

4th Edition

# Doing Survey Research

**A Guide to Quantitative Methods**

Copyright © 2018. Routledge. All rights reserved. May not be reproduced in any form without permission from the publisher, except fair uses permitted under U.S. or applicable copyright law.

**PETER M. NARDI**



EBSCO Publishing : eBook Collection (EBSCOhost) - printed on 11/5/2018 7:43 AM via AL QASEMI ACADEMIC COLLEGE OF EDUCATION  
AN: 1692377 ; Nardi, Peter M.; Doing Survey Research : A Guide to Quantitative Methods  
Account: ns149480



# DOING SURVEY RESEARCH

Each day we are faced with continuing claims made by media pundits, politicians, teachers, and friends, often quoting research. Consider also the numerous comments and posts on Internet blogs, Twitter, and Facebook that illustrate the confusion between opinion and factual data. How do we learn to interpret the research we hear about and read, to distinguish opinions from scientific facts, and to use this knowledge to conduct our own studies to answer the questions faced in everyday situations?

Understanding the components that go into scientific research and learning how to do research, make decisions about which statistics to use, and analyze statistical findings are goals for everyone in today's research-oriented world. Questions about the reliability and validity of data from a study or public opinion poll come up routinely and need critical review. This book contributes to achieving these objectives.

*Doing Survey Research* is intended for people who want to learn how to conduct quantitative studies for a project in an undergraduate course, a graduate-level thesis, or a survey that an employer may want completed. This brief, practical textbook prepares beginners to conduct their own survey research and write up the results, as well as read and interpret other people's research. It combines survey design with data analysis and interpretation.

And it is for those who need to understand and critically interpret survey research found in scholarly journals, reports distributed in the workplace, and social scientific findings presented online in the media, on a blog, or in social media postings.

Essential new updates to this edition include coverage of Big Data, Meta-Analysis, and A/B testing methodology—methods used by scholars as well as businesses like Netflix and Amazon.

**Peter M. Nardi** is Professor Emeritus of Sociology at Pitzer College, a member of the Claremont Colleges, former President of the Pacific Sociological Association, and author of *Critical Thinking: Tools for Evaluating Research*.



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

# DOING SURVEY RESEARCH

A GUIDE TO  
QUANTITATIVE METHODS  
FOURTH EDITION

Peter M. Nardi

 **Routledge**  
Taylor & Francis Group

NEW YORK AND LONDON

Fourth edition published 2018  
by Routledge  
711 Third Avenue, New York, NY 10017

and by Routledge  
2 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN

*Routledge is an imprint of the Taylor & Francis Group, an informa business*

© 2018 Taylor & Francis

The right of Peter M. Nardi to be identified as author of this work has been asserted by him in accordance with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

*Trademark notice:* Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

First edition published by Allyn & Bacon 2002

Second edition published by Pearson 2005

Third edition published by Routledge 2014

*Library of Congress Cataloging-in-Publication Data*

A catalog record for this book has been requested

ISBN: 978-1-138-04338-1 (hbk)

ISBN: 978-1-138-04339-8 (pbk)

ISBN: 978-1-315-17223-1 (ebk)

Typeset in Bulmer MT  
by Apex CoVantage, LLC

# contents

*Figures* VII

*Preface to the Fourth Edition* IX

## CHAPTER ONE Why We Do Research 1

In this chapter, the differences between everyday thinking, pseudoscience, and scientific thinking are discussed. An argument is made about the advantages of doing survey research and understanding various kinds of research: exploratory, descriptive, explanatory, and evaluation. Conditions for understanding cause-and-effect relationships are presented. The chapter concludes with a comparison of quantitative and qualitative research methods and brief discussions of Big Data, meta-analysis, and social network analysis.

## CHAPTER TWO Finding Ideas to Research 26

Discovering topics to study by searching for research ideas and finding existing studies is one of the goals of this chapter. Learning to write a good literature review is discussed, especially in the context of using theory to guide your research. The chapter also raises the ethical issues involved in doing research.

## CHAPTER THREE Designing Research: Concepts, Hypotheses, and Measurement 46

Central to doing survey research is understanding the idea of operationalization and how to go from ideas to concepts to variables. Learning the various levels of measurement is also essential for analyzing data. This chapter shows how to write hypotheses using independent and dependent variables and how to evaluate the reliability and validity of measures.

