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**Designing experiments and analyzing data. A model comparison perspective.**

Belmont, CA: Wadsworth Publishing Company. xvi, 902 p. (1990).

This hefty book of 902 pages is a classroom text on Designing Experiments and Analyzing Data. It is meant to be an “advanced” level text for “discussing ideas of statistics and solving the types of problems psychologists encounter every day”. The authors achieve these objectives by taking a model comparison approach, which emphasizes the conceptual process of statistics. On the flap of the book the authors point out other tools, which merit the use of this book in the classroom: (i) Flowcharts to assist students in deciding how to choose appropriate techniques for analyzing data; (ii) Many examples based on actual research drawn from a wide range of areas in the behavioral sciences; (iii) Numerous end-of-chapter exercises - ranging from calculational to conceptual - with selected solutions at the back of the text; (iv) Discussion of the logic of experimental design, including philosophy of science issues; (v) An emphasis on definitional formulas instead of computational formulas and on references to standard computer packages (SAS, SPSS<sup>x</sup> and BMDP). The necessary background for reading the book requires only one undergraduate statistics course and no mathematics beyond high school algebra (of course, the more mathematics and statistics you know the easier the book is to read). The authors provide the 16 chapters of the book in four parts and specifically these are: Part one: Conceptual basis of experimental design and analysis. Chapter 1. The logic of experimental design. Chapter 2. Introduction to the Fisher tradition. Part two: Model comparisons for between-subjects designs. Chapter 3. Introduction to model comparisons: one-way between-subjects designs. Chapter 4. Individual comparisons of means. Chapter 5. Testing several contrasts: the multiple-comparisons problem. Chapter 6. Trend Analysis. Chapter 7. Two-way between-subjects factorial designs. Chapter 8. Higher-order between-subjects factorial designs. Chapter 9. Designs with concomitant variables. ANOVA and blocking. Chapter 10. Designs with random or nested factors. Part three: Model comparisons for designs involving within-subjects factors. Chapter 11. One-way within-subjects designs: univariate approach. Chapter 12. Higher-order designs with within-subjects factors: univariate approach. Chapter 13. One-way within-subjects designs: multivariate approach. Chapter 14. Higher-order designs with within-subjects factors: multivariate approach. Part four: Alternative analysis strategies. Chapter 15. Robust ANOVA and ANCOVA. The book also contains 11 statistical tables, notes, a long list of references, solutions to selected exercises, a name index and subject index. For applied statisticians who are engaged in teaching and practical research this book is all right for classroom use and reference purposes. For straight statisticians the book is longwinded and not very challenging mathematically and statistically. *B.L.Raktoe*

*Keywords:* model comparison approach; behavioral sciences; exercises; selected solutions; standard computer packages; SAS; SPSS<sup>x</sup>; BMDP; Model comparisons; between-subjects designs; comparisons of means; Testing several contrasts; multiple-comparisons; Trend Analysis; factorial designs; concomitant variables; blocking; within-subjects factors; Higher-order designs; Robust ANOVA and ANCOVA; tables