



Research Methods  
for the

BEHAVIORAL and  
SOCIAL SCIENCES

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# Research Methods for the Behavioral and Social Sciences

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JOHN WILEY & SONS, INC.

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Published by John Wiley & Sons, Inc., Hoboken, New Jersey.

Published simultaneously in Canada.

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*Library of Congress Cataloging-in-Publication Data:*

Weathington, Bart L.

Research methods for the behavioral and social sciences / by Bart L. Weathington, Christopher J. L. Cunningham, David J. Pittenger.

p. cm.

Includes bibliographical references and index.

ISBN 978-0-470-45803-7 (cloth)

1. Psychology—Research—Methodology. 2. Social sciences—Research—Methodology. I. Cunningham, Christopher J. L. II. Pittenger, David J. III. Title.

BF76.5.W43 2010

150.72—dc22

2009041473

ISBN 9780470458037

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

# Research Methods for the Behavioral and Social Sciences

To Jeanie, Alex, Rebecca, Mom, and Dad for literally everything.

—Bart L. Weathington

To God, my wife Lori, my family, and my students and colleagues—thank you  
for spending time with me on the journey.

—Christopher J. L. Cunningham

To my wife, Denise, who has, by example, taught me to enjoy the moment  
and to worry less about the future, which I cannot control.

—David J. Pittenger

# Preface

The pursuit of knowledge requires no justification.

—David J. Pittenger

Ditto.

—Bart L. Weathington & Christopher J. L. Cunningham

## **Philosophy for Writing This Book**

For those of us who teach research methods, one of the most gratifying experiences is watching students develop a passion for conducting research and an understanding of the practical value of systematic information gathering and decision making. These students discover that they can convert their natural curiosity about behavior into testable hypotheses. Moreover, they learn that studying research methodology is not arcane and irrelevant. Indeed, they come to appreciate the fundamental value and importance of empirical research. Because the vitality of science depends on the passion to learn more about behavior, it is our belief that a course in research methods is one of the most important courses that any student can take. Therefore, we wrote a book that we hoped would be attractive to students and convey to them our enthusiasm for research. To reach those goals, we strove to incorporate several features in our book.

## **Style**

We wanted the book to be inviting and easily accessible for the reader. Therefore, we gladly used an active narrator voice to make the textbook as engaging and interesting as possible. There is a clear and conversational style to the text, but that does not reflect lack of rigor in the material. Throughout the text, we provide comprehensive accounts of scientists' best ideas and research methods.

## **Examples**

Another strategy we used was to select familiar and contemporary examples. We based many of our examples on well-known social phenomena and on research that examines interesting topics. Our goal in selecting these examples was to illustrate important topics covered in the chapter and to show how researchers use research tools to answer complex and important questions.

## **Assumptions**

Those familiar with parametric statistics know that they come with many mathematical strings attached. If the researcher cannot ensure that the data and the design of the data collection methods meet these basic assumptions, then the inferences derived from the statistical analysis may be suspect. In some cases, the statistic is extremely robust to violations of its assumptions. Other statistics fail to withstand even minor deviations from the requirements.

An assumption we made in writing this book is that the reader using this book will have completed at least a general Introduction to Statistics course. Consequently, a certain level of statistical knowledge is assumed, especially the more basic concepts such as measures of central tendency, measures of dispersion, or standard scores. Nonetheless, many students seem to forget much after completing the final exam of their statistics course. This unfortunate phenomenon may mean that a single course in statistics is not enough to develop in students a sufficiently stalwart schema to ensure more efficient and durable encoding and retrieval of material. Therefore, this text does review critical statistical concepts as they relate to specific methodological techniques. Additionally, we included an appendix that can act as a statistics review.

A text should challenge students beyond their current ability. If education is not to extend the grasp of our students, then what is an education for? Thus, while we labored to write as clearly as we could, we also labored to ensure that we challenge students to extend beyond the bounds of their comfort and present to them the tools needed to understand contemporary behavioral research. In doing so, we hope that the instructor recognizes that he or she is not bound to teach every chapter or every topic in each chapter. This is a fairly thick book, and we hope that both student and instructor will recognize that it is a resource from which to draw information.

## **Integration of Research Methods and Statistical Concepts**

It has been our common experience that many students begin a research methods course with only a vague notion of how the statistics they had studied in the prerequisite statistics course are related to research design. Over time, we found ourselves teaching concepts related to statistical analysis along with traditional concepts related to research methods. Indeed, a careful review of statistical techniques requires discussion of research methodology. Similarly, discussions of research design require a review of statistical principles.

