SHORT BOOK REVIEWS

Statistical Tools for Measuring Agreement
Lawrence Lin, A. S. Hedayat, Wenting Wu
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Readership: Statisticians, researchers, practitioners, and students in biomedical devices, psychology, medical research, and other areas.

Many years ago, when serving on the organising committee of a leading international conference (which shall remain nameless), I took it into my head to calculate the inter-rater reliability of the referees assessing the merits of papers submitted to the conference. Basically, there was none. Many years later, having accumulated extensive experience of serving on such panels, evaluating grant applications, and assessing research quality, I am convinced that the need for tools such as those described in this book is greater than ever. If more people, perhaps administrators and managers even more than the researchers, understood and could use these tools, better decisions might be made.

The opening chapter discusses the definitions of and differences between precision, accuracy, and agreement. The dangers of using misleading methods are explored – such as the familiar one of using the correlation coefficient, a measure of linear relationship, when agreement in value is needed. The important distinction between situations in which there is or is not a gold standard is discussed.

A moderate level of statistical knowledge is assumed, with the most advanced concepts being those of generalised estimating equations and mixed effects models. As well as definitions and properties, the book includes discussion of sample size and power calculations, and of how to cope with multiple raters and multiple replicates. Each chapter concludes with a useful guide to related publications.

This is a nice, concise summary of the area, and one which I shall certainly be recommending to colleagues.

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