Bayesian Item Response Modeling: Theory and Applications (Statistics for Social and Behavioral Sciences)

Jean-Paul Fox
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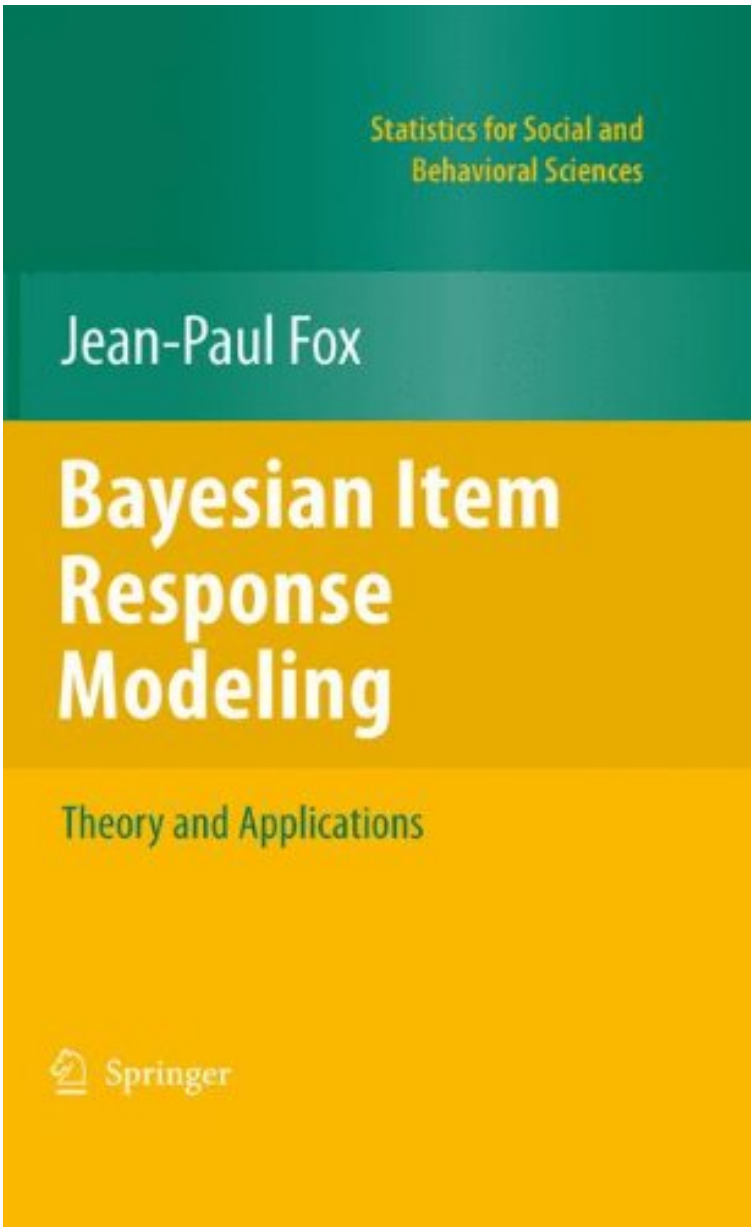

#2448623 in Books Jean Paul Fox Fox Jean Paul 2010-06-08Original language:EnglishPDF # 1 9.21 x .75 x 6.14l, 1.40 #File Name: 1441907416313 pagesBayesian Item Response Modeling Theory and Applications | File size: 52.Mb

Jean-Paul Fox : Bayesian Item Response Modeling: Theory and Applications (Statistics for Social and Behavioral Sciences)

before purchasing it in order to gage whether or not it would be worth my time, and all praised Bayesian Item Response Modeling: Theory and Applications (Statistics for Social and Behavioral Sciences):

0 of 4 people found the following review helpful. Five StarsBy Bear WanderingBrand new book. The book was shipped fast to me. No complaint at all.1 of 1 people found the following review helpful. One of the best statistics books I have encounteredBy Bayesian freakOne of the best statistics books I have encountered. The author clearly develops the IRT theory as well as the Bayesian theory. IRT assumptions, limitations and the link to CTT are clearly explained.

