

Weighted Empiricals and Linear Models

by Hira L. Koul

An empirical process that assigns possible different non-random (random) weights to different observations is called a *weighted (randomly weighted) empirical process*. These processes are as basic to linear regression and autoregression models as the ordinary process is to one sample models. However, their usefulness in studying linear regression and autoregression models has not been fully exploited. This monograph addresses this question to a large extent.

Contents

Introduction

Weighted empirical processes; M-, R-, and scale estimators; Minimum distance estimators and goodness-of-fit tests; Randomly weighted empirical processes

Asymptotic Properties of Weighted Empiricals

Introduction; Weak convergence; Asymptotic uniform linearity (A.U.L.) of residual w.e.p.'s; Some further probabilistic results for w.e.p.'s

Linear Rank and Signed Rank Statistics

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M, R, and Some Scale Estimators

Introduction; M-estimators; Distribution of some scale estimators; R-estimators; Estimation of $Q(f)$

Minimum Distance Estimators

Introduction; Definitions of M. D. estimators; Finite sample properties and existence; Asymptotics of minimum dispersion estimators: A general case; Asymptotic uniform quadraticity; Asymptotic distributions, efficiencies, and robustness

Goodness-of-Fit Tests for the Errors

Introduction; The supremum distance tests; L_2 -distance tests; Testing with unknown scale; Testing for symmetry of the errors

Autoregression

Introduction; Asymptotic uniform linearity of W_n and F_n ; GM- and R-estimators; M.D. Estimation; Goodness-of-fit testing

Appendix

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Stochastic Inequalities

Moshe Shaked and Y. L. Tong, Editors

Proceedings of the Joint AMS-IMS-SIAM Summer Research Conference on Stochastic Inequalities, Seattle, Washington, July 1991. The conference focused on the recent developments in the theory and applications of stochastic inequalities with special emphasis on convexity-related, majorization-related inequalities and stochastic convexity; dependence-related probability and moment inequalities; inequalities in multivariate distributions and multivariate analysis; inequalities in reliability theory and queuing theory; and, applications in business and economics, operations research, and other related fields. This volume is a collection of papers based on the lectures given at the conference.

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Higher Order Asymptotics

by Jayanta K. Ghosh

These lecture notes are concerned with Edgeworth expansions, higher order efficiency, expansion of posterior, probability matching priors and related topics. The lectures were originally presented at the NSF-CBMS Regional Conference held at Chapel Hill, North Carolina, in August 1991.

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