



Editorial to the special issue on “Advances in statistical modelling, methods and applications”

Pier Francesco Perri¹ · Gennaro Punzo² · Carlo Cavicchia³

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1 The Issue

This Special Issue is dedicated to the 51st Scientific Meeting of the Italian Statistical Society, which took place from June 22 to 24, 2022, in Caserta, Italy, attracting over 460 participants. The conference encompassed a broad spectrum of theoretical and applied topics, featuring 4 plenary sessions, 16 specialized sessions, 17 solicited sessions, and 43 contributed sessions. Additionally, the conference offered valuable insights and networking opportunities for attendees. In this Special Issue, five articles have been carefully selected through a double-blind peer review process. These articles delve into scientific research across diverse fields, utilizing a variety of statistical methodologies while aligning with the overarching theme of the 51st Scientific Meeting of the Italian Statistical Society.

The first article in this collection—by Maricic and Jeremic—introduces a novel iteration of the BoD model, termed the Bootstrap I-distance Benefit-of-the-Doubt (B-ID-BoD) model. This innovative model is applied to the Ease of Doing Business (EDBI) composite indicator, and it is individually solved for each observed country, yielding a unique solution that satisfies all the imposed constraints.

In the second contribution, Ren, Guglielmi and Maestripieri delve into the examination of factors that impact women’s participation in labor markets and whether these influences exhibit disparities across various countries and regions in Southern Europe. While higher levels of education are found to enhance women’s employment prospects, the presence of children and having a partner who is already employed tend to decrease their engagement in the labor force. It is worth highlighting that individual attributes are influenced by household

✉ Pier Francesco Perri
pierfrancesco.perri@unical.it

Gennaro Punzo
gennaro.punzo@uniparthenope.it

Carlo Cavicchia
cavicchia@ese.eur.nl

¹ Department of Economics, Statistics and Finance “Giovanni Anania”, University of Calabria, Rende, CS, Italy

² Department of Economic and Legal Studies, University of Naples Parthenope, Naples, Italy

³ Econometric Institute, Erasmus University Rotterdam, Rotterdam, The Netherlands

composition, and a more pronounced gender gap is observed in economically vulnerable regions, with Italy, in particular, demonstrating a significant gender disparity.

In the third paper, Simone, Corduas and Piccolo present an integrated methodology that situates CUB mixture models for rating data within a temporal framework. This approach is employed to scrutinize the simultaneous development of inflation assessments and expectations in Italy over time. After estimating the relationship between the time series, their study reveals that each of these series exhibits a significant inertial component, indicating a gradual change over time. Furthermore, the research demonstrates that the influence of past judgments regarding price levels and prior expectations varies considerably across the three distinct time periods in shaping current expectations for the future.

The next article—by Musella, Castellano and Bruno—explores the potential of localized regression techniques, including geographically weighted regression (GWR) and geographically weighted panel regression (GWPR), when juxtaposed with traditional global methods. Their study specifically conducts a specific assessment of these methods by comparing their performance when incorporating both temporal and spatial dimensions.

In the fifth and last article, Alboni, Pavone and Russo undertake a comprehensive examination of prevalent techniques employed in topic identification within a corpus. This investigation is performed using an extensive dataset of original texts sourced from an e-mobility newsletter. It centers on evaluating the semantic coherence and similarities among various identification methods. Additionally, the study discerns and appraises the relationships between different topics.

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