Werk

Titel: Univariate Discrete Distributions - N. L Johnson; S. Kotz; A. W. Kemp.

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quasi-regular for a general quasi-open set. In applications, it is important to consider a level set defined by a quasi-continuous function rather than a continuous function, so that Ma–Röckner's notion of quasi-regularity would be important in future even in this specific respect.

Since things are presented in this book in a most general fashion in accordance with the above-mentioned background, the readers are advised to read the text just by looking at those concrete examples provided in Chap. 2 and Sect. 4.4 in order to understand what is really going on. Actually Sects. 2.3 and 4.4 in themselves serve as a very nice introduction to the infinite dimensional Dirichlet forms.

In Chap. 1, the notion of the non-symmetric Dirichlet form is formulated essentially in the same way as in Oshima's Lecture Notes at Erlangen University, but the basic theory is neatly presented by assuming that the underlying space X is only a σ-finite measure space. As for a treatment of symmetric Dirichlet forms under such a topology free setting, see also the first chapter of a book by N. Bouleau and F. Hirsch entitled "*Dirichlet forms and analysis on Wiener space*" (Walter de Gruyter, 1991).

Osaka M. Fukushima

N. L. Johnson, S. Kotz, A. W. Kemp: Univariate Discrete Distributions, John Wiley & Sons, Inc., 1992, 565 pp., £58.00

This book consists of the following chapters:

1. Preliminary information
2. Families of discrete distributions
3. Binomial distribution
4. Poisson distribution
5. Negative binomial distributions
6. Hypergeometric distributions
7. Logarithmic distribution
8. Mixture distributions
9. Generalized (stopped sum) distributions
10. Matching, occupancy, and runs distributions
11. Miscellaneous discrete distributions

Its intended readership is masters degree students in probability and statistics and researchers in discrete probability models.

This book is a complete and thorough revision of an earlier classic reference-cum-textbook published about 23 years earlier. An immense amount of new research work had appeared in the area during this period, and there was a great need for a new book on the subject. This revised edition by the three authors

(two original and one new) has filled that need in an admirable manner. The major changes in the book are indicated in the Preface.

Chapter 1 on preliminary information is quite extensive and contains all the necessary mathematical, probabilistic, statistical and computational results. This will be quite useful for the students and researchers. Chapter 2 deals with the five major families of distributions which provide an overview or umbrella for many distributions and enables one to understand some general properties of the families.

The classical binomial, Poisson and negative binomial distributions and their properties, estimations, characterizations and applications are described in great detail in Chaps. 3, 4, and 5. Many other distributions related to them and the truncated models are quite interesting and useful additons with the respective classical models.

Chapter 6 deals not only with the hypergeometric distribution but also with its modifications, generalizations and related models. Many special cases and applications have been discussed. They provide an understanding of how the models change. Chapter 8 on mixtures of distributions contains a number of methods for obtaining mixture distributions and why they are sometimes needed. This material is quite useful.

Chapter 9 is quite large and new and contains more than a dozen discrete probability models which will find numerous applications. Also, Chap. 10 contains good amount of new useful research work. Many discrete probability models which could not have been included in other chapters have been given in the last chapter. Some of these distributions are very useful and may generate good new research work.

The authors must have read about 2000 research papers to write this book and have cited about 1500 of them in the references. Some of the details and quotations from the research papers given in the book clearly indicate that the authors must have spent a tremendous amount of time in reading such a large number of research papers. They have really done an admirable job in writing this book. It is rather strange that the material on the new class of Lagrangian distributions and its various families has been split into many parts and has been given in Chaps. 2–5, 7, 9, and 11. It would have been better if all this work was consolidated in a single chapter. However, they must have had some limitations. Since a book of this nature takes a long time to complete, it is very hard to make changes at a late stage. Through this book the authors have done a great service to the community of probabilists, statisticians, and researchers. They deserve our thanks and heartiest congratulations for their excellent contribution.

Calgary P. C. Consul