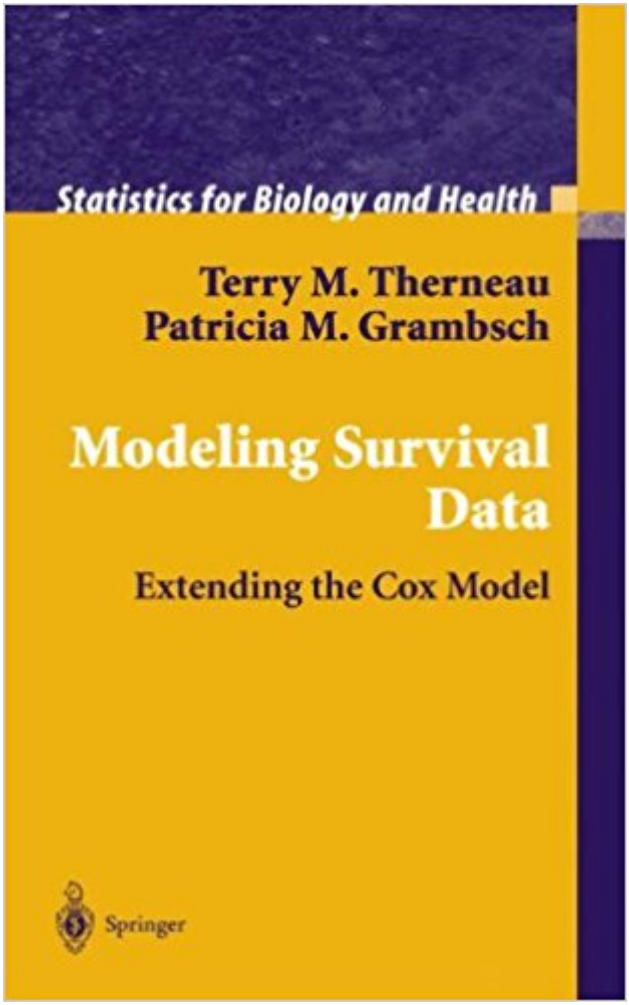
Modeling Survival Data: Extending The Cox Model (Statistics For Biology And Health)



Synopsis

This book is for statistical practitioners, particularly those who design and analyze studies for survival and event history data. Building on recent developments motivated by counting process and martingale theory, it shows the reader how to extend the Cox model to analyze multiple/correlated event data using marginal and random effects. The focus is on actual data examples, the analysis and interpretation of results, and computation. The book shows how these new methods can be implemented in SAS and S-Plus, including computer code, worked examples, and data sets.

Book Information

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Customer Reviews

From the reviews: TECHNOMETRICS "I would be curious to know how many people bought the book by Fleming and Harrington (1991) and by Anderson, Borgan, Gill, and Keiding (1993) when they first appeared hoping for an introduction to the subject. Instead we all should have saved our money and waited fir this volume by Therneau and GrambschÃ¢â ¬Â¦This book can serve as a useful reference for statistical practitioners who encounter survival data and for researchers who want to update their knowledge in modern survival analysisÃ¢â ¬Â¦The writing style is light and almost humorous in many places. We get the feeling that the authors had a lot of fun writing this book. If only it was available a decade ago." STATISTICAL METHODS IN MEDICAL RESEARCH"In short, this is an exciting book, which introduces and illustrates some recent