Therefore, in writing this book, we wanted to ensure that students receive a comprehensive and detailed review of the best techniques for studying behavior and social phenomena. Consequently, where appropriate our chapters provide a comprehensive review of research methods and the statistical concepts that support them. The review of the statistical

principles, while comprehensive, is conceptual and nontechnical. Students who have completed a course in statistics will find these sections to be a useful review of important topics. Students who have not studied statistics will find these sections a suitable and readable introduction to these topics.

For example, the review of sampling procedures examines the different methods researchers use to create representative samples and demonstrates how the Central Limit Theorem allows one to make valid inferences using sample statistics. Other topics receive recurring attention throughout the book, including the important concept of statistical power. The goal is to show students that they can control power by adjusting sample size and by gaining control over specific types of variance—increasing variance due to the independent variable and decreasing variance due to random or sampling error.

## **Order of Chapters**

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We arranged the sequence of chapters to both match the steps in conducting research and to aid readers in learning how to design and implement a research project. Consequently, the first few chapters present background information, ethics, and an overview of various research methods. Subsequent chapters review such topics as bibliographic research and methods for generating samples. The next set of chapters reviews how to create reliable and valid measurement instruments. Thus, there are separate chapters on creating tests and using correlation statistics to evaluate the reliability and validity of any measurement. The lessons learned in these chapters set the stage for all types of psychological research.

The subsequent chapters examine the issues and steps common to all single-factor and multifactor studies, as well as single-subject and nonexperimental methods. Relatively early in the text is a chapter on how to prepare a paper that follows the editorial guidelines of the American Psychological Association. In most texts it is common to reserve this chapter for the end of the book. However, it has been our experience that waiting until the end of a course to talk about the most common form of final outcome (i.e., a written report) is simply too late for this material to take root. A concrete understanding of what the finished project should look like aids student researchers in learning about and planning a research project.

In writing this text, one of our goals was to allow instructors the flexibility to rearrange the order of the chapters without a loss of continuity. Ultimately the goal of a research methods course is to produce both informed consumers of existing research and informed producers of new or refined knowledge. We believe that the order of chapters aids in the completion of this goal, but some instructors may find that a different order of chapters better fits their style.



## **Pedagogy**

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Each chapter uses multiple methods to present the material, including clearly written text, familiar and interesting examples, and visual illustrations to help the reader understand complex and abstract concepts. The specific pedagogical features include:

- **Research in Action:** Each chapter includes case studies and critical thinking exercises. The goal of these exercises is to help the reader apply critical concepts to a research scenario.
- **Knowledge Check:** Each chapter contains several Knowledge Check questions, which consist of a series of questions that require the reader to apply the material to objective problems. These questions require more than rote memorization because they ask the reader to apply the material. Answers to these questions are provided in Appendix C.
- **Multiple Presentations of Concepts:** Throughout the book, the reader will find a combination of text, pictures, and examples to illustrate various concepts.
- **Glossary:** Each chapter contains definitions of important terms.
- **Statistical Review and Integration:** Appendix A is a statistics review designed to help students remember and understand basic statistical concepts. Additionally, many chapters have a section that deals with the statistics underlying the topics covered in that chapter.
- **Statistical tables:** Appendix B contains a comprehensive list of commonly used statistical tables.

## **Supplementary Materials**

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No textbook is complete without ancillary materials to aid the instructor in introducing course material to students. This is especially important for a text on research methods. Accordingly, a full set of **PowerPoint slides**, a **Test Bank**, and an **instructor's manual** are available to instructors through this book's website on Wiley's Higher Education site at [www.wiley.com](http://www.wiley.com). Of particular note is the inclusion of a **Research Journal** within the instructor's manual that provides examples of journal articles that supplement the material presented in this book. We would like to thank the journal *Modern Psychological Studies*, and particularly its current editor Dr. David Ross, for allowing us to incorporate published articles as applied examples of research methods in practice.

# Acknowledgments

Although we are the authors of the book, we cannot claim that what you will read is our work alone. Many people have had a hand in helping in the preparation of this text and in providing us with the training and resources that have allowed us to become researchers and professors. These people have earned our deepest admiration and continued thanks. Any errors, of course, are our own.

We are especially grateful to our editor at Wiley, Patricia Rossi, who has provided us with extensive feedback and guidance while still giving us the flexibility to produce a book we are proud to call our own. Countless professionals working at John Wiley & Sons, Inc., also deserve our sincere thanks. Specifically, we want to thank Katie DeChants and Kim Nir for their valued time and assistance in developing a professional publication.

Many reviewers read and commented on preliminary drafts of this book. The job of a reviewer is to scold the author for making mistakes and to offer praise only when deserved. The reviewers did their job well. Their comments were often humbling because we had failed to describe something as clearly and accurately as possible. Similarly, their comments flattered us when they found parts of the book that they liked. Consequently, the book you are about to read very much reflects their supportive criticism.

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