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978-0-521-60906-7 - Statistical Analyses for Language Assessment Workbook and CD-ROM

Lyle F. Bachman and Antony J. Kunnan

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Statistical Analyses for Language Assessment Workbook and CD-ROM

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*To the memory of
Lee and Edna Bachman and
John Ignatius Kunnan and Mary John Manjali.*

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Preface

Statistical Analyses for Language Assessment is different from the other volumes in the Cambridge Language Assessment Series in that it aims at enabling readers to learn how to utilize a set of general statistical procedures that are needed for developing language assessments of any kind. The statistical concepts and reasoning covered in the book are complex and likely to be unfamiliar to most readers. Furthermore, the statistical procedures covered are likely to require knowledge in mathematics that many readers will not have used for many years, and which many may have felt to be too daunting to attempt on their own. It is exactly for these reasons that we have provided this Workbook.

The collective experience of statistical pedagogy tells us that these concepts and procedures are mastered most effectively when students are provided with opportunities to practice the calculations and to apply these to situations relevant to their own research and development interests. This experience is reflected in the now standard practice of providing example data sets and exercises for textbooks in measurement and statistics. We thus believe that this Workbook and the accompanying CD will greatly enhance the effectiveness of the main book for its intended audience. The exercises are intended to provide readers with opportunities to work with and to apply the concepts and procedures presented in the book with actual data sets from language assessment research.

The general format for the chapters is as follows:

- I Bullet-point list of key concepts of the chapter
- II Conceptual exercises and problems that help reinforce the concepts in the chapter and that present hypothetical situations in which readers will be able to apply these concepts. These exercises are of three types:
 - A. Matching exercises that cover key concepts and their definitions;
 - B. True-False exercises covering key concepts and procedures; and
 - C. Hypothetical situations with open-ended questions.
- III Hand calculations with small data sets for each statistical concept and procedure discussed in the chapter

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- IV An example data set from an actual research study in language testing to illustrate the use of SPSS to calculate the statistical procedures discussed in the chapter. We use these examples to illustrate the appropriate use of the statistical procedures discussed in the chapters, and to walk readers step-by-step through the use of SPSS to calculate these procedures.
- V Exercises with different data sets, using the appropriate SPSS programs, followed by questions about how to interpret the results of the analyses.

In Chapters 1, 7 and 9 of the book no statistical procedures are discussed, so there are no hand calculation or SPSS exercises for these Workbook chapters.

The CD

The CD contains two sets of materials:

- 1 **Answers to the exercises in the Workbook.** Answers to the matching and True–False exercises are straightforward. However, because the hypothetical situation exercises are intended to provide an opportunity for readers to think through and apply the concepts and procedures discussed in the chapter, the answers we provide for these exercises should be seen as illustrative of how one might approach these situations, and not as the only definitive answers. Indeed, we hope that our answers to these questions will stimulate as much thought and discussion as the questions themselves.
- 2 **Sample data sets, SPSS programs for running the statistical analyses for these data sets, and a full description of each data set.** These data sets will be used for the SPSS exercises in the Workbook. We include each data set in several different formats, which will enable readers to use them with a wide range of application programs. Thus, even though we will be using SPSS examples in the Workbook, readers with access to or a preference for other computer statistics programs will be able to use the data sets with these. We include the data sets available in the following formats:
 - SPSS for Windows system files (*.sav);
 - Tab delimited ASCII, or text only files (*.dat, *.txt), which can be read by most spreadsheet and statistical programs; and
 - EXCEL files (*.xls), which can be read by most spreadsheet and statistical programs.

In addition, SPSS program files (*.sps) are provided for the exercises and examples in the Workbook.

We would like to thank our editor, Charles Alderson, for his valuable support and suggestions throughout the writing of this Workbook. We would particularly like to thank Yasuyo Sawaki and Xiaoming Xi, who read the penultimate draft of the Workbook, along with the text, and who made many invaluable suggestions for improving the quality and teachability of both. Finally, we would like to thank the many students who have pointed out errors, given us suggestions, and generally inspired us throughout the process of writing this Workbook. Any infelicities that remain are, of course, our own.

We hope you enjoy using the Workbook and CD.

Lyle F. Bachman and Antony J. Kunnan
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