



Book and Software Review

Silvia Biffignardi & Jelke Bethlehem (2021). Handbook of Web Surveys, Wiley

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Abstract

The new-book *Handbook of Web Surveys*, 2nd edition, was released on June 2021 by Wiley. Revised and thoroughly updated, this handbook by *Silvia Biffignardi* and *Jelke Bethlehem* offers a practical and comprehensive guide for creating and conducting effective web surveys. The authors provide information on the most recent developments and techniques in the field. The book illustrates the steps needed to develop effective web surveys and explains how the survey process should be carried out. It also examines the aspects of sampling and presents several sampling designs. The book includes ideas for overcoming possible errors in measurement and nonresponse. The authors also compare the various methods of data collection. Critical information for designing questionnaires for mobile devices is also provided. Filled with real-world examples, *Handbook of Web Surveys* discuss the key concepts, methods, and techniques of effective web surveys. Suitable for a wide audience, the book is a useful manual for all those who wish to approach web surveys both from a theoretical and practical point of view, in the academic, official statistics or in business world.

Keywords: coverage error, adaptive design, self-selection bias, weighting adjustment techniques.

Modern society can be defined as a web society, in which technology assumes an ever greater and predominant importance, especially in the life of young adults who have always grown up with a strong technological support.

Surveys are part of the constantly evolving cultural and technological context of society and for this reason survey methodology is subject to change over time. Despite this, there are cornerstones of good data quality that must always be maintained, such as (i) good coverage of the target population, (ii) probabilistic sampling, (iii) low no-response error, (iv) accurate measurements, and (v) cost efficiency.

Web and mobile surveys allow respondents to complete questionnaires that are delivered to them and administered over the World Wide Web. Internet as data collection method offers more advantages, such as the potential for using complex questionnaires and visual and auditory incentives, the quick turnaround, and lower costs compared with other survey methods. Nevertheless, other problems arise, especially regarding the quality of data collection and its cornerstones recalled in the previous paragraph. In particular, coverage error and nonresponse error are the biggest threats to inference from Internet surveys.

The second edition of "Handbook of web surveys" by Silvia Biffignardi and Jelke Bethlehem aims to present a theoretical and practical approach to conducting and creating web surveys, combining

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design and sampling issues. This can be considered both as a reference book for those who are starting to implement web surveys, and a book suitable for those who already work in the field of online surveys but want to explore newer aspects. It is suitable for students, academics and professionals in government, business, economic and social sciences organisations, as it best reflects an intersection of theoretical and practical approaches. It mainly helps treat problems on web surveys in contrast with traditional methods of data collection.

From the history of web surveys to the various ways of collecting data, to tips for detecting errors, this book introduces readers in depth to this ever-growing methodology and offers practical tips for creating successful web surveys.

The second edition of the book involves a revision of each chapter of the first edition considering the following criteria: (i) introduction of new literature and the most relevant results of recent years, and (ii) introductions of numerous examples and case studies to allow a practical study of the phenomenon, and revision of the examples present in the first edition. Updates have also been included to highlight new trends in mobile and web surveys and emerging solutions. A specific focus on mobile web surveys characterizes this edition. Two new chapters have also been introduced, one presenting a flowchart to show the steps needed to run a survey via web, and the other studying adaptive design.

The content of the book is smartly organized into twelve distinct chapters. Chapters can be addressed one after the other for beginners, while they can be seen as independent readings for the more experienced.

Chapter 1 “The road to web surveys” and Chapter 2 “About web surveys” provide an introduction into web surveys. Specifically, Chapter 1 faces the development of web surveys from a historical point of view, and examines the Blaise system and its development, going to fill a gap in the literature which was missing so far. Chapter 2 offers a basic overview of web surveys and their possible fields of use.

Chapter 3 titled “A framework for steps and errors in web surveys” reports one of the main differences with respect of the first edition. It presents a flowchart illustrating the steps and the sub-steps needed in the construction of web-surveys, explaining these steps in detail. The chapter discusses and analyses all the errors that can occur in a web survey, also placing them in the steps of the framework.

Chapter 4 “Sampling for web surveys” focuses on sampling. It underlines the need for valid probabilistic sampling to make inference and introduces the sampling frames necessary for this purpose. A number of sampling designs and estimation procedures which could be used in web surveys are discussed in order to guide the reader to the right choice considering its case study.

Chapter 5 titled “Errors in web surveys” provides a deep overview of possible errors, with great attention to errors in measurement, and their possible relations with questionnaire design. Moreover, it focuses on nonresponse errors, that can affect all the types of surveys but need particular attention in the online ones.

Chapter 6 “Web surveys and other modes of data collections” introduces other possible data collection methods, such as CAPI, CAWI, CATI, and their combination. After that, this chapter compares these methods with online data collection methods, considering advantages and disadvantages of each one.

Chapter 7 “Designing a Web Survey Questionnaire” discusses questionnaire design issues. Adaptations needed when a questionnaire is to be administered via web or mobile are taken into account.

Chapter 8 “Adaptive and Responsive Design” is written by Annamaria Bianchi and Barry Schouten. It studies methods for data collection with adaptive design when strategies are not defined in advance but must be adapted during fieldwork.

Society and technology change constantly. Efficient data collection methods must adapt to these changes, and it is not always certain that web surveys are the most appropriate solution. Mixed mode surveys with an online component included offer many advantages, but also challenges. One of the challenges is the use of mixed devices (smartphone, tablet) to complete an online questionnaire. Chapter 9 “Mixed-mode Surveys” aims to address these issues.

Chapter 10 focusses on “The Problem of Under-coverage”. Under-coverage is a problem of primary concern as it is closely linked to inequalities. In fact, in many countries the internet connection is not uniformly distributed over the territory, or accessible to the entire population in relation to income and their residence. Furthermore, the age factor must be considered, since there are still many elderly people who, not having familiarity with technology, risk not being represented by the web surveys. The chapter shows how under-coverage can lead to bias estimates and discuss several bias adjustment techniques.

“The Problem of Self-Selection” is addressed in Chapter 11. Many web surveys implemented to date do not use probabilistic sampling but are based on a self-selection mechanism. The problems that this mechanism can introduce in estimation are addressed in this chapter, which also focuses on showing how corrective methods are not always effective and how web surveys often turn out to be biased.

Chapter 12 “Weighting Adjustment Techniques” addresses several weighting techniques, such as post-stratification, ranking ratio estimation and generalised regression estimation. In addition, these techniques are explored based on their abilities to reduce under-coverage or self-selection bias.

Chapter 13 “Use of Response Propensities” introduces the idea of response probabilities, with particular attention to the response propensity weighting approach and the response propensity stratification method. The first attempts to adjust the original selection probabilities, while the second recalls the post-stratification methods.

The last Chapter, Chapter 14, explores the concept of “web panel”. Web panel is a survey system in which the same individuals are interviewed via web at different time points. Data are so collected in a longitudinal way on the same individuals, in a sort of panel design. There are some methodological challenges. This chapters gives an overview of several aspects of web panels. It describes its advantages and disadvantages, and examples of existing web panels are given.

Each chapter is structured in a first theoretical part, followed by a section on applications. At the end of each chapter there is a useful summary section and a section about the key terms related to the topic that has been addressed. Exercises and references conclude each chapter of the book.

The website <https://www.web-survey-handbook.com/> is the companion of the book. It provides the survey data set which is used in the book for many applications and examples. Dataset is available in SPSS (SPSS Corporation, Chicago, IL) format. A section about the simulation of opinion pools is also available on the website.