## CHAPTER FOUR Developing a Questionnaire 71

The strengths and weaknesses of different types of survey methods are discussed. The focus is on learning how to design a questionnaire: how to write attitude, behavior, and demographic questions and to format a survey. Ways to code responses and prepare data for computer analysis are also presented.

## CHAPTER FIVE Sampling 114

This chapter explains random probability sampling and describes different methods for obtaining samples. Longitudinal and cross-sectional research designs are discussed, as are different types of probability and nonprobability sampling and the idea of sampling error.

**CHAPTER SIX Presenting Data: Descriptive Statistics 135**

Understanding how to describe findings using graphs, tables, and statistics is the focus of this chapter. In addition, the emphasis is on learning to make decisions about when to use the mean, median, mode, and standard deviation and understanding the concept of the normal curve and z-scores. Concepts of probability and statistical significance are introduced.

**CHAPTER SEVEN Analyzing Data: Bivariate Relationships 161**

This chapter discusses how to read and construct cross-tables of data and decide which statistics to use to measure association and correlation. Understanding how to reject or accept a hypothesis by using the appropriate statistics to assess bivariate relationships is highlighted.

**CHAPTER EIGHT Analyzing Data: Comparing Means 185**

This chapter shows how to assess differences between means using t-tests and analysis of variance. As with other bivariate data analysis, knowing when to use these statistical procedures and how to interpret them is central to testing hypotheses.

**CHAPTER NINE Analyzing Data: Multiple Variables 204**

This chapter focuses on the analysis of three or more variables to answer more complex research questions. It discusses when to use and how to interpret linear multiple regression analyses and how to perform elaboration techniques with control variables.

**CHAPTER TEN Presenting Results, Making Conclusions, and Writing Reports 227**

In this final chapter, learning to write a report of the research project is emphasized, along with the key elements that go into a presentation of your study. Understanding the different audiences reading a report guides the preparation of the findings.

**Appendix** 247

**References** 253

**Index** 257

# figures

4.1	One-Directional Intensity Scale	81
4.2	Matrix Format for One-Directional Intensity Scale	82
4.3	Matrix Format for Two-Directional Intensity Scale	82
4.4	Examples of Branching Questions	95
4.5	Example of Branching Question Format	95
4.6	Formatting the Questionnaire: Three Styles	99
4.7	Sample Pages From the General Social Survey	111
4.8	A Survey of Questionable Merit	113
5.1	Cross-Sectional Versus Longitudinal Samples	129
6.1	Statistical Decision Steps (also see Statistical Analysis Decision Tree in Appendix)	135
6.2	Examples of Pie Chart (a) and Bar Graph (b)	139
6.3	Example of a Histogram	140
6.4	Example of a Frequency Polygon	140
6.5	Examples of Skewed and Normal Distributions	141
6.6	Histogram With Normal Curve	143
6.7	Normal Curve Distribution	148
7.1	Statistical Decision Steps (also see Statistical Analysis Decision Tree in Appendix)	161
7.2	Example of a Scatterplot, SPSS	178
8.1	Statistical Decision Steps (also see Statistical Analysis Decision Tree in Appendix)	185
9.1	Statistical Decision Steps (also see Statistical Analysis Decision Tree in Appendix)	204



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

# preface to the fourth edition

Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted.

—*Albert Einstein, physicist*

Each day we are faced with continuing claims made by media pundits, politicians, teachers, and friends, often quoting polls, scientific claims, and scholarly research. Consider also the numerous comments and posts on Internet blogs, Twitter, and Facebook that illustrate the confusion between opinion and factual data. How do we learn to interpret the research we hear about and read, to distinguish opinions from scientific facts, and to use this knowledge to conduct our own studies to answer the questions faced in everyday situations?

Understanding the components that go into scientific research and learning how to do research, make decisions about which statistics to use, and analyze statistical findings are goals for everyone in today's research-oriented world. Questions about the reliability and validity of data from a study or public opinion poll come up routinely and need critical review. This book contributes to achieving these objectives by providing the methods to design systematic studies.

*Doing Survey Research* is intended for people who want to learn how to conduct quantitative research for a project in an undergraduate course, a graduate-level dissertation, or a survey that an employer may want completed. And it is for those who need to understand and critically interpret survey research found in scholarly journals, reports distributed in the workplace, and social scientific findings presented online in news media, on a blog, or in social media postings.

