



Constrained statistical inference: Inequality, order and shape restrictions

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Abstract

An up-to-date approach to understanding statistical inference Statistical inference is finding useful applications in numerous fields, from sociology and econometrics to biostatistics. This volume enables professionals in these and related fields to master the concepts of statistical inference under inequality constraints and to apply the theory to problems in a variety of areas. Constrained Statistical Inference: Order, Inequality, and Shape Constraints provides a unified and up-to-date treatment of the methodology. It clearly illustrates concepts with practical examples from a variety of fields, focusing on sociology, econometrics, and biostatistics. The authors also discuss a broad range of other inequality-constrained inference problems that do not fit well in the contemplated unified framework, providing a meaningful way for readers to comprehend methodological resolutions. Chapter coverage includes: • Population means and isotonic regression • Inequality-constrained tests on normal means • Tests in general parametric models • Likelihood and alternatives • Analysis of categorical data • Inference on monotone density function, unimodal density function, shape constraints, and DMRL functions • Bayesian perspectives, including Stein's Paradox, shrinkage estimation, and decision theory.

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