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Statistical modelling in GLIM. (English) Zbl 0676.62001

Oxford Statistical Science Series, 4. Oxford: Clarendon Press. xi, 374 p. £40.00/hbk; £17.50/pbk (1989).

The analysis of data by statistical modelling is becoming increasingly important. This book presents both the theory of statistical modelling with generalized linear models and the application of the theory to practical problems using the widely available package GLIM. Very valuable is the fact that the authors have taken pains to integrate the theory with many practical examples which illustrate the value of interactive statistical modelling. Throughout the book theoretical issues of formulating and simplifying models are discussed, as are the problems of validating the models by the detection of outliers and influential observations.

The book arises from short courses at the University of Lancaster with emphasis on practical programming in GLIM and numerous examples. A wide range of case studies is provided. An important feature of the book is a detailed discussion of survival analysis.

Contents: 1. Introducing GLIM 3. 2. Statistical modelling and statistical inference. 3. Normal regression and analysis of variance. 4. Binomial response data. 5. Multinomial and Poisson response data. 6. Survival data. App. 1. Discussion. App. 2. GLIM directives. App. 3. System defined structures in GLIM. App. 4. Data sets and macros.

Statisticians working in a wide range of fields, including biomedical and social sciences, will find this book an invaluable desk top comparison to aid their statistical modelling. It will also provide a text for students meeting their ideas of statistical modelling for the first time.

Reviewer: J.Antoch

MSC:

- 62-02** Research exposition (monographs, survey articles) pertaining to statistics
- 62J99** Linear inference, regression
- 62-07** Data analysis (statistics) (MSC2010)
- 62P99** Applications of statistics

Cited in 1 Review Cited in 33 Documents
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Keywords:

generalized linear models; GLIM; practical examples; interactive statistical modelling; outliers; influential observations; programming; case studies; survival analysis; analysis of variance; Binomial response data; Multinomial and Poisson response data

Software:

GLIM