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FIFTH ISSUE

A message from the Editor-in-Chief

The fifth issue of the Chilean Journal of Statistics contains the following seven articles that address various interesting topics related to statistics and probability:

(i) The first article is authored by Carmen Batanero and Carmen Díaz. Dr. Batanero has a wide recognition around the world for her contributions in the field of statistics education. In this article, the authors introduce some reflections on the importance of training school teachers to teach probability. They analyze the reasons why the teaching of probability is difficult for mathematics teachers. In addition, they describe the contents needed in the preparation of teachers to teach probability and suggest possible activities to carry out this training.

(ii) The second article is authored by Alessandra Guglielmi, Francesca Ieva, Anna M. Paganoni and Fabrizio Ruggeri. Dr. Ruggeri has an extensive experience in the analysis of survival and reliability and he is internationally recognized due to his outstanding contributions in Bayesian statistics. In this article, the authors propose a Bayesian model of random effects for survival probabilities after acute myocardial infarction. They present a case-study by applying a Bayesian hierarchical generalized linear model to analyze a real data set on patients with myocardial infarction diagnosis. In particular, they obtain posterior estimates of the model parameters (regression and random effects parameters) through a MCMC algorithm. Some issues about model fitting are also discussed through the use of predictive tail probabilities and Bayesian residuals.

(iii) The third article is authored by Christophe Chesneau and Nargess Hosseinioun. Dr. Chesneau is a highlighted researcher on the topic of the article. In this article, the authors conduct an interesting study on nonparametric density estimation. They investigate the estimation of a common but unknown function associated with a density function of non-identically distributed observations by means of the powerful tool of the wavelet analysis. In order to do this, they construct a new linear wavelet estimator and study its performance for independent and dependent data. Then, in the independent case, they develop a new adaptive hard thresholding wavelet estimator and prove that it attains a sharp rate of convergence.

(iv) The fourth article is authored by Rahim Mahmoudvand and Mohammad Zokaei. In this article, the authors provide applications of the Hankel matrix in spectral analysis. The aim of their work is to obtain some theoretical properties of the singular values of the Hankel matrix that can be used directly for choosing proper values of the two parameters of the singular spectrum analysis.

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(v) The fifth article is authored by Luis Gustavo Bastos Pinho, Juvêncio Santos Nobre and Sílvia Maria de Freitas. In this article, the authors consider linear mixed models and diagnostic tools for statistical analysis of some practical actuarial problems. Their idea is based on the fact that the linear mixed models are an alternative to traditional credibility models. Thus, considering that the main advantage of linear mixed models is the use of diagnostic methods, they consider that these methods may help to improve the model choice and to identify outliers or influential subjects, which deserve better attention by the insurer.

(vi) The sixth article is authored by Lutemberg Florencio, Francisco Cribari-Neto and Raydonal Ospina. Dr. Cribari-Neto is a very recognized Brazilian researcher with excellent academic credentials. In this article, the authors perform real estate appraisal using a class of statistical models called generalized additive models for location, scale and shape (GAMLSS). By means of an empirical analysis, they show that the GAMLSS models seem to be more appropriate for estimation of the hedonic prices function than the regression models currently used to that end.

(vii) The seventh article of this issue is due to Arabin Kumar Dey and Debasis Kundu. Dr. Kundu is a highly productive Indian researcher. In this article, the authors study the discrimination between the bivariate generalized exponential and bivariate Weibull distributions. In order to do this, they use the difference of the respective maximized log-likelihood functions, for which they determine the asymptotic distribution of the corresponding test statistic and calculate the associated asymptotic probability of correct selection. Their work is finished with numerical illustrations of the effectiveness of the propose methodology.

Finally, I take this opportunity to give my most sincere thanks to our Executive Editor, Professor Víctor Leiva, for his constant, profound/deep and noble commitment with the edition of each issue of our journal.

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