

## Missing Data

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Missing data present a ubiquitous problem in all branches of survey research. Missing data represent the reduction of the information from what was planned to have been collected to the recorded data. There is no large-scale survey of a human population in which a well-specified (probability-based) sampling design is used and the rate of nonresponse is negligible. Although commonly practiced because of its simplicity, methods that reduce the recorded data to complete records are now widely understood to be grossly deficient because they correspond to the unrealistic assumption of ignorable nonresponse and often involve further data reduction and wasteful use of valuable information. Methods based on data completion, in which a value is substituted for each missing item, are less wasteful, but entail other problems, such as the false pretense that the analysis is based on more data than was in fact collected. In brief, the target of the presented analysis should be inference about an a priori specified population, not about a population that is, or happens to be, well represented by the available dataset.

The session will present case studies and papers based on other material related to methods which address these problems with integrity and seek efficient use of all the available information, together with unbiased (honest) assessment of the precision of the derived estimators. There is scope for presentations with non-standard applications of missing-data methods, in which some other information is declared as missing, even if it was never contemplated to be collected. These include dealing with measurement error, coarsened values (a generalisation of rounding), small departures from a balanced design (relevant in longitudinal analysis), causal analysis based on the potential-outcomes framework and fitting models that are too complex for the analyst's available capacity.

Papers that address the issue of non-ignorable nonresponse and which study the sensitivity of the results based on untestable assumptions related to the response process are particularly welcome. Papers addressing the issue of design of surveys in which nonresponse is anticipated also belong to this session, especially if they discuss collection of data with the purpose of improving, informing or simplifying the part of the analysis that addresses the issue of nonresponse.