Statistical Power Analysis: A Simple and General Model for Traditional and Modern Hypothesis Tests, Third Edition

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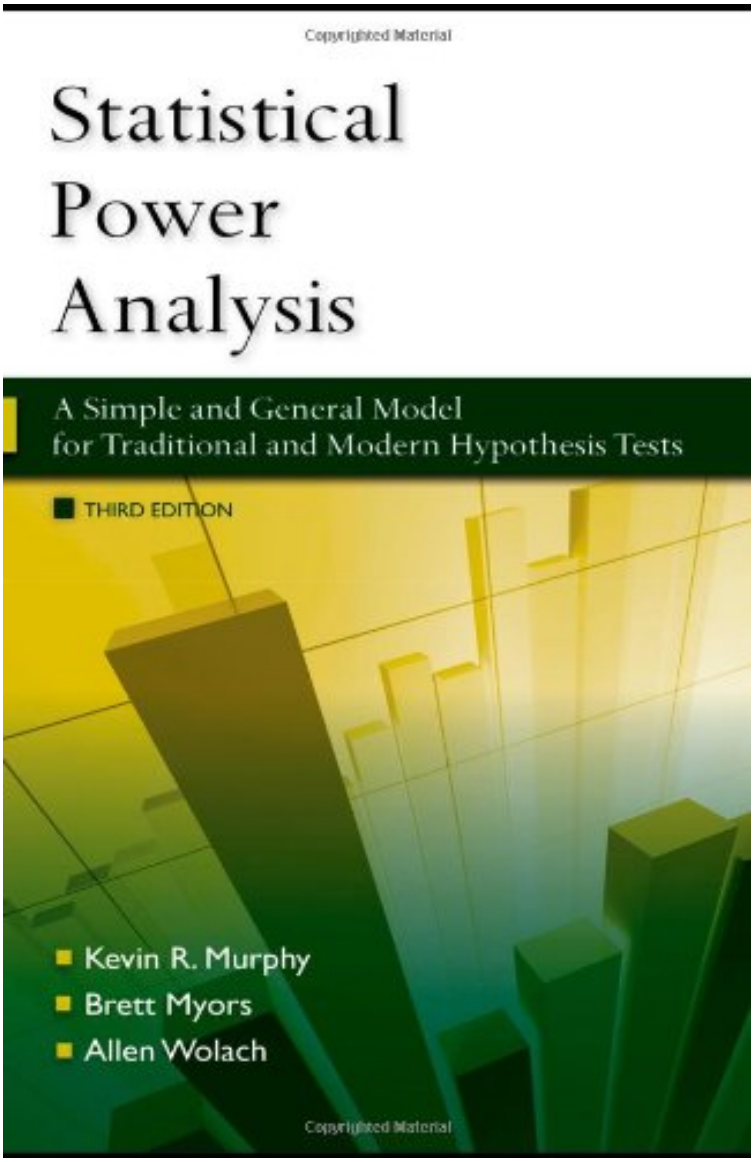

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Kevin R. Murphy, Brett Myors, Allen Wolach : Statistical Power Analysis: A Simple and General Model for Traditional and Modern Hypothesis Tests, Third Edition before purchasing it in order to gage whether or not it would be worth my time, and all praised Statistical Power Analysis: A Simple and General Model for Traditional and Modern Hypothesis Tests, Third Edition:

