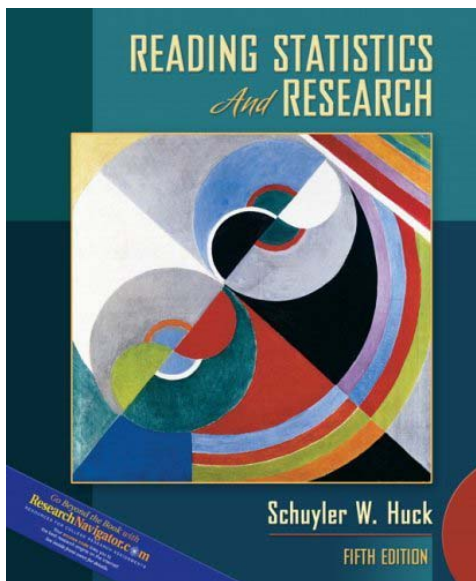# READING STATISTICS AND RESEARCH

Huck, S. W. (2008). (Fifth Edition)
New York: Pearson (ISBN-10: 0-205-51067-1;
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"If applied researchers could more adequately critique the studies cited within their own literature reviews, they also would be able to apply such knowledge to their own investigations" —Huck (2008, xviii).

"Reading statistics and research" is one of the reader friendliest premium reference sources on research statistics helping both those who conduct their own research studies, and those who do not specifically engage in research studies but do have to encounter, decipher and critique the results of other researcher's investigations.

The book is written by Schuyler Huck, Distinguished professor and Chancellor's Teaching Scholar at the University of Tennessee, Knoxville. Huck's applied and theoretical work has been cited by scholars in approximately 350 different academic journals. He reflects his concerns for improving statistical instruction and helping research consumers to evaluate research reports in his books, journal articles, convention presentations, and on his website (www.readingstats.com).

The book is published by the leading publisher in the field of education, Pearson, which provides quality education solutions through its renowned imprints such as Addison-Wesley, Allyn & Bacon, Benjamin Cummings, Longman, Prentice Hall, and several others. The book is consisted of 544 pages (+xvi) covering 19 chapters. It is integrated with the Research Navigator ™ through fun end-of-chapter exercises and icons in the margins next to important terms used in the e-articles of different disciplines. Followed by a quite reader friendly and appealing preface indicating the objectives of the new edition along with the differences between the new edition and the previous edition, a section on how to use the Research Navigator ™ is included. Purchasers of a new copy (rather than a used copy) are able to get their unique access codes to register for Research Navigator ™.

Chapters covered are 1) the typical format of a journal article, 2) descriptive statistics: the univariate case, 3) bivariate correlation, 4) reliability and validity, 5) foundations of inferential statistics, 6) estimation, 7) hypothesis testing, 8) effect size, power, CIs, and Bonferroni, 9) statistical inferences concerning bivariate correlation coefficients, 10) inferences concerning one or two means, 11) tests on three or more means using a one-way ANOVA, 12) post hoc and planned comparisons, 13) two-way analyses of variance,

14) analyses of variance with repeated measures, 15) the analysis of covariance, 16) bivariate, multiple and logistic regression, 17) inferences on percentages, proportions, and frequencies, 18) statistical tests on ranks (nonparametric tests), and 19) the quantitative portion of mixed methods studies.

One of the most distinguishing features of the book is that – similar to previous editions- a total of 519 excerpts from recent research articles in different disciplines are presented, analyzed and discussed to better illustrate concepts mentioned in this edition. Huck maintains that of 519 excerpts, only 18 were carried forward from the fourth edition while 501 of them are new all of which he selected himself rather than asking students or graduate assistants to pluck from the research literature. Excerpts are selected and located in the book so meticulously that it is almost impossible to skip a subject matter without working out the gist.

The fifth edition includes a new chapter on mixed methods research focusing entirely on the quantitative portion of mixed method studies. If the book is read carefully without missing the excerpts, it takes only about ten to fifteen minutes to fully understand the chapter on mixed methods studies. However, the reader should not primarily rely on this chapter to comprehend the mixed method designs as the chapter primarily delves into the quantitative portion of such designs and skips some preliminaries which might be checked from the seventeenth chapter of John W. Creswell's great book, Educational Research (third edition) which was published by Pearson in 2008.

While transforming the fourth edition of the book into the fifth edition, several content changes have been made in addition to the new chapter on mixed methods studies. Some items are completely new to the fifth edition such as several effect size indices, the use of interactions as independent variables in multiple regression, an overview of meta analysis, the percent-agreement procedure for assessing interrater reliability, determining what the criterion variable is in concurrent/predictive validity, electronic collection of data, Tamhane's post hoc test, Holm's sequential Bonferroni adjustment procedure, nonrandom groups in ANCOVA, sample size determination in survey research and the distinction between cluster samples and stratified random samples (p xxi). However, two features of the previous editions have been maintained.

First, the format has been kept the same in which the book's core structure is empowered with excerpts from recent journal articles. Second, the text material has been kept outside the excerpts, which has been reported to be a clear and helpful presentation of the material.

As also maintained by Huck, there is generally a difference between what researchers are entitled to say following their data analyses and what these analyses actually do say. In this respect, the strong emphasis placed on the difference between statistical significance and practical significance with a reference to the effect size indices should be appreciated.

The book might be considered as one of the most intelligible research statistics books particularly in terms of the foundations of statistical inferences along with inferences concerning one, two or more sample means; interval estimation and point estimation; six-, seven-, and nine-step versions of hypothesis testing; generating null hypotheses; interpreting confidence intervals; type I and type II errors; and posteriori tests and planned comparisons. Different types of ANOVA and regression (i.e. bivariate, multiple and logistic) could be devoured by a social science reader in an enjoyable reading pace.

Each chapter of the book ends with final comments, impressive remarks, or important warnings highlighting the most important ideas mentioned in the chapter. Most of the time, these warnings eliminate the misunderstandings which might stem from perfunctory reading habits.

Most importantly, the text is "reader-friendly". Huck does not resort to long, boring, complex, and terminology-rich sentences. Rather, he resorts to an everyday language sometimes enriched with interesting and anonymous anecdotes which prevents a social science researcher from falling asleep as it occurs while reading most books on statistics.

The book demonstrates the best and most conservative ways to decipher and critique research reports particularly for social science researchers. In addition, new editions of the book are always better organized, effectively structured and meticulously updated in line with the developments in the field of research statistics. Even the most trivial issues are revisited and updated in new editions. For instance, purchaser of the previous editions might check the interpretation of skewness and kurtosis indices in the third edition (p. 34) and in the fifth edition (p.29) to see how the author revisits every single detail. Theory and practice always go hand in hand in all editions of the book. Re-reading previous editions (e.g. third edition) before reading the fifth edition gives the impression that the author never stops ameliorating his instructional text writing methods.

In brief, "Reading Statistics and Research" is among the best sources showing research consumers how to understand and critically assess the statistical information and research results contained in technical research reports. In this respect, the review written by Mirko Savić in Panoeconomicus (2008, 2, pp. 249-252) will help the readers to get a more detailed overview of each chapters. I cordially urge the beginning researchers to pick a highlighter to conduct a detailed reading with the book. A thorough reading of the source will make the researchers quite selective in appreciating the harmony between the data analysis, results and discussion sections of typical journal articles. If interested, beginning researchers might begin with this book to grasp the basics of research statistics, and prop up their critical research reading skills with some statistics package applications through the help of Dr. Andy Field's book, Discovering Statistics using SPSS (second edition) published by Sage in 2005.