The modeling of item response data is governed by item response theory, also referred to as modern test theory. The eld of inquiry of item response theory has become very large and shows the enormous progress that has been made. The mainstream literature is focused on frequentist statistical methods for - timating model parameters and evaluating model t. However, the Bayesian methodology has shown great potential, particularly for making further - provements in the statistical modeling process. The Bayesian approach has two important features that make it attractive for modeling item response data. First, it enables the possibility of incorpor- ing nondata information beyond the observed responses into the analysis. The Bayesian methodology is also very clear about how additional information can be used. Second, the Bayesian approach comes with powerful simulation-based estimation methods. These methods make it possible to handle all kinds of priors and data-generating models. One of my motives for writing this book is to give an introduction to the Bayesian methodology for modeling and analyzing item response data. A Bayesian counterpart is presented to the many popular item response theory books (e.g., Baker and Kim 2004; De Boeck and Wilson, 2004; Hambleton and Swaminathan, 1985; van der Linden and Hambleton, 1997) that are mainly or completely focused on frequentist methods. The usefulness of the Bayesian methodology is illustrated by discussing and applying a range of Bayesian item response models.

From the reviews:Item response theory is a general paradigm for the design and analysis of questionnaires measuring abilities and attitudes of individuals. the book is written in a concise style and the technical level of the book is relatively high. I believe this book makes an important contribution in summarizing much of the important literature in Bayesian IRT and I think it will lead to future books focusing on the use and interpretation of these models from a practitioners perspective. (Jim Albert, Journal of the American Statistical Association, Vol. 106 (495), September, 2011)This book covers the parameter estimation of standard and extended IRT models using the Bayesian simulation based MCMC method. There are many Bayesian data analysis books, but this is the first book purely devoted to the Bayesian estimation of IRT models. Overall, it is a good book for advanced learners to grasp the theoretical and technical detail of Bayesian MCMC estimation of extended IRT models adapted to a specific measurement setting. (Hong Jiao, Psychometrika, Vol. 76 (2), April, 2011)This book develops a comprehensive treatment of Bayesian item response modelling . The book is mostly self-contained. Each chapter ends with a section of carefully thought-out exercises covering both the mathematical aspects of the models and their application to the analysis of interesting real-life data. This book will equally cater for those users who just want to apply the models to analyze their data, and more technical users willing to get a deeper understanding of the models . (Eduardo Gutirrez-Pea, International Statistical , Vol. 79 (3), 2011)From the Back CoverThis book presents a thorough treatment and unified coverage of Bayesian item response modeling with applications in a variety of disciplines, including education, medicine, psychology, and sociology. Breakthroughs in computing technology have made the Bayesian approach particularly useful for many response modeling problems. Free from computational constraints, realistic and state-of-the-art latent variable response models are considered for complex assessment and survey data to solve real-world problems. The Bayesian framework described provides a unified approach for modeling and inference, dealing with (nondata) prior information and information across multiple data sources. The book discusses methods for analyzing item response data and the complex relationships commonly associated with human response behavior and features Self-contained introduction to Bayesian item response modeling and a coverage of extending standard models to handle complex assessment data A thorough overview of Bayesian estimation and testing methods for item response models, where MCMC methods are emphasized Numerous examples that cover a wide range of application areas, including education, medicine, psychology, and sociology Datasets and software (S+, R, and WinBUGS code) of the models and methods presented in the book are available on www.jean-paulfox.com Bayesian Item Response Modeling is an excellent book for research professionals, including applied statisticians, psychometricians, and social scientists who analyze item response data from a Bayesian perspective. It is a guide to the growing area of Bayesian response modeling for researchers and graduate students, and will also serve them as a good reference. Jean-Paul Fox is Associate Professor of Measurement and Data Analysis, University of Twente, The Netherlands. His main research activities are in several areas of Bayesian response modeling. Dr. Fox has published numerous articles in the areas of Bayesian item response analysis, statistical methods for analyzing multivariate categorical response data, and nonlinear mixed effects models.About the AuthorJean-Paul Fox is Associate Professor of Measurement and Data

Analysis, University of Twente, The Netherlands. His main research activities are in several areas of Bayesian response modeling. Dr. Fox has published numerous articles in the areas of Bayesian item response analysis, statistical methods for analyzing multivariate categorical response data, and nonlinear mixed effects models.