1 of 1 people found the following review helpful. Recommended by a colleagueBy B HuberI was given this book by a colleague. I liked it so much that I bought my own copy. It states things very clearly and it is a quick read. I searched for many things on the internet before coming across this found it to be very helpful.6 of 6 people found the following review helpful. Interesting... but needs a better editBy L. NadeauThe book presents a very interesting method: reducing power analysis to the F distribution. The authors provide very compelling and convincing arguments for the use of power analysis. At times you feel as if their arguments are not well referenced or backed-up, however, especially if you have read a number of technically-oriented statistical texts. Nevertheless, the arguments are provided a good intuitive feel.The one problem with the book is its editing, or lack thereof. For example, on page 49 the following appears: "If you set a more stringent alpha (e.g., a = .01) is set,..". The sentence was clearly edited, but the edited-out part was left in. This happens in multiple places. Also, on page 41, the (non)-word "irged" is used instead of "urged." All of this should have been caught and fixed prior to publication and prior to asking for $22.50 for the book. I can understand a few errors making it into the final printed edition, but this bordered on ridiculous. I would say that the editorial errors actually became a distraction and took away from the central theme of the book.23 of 25 people found the following review helpful. Almost good.By JSCThis text was interesting and informative, but belabored the value of minimum effect hypothesis testing and pretty much ignored confidence intervals as an alternative. Worse, this book contains some mistakes: the noncentral F distribution formula (A3 in Appendix A) is written with parameters that are not explained, and also the authors state that the classical hypothesis testing is false "by definition". This is simply not true; it may be false more often than not, but it is not false by definition. But the worst shortcomings of this book are that it propagates the use of statistical tables instead of clearly explaining the underlying formulae. With ubiquitous computers, it is ridiculous to think that people still need to consult tables, which are restrictive in the alpha values. After reading this text, it is clear that power depends on effect size, alpha, the standard deviations of the treated and untreated populations, and the sample size, but nowhere do the authors clearly show what this functional relationship is. I guess they think that gamma functions and the like are just too difficult mathematics and force people to blindly work with tables in a haze of confusion, wondering the functional relationship of these variables. Finally, they do point out the desired relative seriousness of type I vs. type II errors (a major plus) but fail to emphasize this point as much as it deserves. For example, if there is no a priori reason to favor type I over type II errors or vice versa, then these should be set equal to each other and the sample size calculated from the formulae. Using power = 0.8 with alpha = 0.1 may be acceptable in their field of psychology but is incongruous with the point that they belabor - that type II errors are typically more serious. In conclusion, I would say to read this book from a library and hold off on buying until they (hopefully) correct these flaws in a second edition. Unfortunately, I have yet to see a better text that does clearly explain the functional relationship between the variables involved in power calculations.

Noted for its accessible approach, this bestseller applies power analysis to both null hypothesis and minimum-effect testing using the same basic model. Through the use of a few relatively simple procedures and examples from the behavioral and social sciences, the authors show readers with little expertise in statistical analysis how to quickly obtain the values needed to carry out the power analysis for their research. Illustrations of how these analyses work and how they can be used to understand problems of study design, to evaluate research, and to choose the appropriate criterion for defining "statistically significant" outcomes are sprinkled throughout. The book presents a simple and general model for statistical power analysis that is based on the F statistic. Statistical Power Analysis reviews how to determine: The sample size needed to achieve desired levels of power The level of power needed in a study The size of effect that can be reliably detected by a study Sensible criteria for statistical significance. The third edition features: Re-designed, user-friendly software at www.psypress.com/statistical-power-analysis that allows users to perform all of the book's analyses on a wider range of tests and conduct significance tests, power analyses, and assessments of N and alpha A new chapter on Complex ANOVA Designs that demonstrates the use of power analysis in split-plot and randomized block factorial designs New boxed sections that provide examples of power analysis in action and unique issues that arise when applying power analyses Expanded coverage of minimum-effect tests, the fundamentals of power analysis and the application of these concepts to correlational studies. Ideal for students and researchers in the social, behavioral, and health sciences, business, and education, this valuable resource helps readers apply methods of power analysis to their research. PV and F tables serve as a quick reference. More details - plus a link to download the One Stop F Calculator - can be found at http://www.psypress.com/statistical-power-analysis/ .

"The change to the software is a substantial improvement and could go a long way to making power analysis more accessible. ... I often field ... questions along the lines of, I have ten subjects per variable in my study is that enough? It would be refreshing to direct the questioner to a text that is as clear and usable as this one." - Stephen Brand, University of Rhode Island "I see much need for a guide on power analysis among the graduate students and I think many students will benefit from reading this book. I especially like the boxed sections. ... They greatly help readers understand basic concepts." - Jaihyun Park, Baruch College "The ... addition of worked examples for each type of analysis ... will ... make the book more useful. ... The boxed examples present difficult concepts in student-friendly

language. ... I have used this book in the past ... in my graduate-level Experimental Design class. ... I would consider adopting it for my course." - Corinne Zimmerman, Illinois State UniversityAbout the AuthorPennsylvania State University, University Park, USA Griffith University, Nathan, Australia Illinois Institute of Technology