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EDITORIAL

Presentation of Volume 4, 1, 2022

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Dear readers and dear members of the statistical community:

It is a great pleasure for me to present Volume 4, 1, corresponding to the year 2022. This volume is made up of eight papers: one invited article, three articles within the general statistics section and four articles in the section of official statistics.

The invited article has the title: "A review on specification tests for models with functional data", whose author is Professor Wenceslao González-Manteiga, winner of the second National Statistics Prize. Wenceslao is Professor of Statistics and Operations Research at the University of Santiago de Compostela. The award jury highlighted the contribution of Prof. González-Manteiga to non-parametric modeling of dynamics and dependencies in complex systems and to the development of non-parametric statistics over the last 30 years. The winner has been teaching for 42 years, during which he has participated in university management and scientific evaluation at all levels, supervsing more than 30 doctoral theses. Thanks to his work, he has contributed knowledge to society, both in the scientific field (Engineering, Chemistry, Biology, Economics or Medicine) as well as in the industrial sector.

The article presents the most relevant specification tests for models with functional data. Due to the progress in technological advances, massive amounts of data are currently generated and new statistical methodology should be properly deployed to manage this information. The functional data are an example of particular importance. The article reviews the most notable developments in this context, providing some nice illustrations from real data sets.

The next three papers are presented in the general section. The first paper of this section is titled, "Testing Benford's Law: from small to very large data sets", and its author is Leonardo Campanelli. The paper discuss some limitations of the use of generic tests, such as the Pearson's χ^2, for testing Benford's law. The article introduces a new statistic whose sample values are asymptotically independent on the sample size making it a natural candidate for testing Benford's law in very large data sets.

The title of the second paper is, "The gamma flexible Weibull distribution: Properties and Applications", whose authors are Alexsandro A. Ferreira and Gauss M. Cordeiro. The paper proposes a new gamma flexible Weibull distribution, which presents a bathtub-shaped hazard rate, and some of its properties are obtained, including estimation and simulation to examine the consistency of the estimates. The utility of the proposed model is analysed using three real

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applications.

The last paper of this section is titled, “On moments and entropy of the gamma-Gompertz Distribution", by Fredy Castellares and Artur J. Lemonte. The three-parameter gamma-Gompertz family of distributions was introduced recently in the literature. The analytical expressions provided for the ordinary moments and Shannon entropy are not correct and hence cannot be used for computing such quantities. The authors derive two closed-form expressions for the mean and a closed-form expression for the Shannon entropy in terms of the Whittaker function.

The third section is dedicated to the articles in the the Official Statistics section. We have four interesting papers.

The title of the first paper is, “A first interim assessment of the third round of peer review of the European statistical system", by Agustín Cañada. Peer Reviews are exercises to assess compliance with the principles and indicators of the European Statistics Code of Practice by the members of the European Statistical System: Eurostat and the national statistical systems. Peer Reviews are carried out periodically (every 5/6 years), by agreement of the European Union. To date, three rounds have been carried out: in 2006-2008, in 2013-2015, and a third round is underway between 2021 and 2023. Although the third round is still ongoing at the time of writing, based on the experience of a representative group of the countries already reviewed, a first assessment can already be made of the degree of achievement of the objectives pursued. The aim of this document is to provide a first input for a future comprehensive “lessons learned exercise" and to contribute to the debate on aspects to be taken into account in future peer reviews.

The remaining three articles are dedicated to the study of mortality statistics and causes of death. The first of these articles is titled “Use of death statistics according to cause of death in health research" by Gregorio Barrio. The article discusses several aspects related to the estimation of total and cause-specific mortality rates. On the other hand, the link between socioeconomic indicators and mortality, considered by the Spanish Statistical Office, which makes it possible to study the relationship between socioeconomic factors and mortality and its variation over time is also discussed.

The title of the second paper is, “The Statistics on Causes of Death: characteristics and improvements" by Margarita García Ferruelo and María Rosario González García. This article describes the complex process of the statistics, the advances achieved in recent years, such as the implementation of an international automatic system for coding multiple causes of death and for the selection of the underlying cause or the improvement in obtaining the external causes of death, as well as its usefulness for the epidemiological studies and health research. It is also discussed some of the lessons learned during the worst pandemic period. Finally, it is proposed to collect other variables of interest for the analysis of the causes of death using available administrative sources.

The last paper of this section is titled, “Mortality statistics for assessing population health" by Enrique Regidor. The article deals with several interesting aspects of mortality statistics. From the health system perspective, the adoption of the International Classification of Diseases and Causes of Death was a crucial milestone in population health statistics, shedding light on the diseases responsible for most deaths and the trends in causes of death over time. Morbidity statistics and public health surveillance systems have important objectives, but they do not allow adequate

monitoring of the frequency of diseases and other health problems, nor can they quantify diseases' impact on population health. On the other hand, statistics on cause of death do provide this information thanks to the combination of two features: the exhaustiveness of the data they collect and the objective nature of the phenomenon they quantify.

Finally, I would like to thank again all the authors of this volume for choosing our journal as a means of disseminating their research. I appreciate the work of the editors and reviewers of the papers, who contribute to maintaining a high standard of scientific quality.