The objective is to keep the book brief, simple, and lively; it is not designed to be encyclopedic in covering all kinds of research. See it as a how-to manual for those who do not plan to go beyond an introductory course yet need to learn (or relearn) how to read survey data and make decisions about which statistics and methods to use when designing a quantitative study for a thesis, class, or workplace project.

## FOCUS OF THE BOOK

The core goal of the book is to teach the methods to develop, carry out, and conclude a reliable and valid quantitative research project, while also providing the tools to critically evaluate research presented in academic journals and popular media. This is accomplished by organizing the chapters in the same sequence of most quantitative survey projects:

- Understand the purpose of doing research, in particular the strengths of survey designs compared with other methodologies and data collection tools (Chapter 1).
- Find topics to study by reviewing previous research in the professional journals to clarify ideas, formulate theories, and develop hypotheses (Chapter 2).
- Learn to construct and operationalize valid and reliable measures for a set of research questions or hypotheses (Chapter 3).
- Create a professional questionnaire by developing the techniques and learning the guidelines used by survey researchers (Chapter 4).
- Distinguish various probability and nonprobability sampling strategies (Chapter 5).
- Learn how to use basic statistical techniques and decide which statistics to use with different types of measures (Chapters 6 to 9).
- Read and evaluate tables of data and statistics that appear on the Internet, in news media, reports, and academic journals (Chapters 6 to 9).
- Interpret the data and make conclusions about the research questions or hypotheses when writing or presenting different kinds of reports (Chapter 10).

## NEW TO THIS FOURTH EDITION

Since many of the basic statistical and research methods concepts change little over the years, what makes a new edition lively and topical are the examples illustrating the key ideas in the text. Each chapter has updated data and illustrations from current academic and popular articles relevant to today's Web-oriented students, including studies focused on topics related to social media. Many of the exercises at the end of each chapter have also been revised with newer research and examples from a wide range of social and behavioral studies disciplines. In addition, information and illustrations of the key concepts provided in the *Doing Survey Research* website have been updated: <https://doingsurveyresearch.wordpress.com/>

Growing exponentially in today's Internet-mediated world is the collection and analysis of Big Data. This edition includes a brief discussion of what Big Data is and the ethical issues which emerge not only about privacy, but also how it relates to the methods discussed in this book about sampling, probability, and research design.

Another research method that's become increasingly popular is "meta-analysis." The updated text includes a short discussion of what meta-analysis is and how it is used to improve research reliability and validity. Along with these two research concepts, short discussions about the so-called A/B testing methodology and social network analysis have been added. These increasingly popular methodologies often require access to large data sets and powerful computers, so details about how to use them are left to more advanced textbooks. This new edition simply focuses on explaining what they are as a way to help learners to understand what they mean and what their strengths and limitations are when reading about them in scholarly research and popular media.

A few readers have asked for coverage of qualitative methods and more advanced statistics, such as logistic regression. However, this is a *beginner's guide* to quantitative survey methods rather than a comprehensive, encyclopedic volume on all sorts of social science research techniques. The objective is to keep the book brief, simple, and lively. I see it as preparing a foundation for those students who will go on to graduate school, where they will learn more advanced methods and statistics. And I view the book as a how-to manual for those who do not plan to go beyond an introductory course, yet need to learn (or relearn) how to read survey data and make decisions about which statistics and methods to use when designing a study for a thesis, class, or workplace project. I have received many e-mails from nonstudent readers in real-world workplaces who have been tasked with writing a questionnaire, conducting a survey, and analyzing data and picked up the book to refresh their memory of material learned in a course taken years before. These are all the audiences for which this book is written.

### ACKNOWLEDGMENTS

I continue to acknowledge all the students at Pitzer College who helped me with this book by reading it, asking me to clarify passages, and providing me with feedback in my quantitative research methods course which I taught for nearly 35 years. Thank you to the anonymous reviewers who provided suggestions and to those readers who have e-mailed me with comments. This book is made possible thanks to my esteemed editor Dean Birkenkamp, not only for his expert advice but also for his friendship and persistence. Most important, Jeff Chernin continues to figure out my methodologies and see the personal and statistical significance of our life together.

Remember to visit the *Doing Survey Research* website to find additional information and examples of the concepts and ideas discussed in this textbook:  
<https://doingsurveyresearch.wordpress.com/>