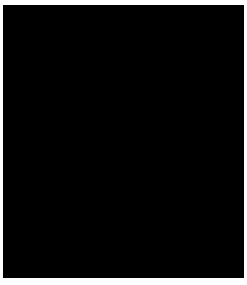

Research Methods, Design, and Analysis

TWELFTH EDITION

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Brief Contents

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Preface

Welcome to *Research Methods, Design, and Analysis*. You are embarking on a study that will help you to think critically and creatively in Psychology and other disciplines. We have three goals for this text. First, we have focused on writing a book that provides an understanding of the research methods used to investigate human thought and behavior. Research methods tend to change slowly, but they do change. This book provides coverage of the complete range of research methods available today. Psychology tends to favor experimental methods so we devote more time to experimental research methods. Because survey research also is used in many areas of psychology, we carefully cover this method, including how to write a proper questionnaire. Because of the rapid growth of qualitative and mixed methods in psychology, we carefully cover these methods to complement the more traditional methods and to add to each student's repertoire of research skills. A second overarching goal that has been maintained throughout all editions of the textbook is to present information in a way that is understandable to students. We have attempted to meet this goal by presenting material in as simple and straightforward a manner as possible and by accompanying complex material with illustrations taken from the research literature. We believe that such illustrations not only assist in clarifying the presented material but also bring the material to life when it is placed in the context of actual research studies. This allows the student not only to learn the material but also to see how it is used in a research study.

Overview and Organization of the Textbook

Research Methods, Design, and Analysis is written at the undergraduate level and is intended for use in the undergraduate methods course. The book provides an introduction to all aspects of research methodology, and assumes no prior knowledge. The chapters are divided into seven major parts, as follows:

Part I. Introduction (Chapters 1 and 2)

This section begins with a discussion of knowledge and science in an effort to provide students with an understanding of the nature, goals, and outcomes of science. We believe that most students have an incomplete understanding of science and that they must understand its goals and limitations in order to appreciate and understand the nature of the research process. This is followed by a discussion of

the major types of research used to investigate mind and behavior in an attempt to make sure that the students connect the various research approaches with science. We also discuss the major methods of data collection to help students see how empirical data are obtained.

Part II. Planning the Research Study (Chapters 3 and 4)

In this section, the focus of the book moves to some general topics involved in all research studies. First, we explain how to come up with a research idea, conduct a literature review, and develop a research question and hypothesis. Second, we explain the key ethical issues that must be considered when planning and conducting a research study. We explain the ethical guidelines sanctioned by the American Psychological Association.

Part III. Foundations of Research (Chapters 5 and 6)

In Part III, we cover some concepts that the researcher must understand before critiquing or conducting a research study. We begin with a discussion of measurement. We define measurement, and explain how measurement reliability and validity are obtained. Next, we explain how researchers obtain samples of research participants from targeted and accessible populations. We explain the different methods of random and nonrandom sampling, and we show the important distinction between random selection and random assignment. We also briefly explain the sampling methods used in qualitative research. Next we explain how research validity (i.e., valid results) is obtained. This includes discussions of the major kinds of research validity (internal, external, statistical conclusion, and construct) that must be addressed and maximized in empirical research.

Part IV. Experimental Methods (Chapters 7–11)

Part IV is focused on, perhaps, the most prominent approach to research in psychology and related disciplines (i.e., experimental research). The section includes (a) a chapter explaining the control techniques required to obtain valid research results, (b) a chapter explaining how to select and/or construct a strong experimental research design, (c) a chapter explaining the procedure and details of carrying out an experimental study, (d) a chapter explaining how to select and/or construct a quasi-experimental research design when needed, and (e) a chapter explaining when single-case designs are needed and how to select and/or construct an appropriate single-case design.

Part V. Survey, Qualitative, and Mixed Methods Research (Chapters 12 and 13)

This section includes chapters on additional major research methods used in psychology and related disciplines. First, the student is introduced to the goals, design, and conduct of survey research. The student will also learn how to correctly construct a questionnaire and/or interview protocol to be used in survey research. Second, the book includes a full chapter on qualitative and mixed methods research. The relative

strengths and weaknesses of quantitative, qualitative, and mixed methods research are discussed, the different qualitative and mixed methods approaches and designs are explained, and information is provided about how to conduct a defensible and rigorous qualitative or mixed methods study.

