Based on a course in the theory of statistics this text presents the role of likelihood in a whole range of statistical problems, from a simple comparison of two accident rates to complex studies requiring generalized linear or semiparametric modelling. The emphasis is that the likelihood is not simply a device to produce an estimate, but more importantly it is a tool for modelling.

The book generally takes an informal approach, where most of the important results are established using heuristic arguments and motivated with realistic examples. With the currently available computing power, examples are not contrived to allow a closed analytical solution, and the book can concentrate on the statistical aspects of the data modelling. In addition to classical likelihood theory, the book covers many modern topics such as generalized linear models and mixed models, nonparametric smoothing, robustness, the EM algorithm and empirical likelihood.

Yudi Pawitan is a Professor in the Department of Medical Epidemiology and Biostatistics, Karolinska Institute, Sweden

'This is a splendid book with its contents thoroughly covering all likelihood...Statements are firm, and explanations are full and clear. This book may be used as a reference work. It is strongly recommended as an academic library volume, and individually for statistics lecturers, advanced students, and researchers.' The Mathematical Gazette

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ISBN 978-0-19-967122-9

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