

DSS Statistics Seminar

June 11, 2020, 2:00 p.m.

<https://meet.google.com/ora-puag-frw>

Multiway methods for cubic matrices of complex phenomenon over time: some Istat examples

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Aim of this seminar is to show some ISTAT applications of Factorial Dynamic Analysis (FDA) on three-way data. FDA was proposed for the first time in the '70s by Coppi and Zannella and it is a collection of four strategies for multiway analysis on data classified by three dimensions, where two dimensions are the classical units and variables, and the third one is time. Each one of the four FDA proposed strategies consists in a combined use of factorial and regression tools applied to specific source of variation in the data. The common denominator in FDA is the identified source of variation, described by the overall variance-covariance matrix, resulting from variability provided by each dimension: variables' and units' variability over time, overall variability among variables. Each FDA strategy addresses sources of variation in a different way, focusing more on a single source and giving less weight to the other sources. After an overall description of the four FDA strategies, the first strategy will be demonstrated in more details and two its applications will be discussed. First application is about victims of crime data collected by police in Italian provinces in 2011-2018. Second application shows the relationship between health, food and life satisfaction based on data collected from different sources, referring to Italian regions in 2009-2016.



SAPIENZA
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Seminar Series

New challenges in Official Statistics

In recent decades, National Statistical Institutes moved toward producing official statistics by exploiting multiple sources of information. The relevance of multi-source statistics in such a context is becoming increasingly evident and it led to important research projects in the field. With this seminar series, we aim to give an up-to-date picture of current developments. The highlight will be on observed progress in the direction of using formal statistical models, and potential future areas of research.

The list of topics covered in the series is:

1. Data Integration and issues related to integrating information from different sources
2. Methods for population estimation with multisource data
3. Mixed mode data collection
4. Small area estimation
5. Seasonal adjustments

This is the first attempt to join forces from ISTAT and the department of Statistics to give access to the directions of current development and the definition of new areas of interest in official statistics.

The Organizers

Marco Di Zio, Danila Filipponi (ISTAT)

Marco Alfò, Giovanna Jona Lasinio, Roberto Rocci (Sapienza)

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