated into an Event History Calendar can be applied to reduce this effect.

Lipps and Lutz in their paper investigate gender of interviewer effects on survey measurement. While this is not a problem specific to panel surveys, panel surveys allow identification of such effects because the same respondent is interviewed repeatedly by different interviewers. This is specifically the case in CATI panel surveys where respondents are distributed quasi randomly across telephone interviewers. Exploiting only within respondent differences the alternative explanation that different interviewers recruit different types of respondents can be ruled out.

The paper by Pfeffer and Griffin is a similar case. They exploit fluctuation in survey reports of net worth of households and investigate to what extent these fluctuations are explained on the one hand by variables measuring socio-economic or demographic changes (hinting at true change in net worth) and to what extent they are explained on the other hand by change of respondents and number of imputed wealth components (hinting at methodological artefacts).

Of course, the papers in this special issue do not address every methodological topic that is relevant to panel surveys. Panel conditioning, the tendency that respondents who have answered repeatedly to certain survey questions show different answer behaviour than first time respondents, is one of the major topics not represented in this special issue. Other interesting topics might have comprised longitudinal weighting, mixing modes in longitudinal surveys, using new media to enhance data collection and panel maintenance and tracking or linking panel surveys to register data or other data sources that enable validation and offer information on attritors. However, we hope that the collection of papers bundled in this special issue makes panel survey research more visible and thereby will spur further research on the methodological foundations of panel surveys.

We thank all the authors and reviewers of this special issue for their commitment and their valuable contributions to this issue.

## References

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