developments in surviavl analysis. The authors maintain an informal and good-humoures style, making the book very easy to read, and insist on a hands-on approach which encourages the reader to re-work examples. I would recommend it to any statistician analysing survival data." SHORT BOOK REVIEWS "The authors ... have laid out for us the wealth of their practical experience at all levels; the numerical aspects; computer algorithms; evaluation of different methods and connections between them; possible pitfalls; and interpretation of the results. Remarkable insights abound.This book completes that of P. Hougaard by giving much detail on actual fitting of the models discussed by him.It will serve two audiences: the busy practitioner who has not had time to catch up with martingale theory and counting processes and the graduate student who has just completed such a course and who needs to be introduced to the practicalities and judgements needed in data analysis. It is likely to become a well-thumbed copy on the statistician’s desk and statistical practice will be the better for it." STATISTICS IN MEDICINE "I use S-PLUS in my own applied work and when testing my methodological research. Therefore, I came to this book with high expectations. I was not disappointed. The book is an invaluable resource for all researchers who use SAS and/or S-PLUS in their applied work, and who want to improve their skills in analyzing survival and event history data." JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION "Ã¢â ¬Â¦I highly recommend [this book] to statisticians analyzing survival data with S-PLUS and SAS." "Analogous development for CoxÃ¢â ¬â„¢s regression model Ã¢â ¬â œ stimulated partially by the counting process theory Ã¢â ¬â œ has taken place over the last quarter of a century. This book provides a well-organized and extensive collection of these methods. Ã¢â ¬Â¦ The book is reasonably self-contained. It brings the fruits of the counting process-based methods to the common analyst Ã¢â ¬Â¦ . A number of biostatistical data sets have been used for the purpose of illustrative analysis. Ã¢â ¬Â¦ I think the book achieves more than its stated objective." (Debasis Sengupta, Sankhya, Vol. 65 (4), 2003) "This book models survival data, mainly in terms of the Cox regression model and its extensions Ã¢â ¬Â¦ . The text is fluently written in the style of a medium-level oral presentation which makes the book well readable and its contents well understandable Ã¢â ¬Â¦ . Difficult theoretical concepts are explained in an easy, yet instructive way Ã¢â ¬Â¦ . I consider this book as a most valuable source for beginners Ã¢â ¬Â¦ and I warmly recommend this book as introductory reading, guidance, and reference for practical work." (Jochen Mau, Metrika, February, 2003) "This book presents a state-of-the-art overview on modeling survival data. Ã¢â ¬Â¦ examples underline the enormous flexibility and potential of the discussed models. Ã¢â ¬Â¦ Appendices giving short tutorials into the statistical packages SAS and A-Plus as well as selected data sets will be very useful for most readers. Ã¢â ¬Â¦ The well chosen examples, their

analysis and interpretation underline the experience of the authors and makes the book a must-have for every biostatistician." (Heinz J. Skala, Statistical Papers, Vol. 44 (2), 2003) "Ã¢â ¬ËœThis is a book for statistical practitioners who analyse survival and event history data Ã¢â ¬Â¦.Ã¢â ¬â„¢ it is also for those who do have the theoretical knowledge already but want to know how to implement it in S-Plus or SAS Ã¢â ¬Â¦ analysis of any event data is outlined very clearly and illustrated by a lot of examples. Therefore, this book is recommended to everyone who deals with any kind of event data Ã¢â ¬Â¦ valuable guide on how to do survival/event analysis Ã¢â ¬Â¦." (Matthias Wahl, ISCB Newsletter, December, 2003) "This book contains a comprehensive description of what already can be found in the well-reputed S library survival 5 Ã¢â ¬Â¦ It gives an introduction to survival analysis, with emphasis on the Cox model, and with several illustrations from the authorsÃ¢â ¬â„¢ practice as biostatisticians. Ã¢â ¬Â¦ the book ends with Ã¢â ¬Â¦ several appendices containing SAS macros, S functions and data sets. The book is a very useful companion for the practitioner of survival analysis and particularly for one who uses the Cox model and survival 5." (GÃƒÂ¶ran BrostrÃƒÂ¶m, Zentralblatt MATH, Vol. 958, 2001) "This book presents and illustrates various failure time data analysis techniques Ã¢â ¬Â¦ the context of many of the examples seems quite interesting and each is adequately explained by the authors. Ã¢â ¬Â¦ The book is clearly written Ã¢â ¬Â¦ In summary, this work is a valuable addition to the list of books on failure time data analysis. Ã¢â ¬Â¦ can be recommended to data analysts wishing to try out some of the more recent failure time analysis developments." (Ross Prentice, SIAM Review, Vol. 43 (3), 2001) "The monograph provides an excellent overview on a number of introductory and advanced topics concerning the Cox proportional hazards model. Ã¢â ¬Â¦ Model features, ideas and alternatives are given Ã¢â ¬Â¦ is clearly and concisely written and theory is illustrated with lot of examples. It aims at the practitioner as it covers all practical problems. Ã¢â ¬Â¦ I think that the authors have succeeded in writing an excellent monograph on practical survival analysis. It is recommended for everyone who is working in this research field." (M. H. J. de Bruijne, Kwantitatieve Methoden, Vol. 22 (66), 2001)

