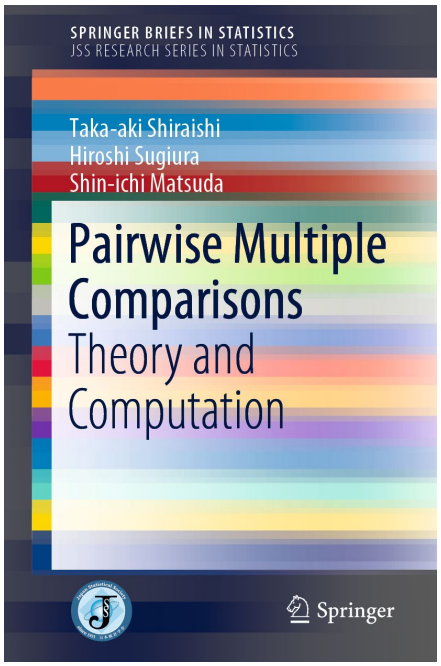

Springer

1st edition

1st ed. 2019, VIII, 102 p. 11 illus.

Printed book
Softcover

Printed book
Softcover
ISBN 978-981-15-0065-7
£ 44,99 | CHF 59,00 | 49,99 € | 54,99 € (A) | 53,49 € (D)

Available

Discount group
Science (SC)

Product category
Brief

Series
JSS Research Series in Statistics

Statistics : Statistical Theory and Methods

Shiraishi, T.-a., Sugiura, H., Matsuda, S.-i.

Pairwise Multiple Comparisons

Theory and Computation

- **Introduces closed testing procedures for all-pairwise comparisons**
- **Discusses multiple comparison procedures under simple ordered restrictions of location parameters in multi-sample models**
- **Explains the sinc method, which is optimal for computing the upper 100 percentiles of complicated distributions**

This book focuses on all-pairwise multiple comparisons of means in multi-sample models, introducing closed testing procedures based on maximum absolute values of some two-sample t-test statistics and on F-test statistics in homoscedastic multi-sample models. It shows that (1) the multi-step procedures are more powerful than single-step procedures and the Ryan /Einot–Gabriel/Welsh tests, and (2) the confidence regions induced by the multi-step procedures are equivalent to simultaneous confidence intervals. Next, it describes the multi-step test procedure in heteroscedastic multi-sample models, which is superior to the single-step Games–Howell procedure. In the context of simple ordered restrictions of means, the authors also discuss closed testing procedures based on maximum values of two-sample one-sided t-test statistics and based on Bartholomew's statistics. Furthermore, the book presents distribution-free procedures and describes simulation studies performed under the null hypothesis and some alternative hypotheses. Although single-step multiple comparison procedures are generally used, the closed testing procedures described are more powerful than the single-step procedures. In order to execute the multiple comparison procedures, the upper 100 percentiles of the complicated distributions are required. Classical integral formulas such as Simpson's rule and the Gaussian rule have been used for the calculation of the integral transform that appears in statistical calculations. However, these formulas are not effective for the complicated distribution. As such, the authors introduce the sinc method, which is optimal in terms of accuracy and computational cost.

Order online at springer.com/booksellers

Springer Nature Customer Service Center GmbH
Customer Service
Tiergartenstrasse 15-17
69121 Heidelberg
Germany
T: +49 (0)6221 345-4301
row-booksellers@springernature.com

Prices and other details are subject to change without notice. All errors and omissions excepted. Americas: Tax will be added where applicable. Canadian residents please add PST, QST or GST. Please add $5.00 for shipping one book and $ 1.00 for each additional book. Outside the US and Canada add $ 10.00 for first book, $5.00 for each additional book. If an order cannot be fulfilled within 90 days, payment will be refunded upon request. Prices are payable in US currency or its equivalent.

ISBN 978-981-15-0065-7 / BIC: PBT / SPRINGER NATURE: SCS11001