Discovering Statistics Using SPSS for Windows
ANDY FIELD (2000)

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Reviewedby
ASHOK SHARMA
Lecturer in Psychology,
Vaish PG College, (Haryana) INDIA

The book "Discovering Statistics Using SPSS for Windows" is exactly that! Since it calculates amazingly fast, in the recent years, the computer has become the most useful and helpful tool for the researchers in almost every field of knowledge - be it open and distance education, psychology, sociology, management or else. Quality research not only depends on fair data collection techniques but also on the respectable treatment of that data. Once the data have been collected, what is most important is the storage of data, their fast and 'as it is' retrieval when required, and their proper processing and analyses. Computers are of immense help in all these operations. However, it is interesting to note that computer is just a tool and what it will vomit (or produce) depends entirely upon the fingers and mind of its operator (or the researcher in the research settings). The computer has no mind (up to now!). So, it is the researcher who should be held responsible for the unfair treatment of the data. Proper treatment of the research data not only requires research attitude but also research aptitude, and proficiency and a solid background in statistical treatment of the data. For this purpose, some good textbooks are available that explain statistical theory and techniques. And some other good textbooks are also there on the role of computers and statistical software (e.g. SPSS) in the practical application of these statistical procedures employed on the data through computers. Here, the present book by Andy Field is a rare and excellent combination of both - statistical theory as well as statistical treatment of the data using SPSS - under one umbrella.

Written in a very friendly way, the author has tried his level best to remove the dark clouds of confusion regarding the 'horrible statistics', and he seems to be fairly successful in converting the "statistical depression and phobia" (which one experiences when s/he has to apply statistics on the collected data) into a very light SPSS environment and an enlightening experience where the use of SPSS in the statistical analyses of the data proves to be just like fun.

Accompanied by a CD-ROM, which consists of some SPSS data files (the examples of which have been used to explain various statistical operations throughout the book), this book is divided into 12 chapters. Each chapter proves to be a miniature encyclopaedia of a statistical technique(s). The first chapter deals with some preliminaries. The first section of this chapter tries to build a strong base of the reader about some essential statistical models, and the second section attempts at acquainting the reader with the SPSS environment. This section has been presented in such an easy fashion that any reader who has some preliminary hands-on experience in Windows and SPSS can easily understand what the author wants to convey. This is the most important section of the book since it explains each menu and various statistical procedures that can be applied using SPSS. In addition, the proper ways of data inputting and editing are discussed in this section.

The second chapter deals with 'exploring data.' Besides calculating some descriptive statistics, it is also highly important to check whether certain criteria (or assumptions) have been met that are a necessary condition for any statistical procedure, which we want to apply. After providing a 'quick guide to simple graphs', the assumptions of parametric data are highlighted. One must note and recognize the importance of these assumptions

that any (parametric or non-parametric) test should be run only after ascertaining that its basic assumptions have been met. This chapter describes the procedures to ascertain the same. However, if the required assumptions have not been met, one must not still loose hopes because there are some assumption-free tests (also known as non-parametric tests) which are to be applied on non-normal data. Three non-parametric tests viz., Mann-Whitney test, The Wilcoxon Signed- Rank test, and Chi-Square and Crosstabulation are explained alongwith easy practical procedures on "how to conduct these tests using SPSS?" The proper interpretations of the output add to the effectiveness of this book.

The third chapter is devoted to the correlation. After explaining the required theoretical background, Andy has described an impressive way to conduct a correlation analysis using SPSS alongwith the interpretations of various outputs. Next and the lengthiest chapter of this book deals with the theory and practice of simple and multiple regression. Various assumptions and definitions of various terms are explained in a beautiful way. Explaining the regression in details with a given example has made this procedure very easy to understand even for those (like me) who had no prior knowledge of it. Similarly, the fifth chapter explains logistic regression.

Comparing the Means has been a very favorite statistical procedure for most researchers. The sixth chapter can be of particular interest for them. In this chapter, the author explains the rationale for the t-test, inputting data, and displaying Means with error bar charts, the dependent and the independent t-tests. The next chapter concentrates on one-way ANOVA. In the eighth chapter of this book, Analysis of Co-variance (ANCOVA) and Factorial ANOVA (between-groups) have been explained in sufficient details.

There is one more favorite research strategy in which the same subjects are engaged in all conditions of an experiment. These are known as 'repeated measures designs' and the author has explained these in the ninth chapter. This chapter teaches about repeated measures ANOVA, repeated measures with several independent variables, and, mixed design ANOVA. Beginning his next chapter with the similarities and differences to ANOVA, Andy devotes tenth chapter to multivariate analysis of variance (MANOVA). In a very systematic manner, theory of MANOVA, principle of MANOVA test statistic, assumptions of MANOVA, MANOVA on SPSS and output from MANOVA are touched upon. At the end of this chapter, the author further, follows up MANOVA with Discriminant Analysis.

The second last and the most significant chapter deals with the "backbone" of any research - exploratory factor analysis. This is just unbelievable that what seemed previously to be a very tough technique, after going through this chapter, seems to be a child's play. In a very impressive and easy way, the author makes it clear what is a factor, and how to discover factors through factor analysis. He describes the essential theory behind factor analysis with sufficient research examples. The last chapter deals with appendices consisting of table of the standard normal distribution, various data files used chapterwise, and many more useful appendices. Lastly, just like any other good book, this one also provides references and index. Also, at the end of each and every chapter, there are some relevant references for further reading, if anyone is interested in.

After going through this book, I must admit that it is a treatise on the theory of various statistical procedures and practical experience with SPSS that is informative, facilitating, guiding, and straightforward. Various calculations, supplemented with appropriate examples and intelligent interpretations of the outputs, will definitely keep the readers engaged and will drive maximum benefits from this book. Various tables, figures and definitions of important terms have been provided in the book at the appropriate places, which make comprehension easier. Above all, this book teaches one to correctly interpret the research findings and outputs.

On the whole, this book is highly useful for those who are "statistically scattered" from one step to another, and want to work together through the use of computer and SPSS.

This book would be particularly helpful to all those who are engaged in research in one way or the other. It seems that a careful and in-depth study of this book might treat one's "stat-phobia" (and, on the other hand, saves the data from being tortured and mishandled). When I was a student of statistics, my teacher used to quote Garrett's book as Bible for the students of statistics. However, a lot of water has flown under the bridge since then. Now, as a teacher, I quote Andy's present book as a Bible for all those researchers who wish to be proficient in statistics as well as in SPSS. The acquisition of this book in personal library of every research oriented teacher, student, statistician and the like will be a valuable possession and is strongly recommended.

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