This book presents some of the recent developments in survival methods, along with the appropriate code in S-PLUS and SAS so they can be implemented. The book will be of interest to researchers, practitioners, and graduate students working in the areas of biostatistics, epidemilogy, and medical research.

Terry Therneau is a research statistician at the Mayo Clinic and Patricia Grambsch is a Professor of

Biostatistics at the University of Minnesota. The Cox proportional hazards model has been one of the key methods for analyzing survival data with covariates for the last 25 years. Proportionality is a key assumption that limits its use. There has long been a need to find methods which diagnose when the hazard rates are not proportional and provide alternative methods in such situations. Using the theory of counting processes the authors are able to extend the Cox model to more general situations including multiple/correlated event data using either marginal models or random effects (frailty) models. Time dependent covariates are also covered. Some of the theory of martigales and counting processes is included to make the book self-contained. Generalized residuals are used to identify outlying and influential observations (analogous to ordinary regression) and also to assess the proportional hazards assumption.Although the topics are advanced and the mathematical level is high the book is designed for practitioners, emphasizing applications and providing numerous examples, many from the authors' experience. Statistical analyses are done in SAS and SPlus. The authors tend to use SAS for data management and analysis and SPlus for diagnostics and other plots. Therneau is an expert programmer who has written much of the necessary software in both systems.Therneau gave an excellent short course that I attended a couple of years ago at the Joint Statistical Meetings based on a draft of the text. The finished product is as good as I expected.The appendices include SAS and S-Plus tutorials on survival analysis and provide SAS Macros and S functions to apply the new methodology.The book is now (December 2008) in its 6th printing which is another testament to its value and popularity and a nice deal at 's current price of $87. But O'Quigley's book is out now too. So maybe Terry and Patricia should be thinking about doing a revision if they don't already have one in the works.

Thank you!

I bought the kindle edition of this book so that I would not have to carry around a hard cover book. The text is difficult to read. It looks as if it has been scanned. Some words are broken into as much as three segments! Often parts of the letters are missing. For example, when a beta appears often the back of it is either very thin or missing entirely. I would not mind if was charging $10 for the book but they are charging upwards of $70 for the kindle edition of the book. For that price they should deliver a perfect file that does not make ones head spin every time they try to read it. If necessary they should retype the whole book!

As a biostatistics PhD student I've had to endure many very poorly written textbooks (though there

are many good one's too). Not only is this book a great text on applied survival analysis, it's a great piece of statistical writing and should be used as an example for all applied texts. The general approach of introducing the theory followed by examples with SAS/SPlus code makes learning the material easy and fun. I wish all statistics texts were even half this good!

This text is one of the few to make the work of Andersen et al. (Statistical Models Based on Counting Processes, Springer, 1993) accessible to the average statistician. It has three limitations: 1) fails to mention the use of permutation tests for hypotheses regarding the Nelson-Aalen estimator, 2) fails to cite Good PI, Globally almost most powerful tests for censored data,Nonpar Statist 1992, 1:253-262. 3) fails to deal with multiple dependent events (the most common case). The text also fails to be prescriptive; one is often left feeling that all tests are equal which simply isn't the case.

Technically it looked good and may have been great. The chief problem was the spottiness of the print. Where the character we at the thinnest the print was missing. I have experienced many early texts. They require the eye strain and this should be clearly printed. Wiley is a big name and I have not experienced this before. Please improve the quality. If this is an isolated run for kindle. It almost looked as if someone had photocopied the book by hand.These are my impressions. The quality of the text is found wanting.

Great book, excellent seller!

Quick delivery. Reasonable price. The book was on brand new condition as it was explained. Thank you.

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