Part VI. Analyzing and Interpreting Data (Chapters 14 and 15)

This section explains descriptive and inferential statistics in a way that is both rigorous and fully accessible to students with no prior background in statistics. The descriptive statistics chapter explains the graphic representation of data, measures of central tendency, measures of variability, measures of relationship between variables, and effect size indicators. Chapter 15, "Inferential Statistics," explains how researchers obtain estimates of population characteristics based on sample data and how researchers conduct statistical hypothesis testing. In an effort to connect design and analysis, the appropriate statistical tests for the experimental and quasi-experimental research designs covered in earlier chapters are discussed. The student will also learn how to present the results of significance tests using APA style.

Part VII. Writing the Research Report (Chapter 16)

In Part VII we explain the basics of writing a professional, informative, and accurate research manuscript that can be submitted for publication. The guidelines from the latest edition of the *Publication Manual of the American Psychological Association* are explained in this chapter.

Pedagogical Features

The pedagogical features include concept maps and objectives at the beginning of each chapter. Each chapter highlights important terms and concepts and includes definitions of these in the chapter margins. These terms and concepts are highlighted not only to point out to students that they are important but also to increase the ease with which students can learn these terms and concepts. Study questions are spaced throughout each chapter to help students review the material after they have finished reading a section; this feedback system will assist students in learning the material and assessing whether they understand the material. Each chapter ends with several learning aids. First, a summary of the material, a list of the key terms, and a set of useful Internet sites are provided. Next, to help students access their knowledge of the chapter material, a Practice Test is provided at the end of each chapter. These tests include several multiple choice questions that students can use to assess their knowledge of the chapter material. The Practice Test is followed by a set of Challenge Exercises; these are designed to provide students with exposure to and experiences with activities required in the conduct of a research study.

In addition to the pedagogical aids included in the book, the twelfth edition includes a MySearchLab with eText (www.mysearchlab.com) integrated Web site. MySearchLab contains an eText that students can access anywhere they have an Internet connection, including tablet devices, making it easier for them to study on

the go. Interactive glossary flashcards and practice tests help them prepare for exams. MySearchLab also includes Simulations of classic experiments and research inventories, giving students firsthand experience with common research methodologies. The Simulations anonymously track participant data that can be downloaded by instructors and distributed to students for analysis.

One of the major challenges of a Research Methods course is engaging students in the subject matter and promoting critical thinking. MySearchLab also includes Operation ARA, a critical thinking game developed by Keith Millis, Art Graesser, and Diane Halpern. Operation ARA is a role play game that uses a "save the world" storyline to engage students as they learn scientific thinking and research methods. Students progress through three levels in the game: from Basic Training, where they learn the skills, to the Proving Ground, where they demonstrate their mastery of the skills, to Active Duty, where they must apply their skills to stop the world from certain destructions. A separate Instructor's Guide is available to adopters. MySearchLab is available for purchase standalone, or it can be packaged at no additional cost with the textbook.

New to the Twelfth Edition

Many minor changes have been made to the twelfth edition to update references, clarify material, and improve the student learning process. The major changes are as follows:

1. Added a new comprehensive MySearchLab with eText so that this book can be used for online, blended, and regular classroom courses.
2. Added audio file for each chapter so students can hear the authors read the chapter at their convenience.
3. Added learning objectives to the beginning of each chapter.
4. In Chapter 4, updated ethical principles to match the new APA guidelines.
5. In Chapter 8, added material on mixed experimental research designs.
6. In Chapter 8, added internal validity tables modeled on the classic work by Campbell and Stanley, 1963 (and updated based on Shadish, Cook, and Campbell, 2002), specifically Table 8.1 Summary of Threats to Internal Validity for Weak Experimental Designs and Table 8.2 Summary of Threats to Internal Validity for Strong Experimental Designs.
7. In Chapter 10, added Table 10.2 Summary of Threats to Internal Validity for Quasi-Experimental Designs.
8. In Chapter 13, added a new section on Research Validity in Mixed Methods Research.

Acknowledgments

As with all previous editions, we offer our sincere appreciation and gratitude to our editor Stephen Frail, his editorial assistant Caroline Beimford, the Pearson production team, our students, and all of our external reviewers of past editions of this book.