PREFACE

The volume comprises papers presented at two consecutive conferences on multivariate statistical analysis – MSA'93 and MSA'94.

The main focus of these conferences were different applications of modern multivariate statistical methods in economics, as well as deriving new methods.

One of fundamental applications was the estimation of parameters of switching regression models. Three papers presented deal with pseudo--maximum likelihood estimation of parameters used as an indicator of sample divisor. Bayesian estimation of a two-phase regression model. One of the papers presents a nonparametric technique of sliced inverse regression.

The problem of robustness appeares in investigating population grouping methods. A study of the influence of applying different distance measures in cluster analysis is presented.

Some stress in also put on testing for normality in linear models. In two of the presented papers the method of elimination of distributing parameters is used.

Time series analysis is presented in one paper and involves the problem related to the scatter of multivariable observations which can be measured by means of a coefficient called a discriminant of multivariable estimations.

One of the papers presents the sequential probability ratio test (SPRT) and its application to the verification of statistical hypotheses about normal mean. The opetating characteristic function of the SPRT and average necessary sample number are investigated.

More applicational view can be found in the paper presenting different inequality measures of income distributions in Poland. The economic distance ratios introduced by Dagum are applied to assess in inequality.

Theoretical side of statistics is represented by three papers. One of them is devoted to deriving formulae for the moments of doubly truncated Gamma distribution. The result is important because it generalizes the Gamma, Weibull, and Raleigh X distributions. Another theoretical result is the study of limit laws for multivalued random variables. The variables considered have to be compact or weakly compact in Banach space. Theory is also in an attempt to characterize the orders of VARMA models. The method presented is based on the difference between the rank of certain matrices defined from the sample covariance matrices of the process.

One paper deals with the notion of artifical intelligence and presents different methods of solving problems by self-improving computer algorithms (inductive algorithms).

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