RISIS
RESEARCH INFRASTRUCTURE FOR SCIENCE AND INNOVATION POLICY STUDIES

This project is funded by the European Union under Horizon2020 Research and Innovation Programme Grant Agreement n°824091

RISIS TRAINING – CALL FOR SUBMISSION

SAPIENZA
UNIVERSITÀ DI ROMA

Advanced Benchmarking Models and Techniques

DIAG Department
Sapienza University of Rome
Rome, 22-25-29 March 2021
Online, on Sapienza Meet Platform

COURSE PRESENTATION

The concept of performance is multidimensional. It refers to the results achieved in carrying out activities (or processes) in micro, meso and macro contexts. Measuring performance means having a representation model of the output/ outcome process connected to the inputs (resources) needed to produce it. It also requires the availability of data to apply mathematical-statistical methods to assess performance. Performance measurement methods include quantitative frontier benchmarking methods. These methods are based on the estimation of an efficient benchmarking frontier against which to compare the performance of a sample of units. The identification of targets and efficient peers to benchmark the units is an outcome of an efficiency analysis based on the estimation of an efficient frontier.
Given their high flexibility and the recent developments introduced in the methodological literature, quantitative benchmarking techniques are suited for being applied to all the different datasets available and that will be developed in RISIS. In all the cases in which the performance of DMUs has to be measured, based upon a set of selected performance dimensions or metrics, nonparametric techniques, with their recent robust and conditional extensions, can be applied. Their empirical orientation and the absence of a priori assumptions about the functional relationships between inputs and outputs (i.e. its nonparametric nature) may be particularly suited in a number of studies involving best-practice identification in Research, Education and Innovation, including non-profit and public, regulated and private sectors.

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OBJECTIVES:

-Introduce the participants to the importance of Performance models and methods for research and higher education studies;

-Provide the participants with the basic knowledge for understanding and using quantitative performance techniques in their field;

-Propose an overview on the available tools for implementing performance and efficiency analysis techniques in their context of application;

-Offer tutorials on the main softwares that will be used during the course;

-Encourage the participants to explore the proposed tool with their own datasets;

-Offer the possibility to interact with the Course's lecturers to have advice on their own specific needs.

CONTENTS:

The following contents will be developed:

- A Conceptual framework for performance modeling
- State of the art of quantitative performance measurement techniques
- Laboratory sessions: tutorials for the introduction to the software and the main techniques
- Practical exercises in groups to implement the learned concepts and techniques.

PROGRAM OF COURSE

Day 1: Monday 22 March 2021
9:00 -9:15 Welcome of participants and Introduction to the course
09:15-11:00 Lecture: A Conceptual framework for performance modeling (Cinzia Daraio)
Break
11:30-13:00 State of the art of quantitative performance measurement techniques (Cinzia Daraio)
14:30-16:00 Laboratory session -Tutorial on R (Thyago Nepomuceno)
Break
16:30-18:00 Laboratory session -Tutorial on Matlab (Simone Di Leo and Giammarco Quaglia)

A midweek virtual meeting/appointment will be scheduled to help and support in the group exercises: **Thursday 25 March 2021** from 12 a.m. to 3 pm.

Day 2: Monday 29 March 2021
9:00-9:45 Group presentation (first block)
Break
10:00-10:45 Group presentation (second block)
Break

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11:00-11:45 Group Presentations (third block)
Break
12:00-12:30 Closing session and take away (Cinzia Daraio)

CONDITIONS FOR PARTICIPATION

TARGET AUDIENCE:

Target audience for this course are researchers in research policy and higher education with a quantitative orientation, which aim to extend their competence to Performance modeling and estimation techniques. Basic requisite for admission will be:

- Knowledge of basic principle of statistics and basic programming
- Have R and/or Matlab installed on your computer

No other prerequisites are requested.

SELECTION CRITERIA:

Priority will be given to RISIS members. The remaining places will be allocated to researchers according to their CV and interest for their research.

FACILITIES SUPPLIED:

- Slides of the course;
- Practical exercises on the softwares that will be used during the course;
- Programs for running and implementing the proposed methods.

ORGANISATIONAL DETAILS:

- No fees to be paid by European participants;
- To all accepted participants will be provided information about the software programs that will be used during the course.

DEADLINE FOR REQUEST OF PARTICIPATION:

10 of March 2021

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ORGANISING COMMITTEE AND CONTACT DETAILS

Organizing committee (DIAG, Sapienza University of Rome):

- Alessandro Avenali
- Giuseppe Catalano
- Cinzia Daraio (Director of the course)

Technical support (DIAG, Sapienza University of Rome) and contact:

- Simone Di Leo: dileo@diag.uniroma1.it
- Giammarco Quaglia: giammarco.quaglia@uniroma1.it