Roger Tourangeau, Frederick Conrad, Mick Couper (2014):
The Science of Web Surveys
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The Science of Web Surveys by Tourangeau, Conrad, and Couper is a summary of state-of-the-art methodological research on surveys using the web mode of data collection. It mainly addresses academic researchers, but the book can also be recommended for survey practitioners conducting web surveys. Unlike other publications in the area of web surveys (e.g. Callegaro et al. 2014, or Couper 2008), it has a relatively broad research scope.

Generally, the book is structured following a Total Survey Error perspective. However, although there are two chapters on errors of nonobservation (chapter two on sampling and coverage error and chapter three on nonresponse error), its main focus is on errors of observation. Therefore, this book can especially be recommended for researchers interested in measurement error in web surveys. For survey practitioners, it offers useful advice on visual design aspects and interactive features.

All chapters provide a rich collection, review, and comparison of recent studies found in the literature about web surveys. Studies of the same problem are displayed and compared in tables. This is helpful to gain an overview of key findings.

In the introductory chapter of their book, the authors discuss the evolution as well as general advantages and disadvantages of web surveys. They briefly explain the Total Survey Error logic and state the structure and intended audience of the book.

Chapters two and three are dedicated to the discussion of errors of nonobservation in web surveys. In chapter two, the authors schematically depict different types of web surveys. On the basis of this typology, they discuss the lack of a commonly shared sampling method for web surveys, the statistical consequences of nonprobability sampling, and the challenge of the "digital divide" of individuals with and without Internet access. At the end of the chapter, there is a short introduction to and comparison of commonly applied weighting procedures.

In chapter three, the authors provide definitions on nonresponse error as well as nonresponse rates. They then discuss the effect of well-established design features that affect web survey participation, such as prenotification letters and incentives.

In this chapter, they also discuss some special web survey issues, for example, mixed-mode design and survey break-offs. The distinction between probability-based and nonprobability surveys plays an important role throughout the chapter. In this context, the authors criticize the tendency of some survey data users to care more about the amount of data than its quality (p. 43).

The fourth chapter introduces the section on errors of observation, which expands over the rest of the book. This chapter is a primer on basic web survey design features, for example, the web page layout. The authors describe visual possibilities of web surveys, such as multimedia presentations and interactive features. They also point out that researchers need to be careful when using technological advances in order to reduce and not enhance measurement error (p. 59-61). For instance, researchers should be aware of respondents who have not installed JavaScript on their computers and therefore cannot see certain kinds of survey design features.

In chapter five on the web as a visual medium, common measurement issues with regard to visual presentation in web surveys are discussed, such as response scale interpretations and the impact of images in the questionnaire. The authors highlight differences between the web and other modes of data collection with regard to response behavior, for example, how having to use a cursor influences response distributions. They argue that the web, more than other modes, depends on "visibility," that is the degree to which visible features of a web page are noticed by respondents (p. 93). Among other findings, the authors present results from eye-tracking studies which show that in a vertical list of response options the time and number of respondent fixations on a row of text decreases from top to bottom (p. 96).

Chapter six is about the interactive possibilities inherent to web surveys. Examples include progress bars to show the proportion of answered and yet to be answered questions, interventions to stop respondents from "speeding" through the questionnaire, and even more elaborate and creative features such as animated interviewer faces (p. 122-126).

Chapter seven contains a meta-analysis comparing web surveys to alternative data collection modes with regard to the amount of measurement error found. One of the key findings is that measurement error due to socially desirable responding is lowest in web surveys, especially when compared to interviewer-administered surveys (p. 142). Based on these results, the authors reflect on the effect of virtual interviewers in web surveys on potential measurement error. They conclude that the more "lifelike" these interviewers are, the more they induce social desirability bias (p. 145).

In the final chapter of the book, there is a summary of findings from the previous chapters, as well as a brief list of practical recommendations for web survey practitioners. The chapter also contains a mathematical model for survey mode effects. This comes rather unexpectedly, mainly because the application of multiple modes

is not discussed in great detail in the previous chapters. Nevertheless, the proposed model is a comprehensible formalization that is helpful for assessing the consequences of a multimodal survey design.

In conclusion, *The Science of Web Surveys* is an excellent review of state-of-the-art research in the area of web survey data collection. It provides comprehensive literature discussions, especially with regard to measurement error. This book informs readers about advances in understanding web survey phenomena. Additionally, it serves as a guideline to effective web survey design. The book is compact, comprehensible, and I can highly recommend it.

Literature

Callegaro, M., Baker, Reg. P.,Bethlehem, J., Göritz, A. S., Krosnick, J. A., Lavrakas P. J. (2014): *Online panel research. A data quality perspective.* Chichester: Wiley (Wiley series in survey methodology).

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